AccXES Controller Software
Version 10.0

HP-PJL Specification

July 12, 2004

Contents

AccXES PJL Interface

1 Intended Audience

This document is intended for use by the AccXES software development team and other Xerox technical personnel interested in reviewing the AccXES definition and implementation of the HP-PJL Job Control language. Third party integrators, host client printer driver and utility developers, and related printing system developers will also find useful information in this document. No familiarity with the AccXES software architecture is assumed or required for understanding this document. However, the reader should have a thorough understanding of HP-PJL as defined in Hewlett-Packard's "Printer Job Control Language Technical Reference Manual," [HP96].

Persons interested in the general technology platform and requirements of the Xerox/AccXES should refer to the "Architecture Requirements and Technologies" document also listed below.

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2 Introduction

Many of the data formats and page description languages supported by the AccXES architecture do not have a mechanism to control many job processing attributes. Other languages have some job control, but cannot control the more specialized features of the printer, such as finisher options. To access advanced printer functionality, a separate mechanism is required. This is the responsibility of the Job Control Language. Specifically, AccXES architecture supports HP-PJL, which is an industry standard printer job control language originally developed by Hewlett-Packard. The specific implementation of HP-PJL on the AccXES architecture is a superset of the core HP-PJL functionality. The HP-PJL superset is tailored to the feature set required for the Xerox printing and plotting systems.

It is intended that this language be well documented and easily available for external third party integrators to use in their development of host based print servers employing the AccXES controller in the printer as well as client platform print drivers and utilities.

Another goal of the job control language implementation is to allow remote configuration and job control/status. All operations that can be performed at the printer front panel interface should be available through the job control language implementation. Of course, client host software is required to produce the appropriate job control constructs.

HP-PJL is used to encapsulate the user jobs to provide job and printer control information. In this respect, it can be viewed as functioning "above" the level of HPGL/2, TIFF, and other printer languages. The following figure shows how HP-PJL may be combined with user print jobs. Notice that HP-PJL can be used independently of user print jobs as well.
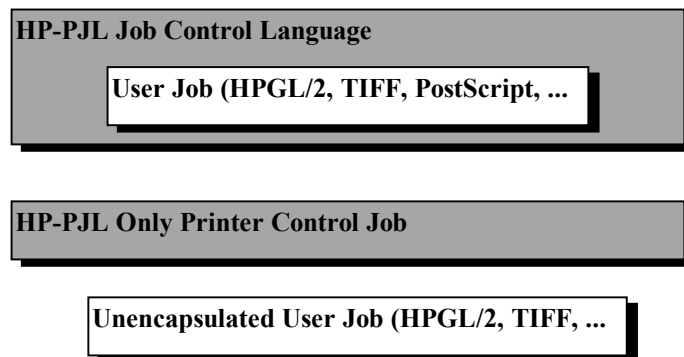
Figure: Combinations of HP-PJL and User Jobs Accepted by AccXES

The use of HP-PJL is not required so that host systems with print drivers which don't utilize HP-PJL can still be supported; however, using HP-PJL makes the work of job segmentation and data format detection error proof.

Examples of job specific control information provided by HP-PJL when encapsulating a user job include:

- Automatic Collation

- Automatic Scaling and Rotation

- Emulation Switching (explicit or automatic)

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- Multiple Copies and Electronic Collation

- Plot Nesting

- Job Accounting information

- Tray and Media Selection

- Raster Stamps, Plot Overlays, Forms

- Many others...

When HP-PJL is sent independent of user print job, it can be used to query printer status and spool queue information, change host interface parameters, or perform any action the user can perform from the printer front panel. Specific HP-PJL only jobs can be sent to:

- Change printer defaults

- Configure host interfaces

- Manipulate the printer job queue

- Obtain printer status

- Perform printer system diagnostics

- Perform Job Accounting administration.

- Program internal system FLASH memory

Hewlett-Packard's "Printer Job Language Technical Reference Manual," [HP96], provides the complete definition of HP-PJL. Only exceptions and extensions to the standard language defined by [HP96] are discussed in the sections that follow. This document provides a full specification of the AccXES customizations and extensions of the HP-PJL language. The reader is urged to review [HP96] prior to reading this document.

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3 HP-PJL Commands

This section defines the HP-PJL commands that are utilized by the AccXES software architecture as well as the custom commands defined by the AccXES architecture. A user job with custom AccXES HP-PJL commands embedded within it is required to run without error on a standard HP-PJL printer. In practice, this means that new HP-PJL commands are embedded within the HP-PJL COMMENT command.

Conversely, standard HP-PJL jobs should run without error, albeit with loss of printer feature control, on a AccXES printer. Consequently, all HP-PJL commands defined in [HP96] are implemented in AccXES printers. The AccXES printer will most closely resemble a Hewlett-Packard LaserJet 4V/4MV printer in its HP-PJL implementation.

3.1 Kernel Commands

The kernel commands detailed in the following sections are implemented in the AccXES printer.

3.1.1 UEL

The UEL command will be implemented as defined on page 4-2 of [HP96]. From the HP-PJL specification, it is defined to be the following character sequence:

<ESC>%-12345X

3.1.2 ENTER

This command is implemented as defined on page 4-4 of [HP-PJL]. The possible values to be taken by the LANGUAGE parameter are:

- AUTO
- CALCOMP
- CALS1
- CALS2
- VDS
- VCGL
- C4
- CGM
- VRASTER
- HPGL2 {Alternately, HP-GL/2}
- HPGL7585 { Alternately, HPGL}
- PCL
- POSTSCRIPT
- TIFF6

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- JPEG

- ASCII

- FLASH

- DOWNLOAD

- FILENET

The FLASH and DOWNLOAD values are special values used for upgrading printer firmware and downloading rendering objects such as raster stamps and fonts, respectively. The objects supported by the DOWNLOAD facility are detailed in the DOWNLOAD Language section

As in standard HP-PJL, the INFO CONFIG command can be used to query the printer for the list of currently supported data formats. Note that the LANGUAGE parameter to the HP-PJL ENTER command detailed above is distinct from the standard HP-PJL Environment variable LANG which is used to set the user interface language to English, French, Italian, etc. Note also, that there is another environment variable called PERSONALITY which can take on the same values as the LANGUAGE parameter above.

As specified in the HP-PJL specification [HP96], the next byte following the line feed at the end of the ENTER command must be the actual job data. In particular, no further HP-PJL commands can be placed between this command and the specified data format's job data.

3.1.3 COMMENT

The COMMENT command is implemented as defined on page 4-6 of [HP96]. In addition, custom commands specific to AccXES functionality are implemented within a COMMENT command. See the Comment Command section for details.

3.2 Job Separation Commands

3.2.1 JOB

This command is supported as defined on page 5-2 in [HP96]. All parameters are supported: NAME, START, PASSWORD, and END. The maximum length of a valid NAME parameter is 80 characters. Longer names will be truncated. The START and END parameters may not be supported in all AccXES implementations.

From the HP-PJL Reference Manual (10 Edition, Oct 1997), the following requirement is explicitly re-stated here for clarity:
"JOB commands can be nested. For example, a spooling application can send a PJL job that uses the JOB command to another spooler that encapsulates the spooled job with another JOB/EOJ command pair. When this is done, note that the job name from the outer JOB command is cleared or overwritten by the inner command."

3.2.2 EOJ

The EOJ command is supported as defined on page 5-7 of [HP96]. The maximum length of the NAME parameter supported is 80 characters. Currently, while the NAME parameter is accepted, it is effectively ignored.

3.3 Environment Commands

3.3.1 DEFAULT

The default command is supported as defined on page 6-31 of [HP96]. The list of supported environment variables is detailed in Environment Variables section.

3.3.2 INITIALIZE

This command is supported generally as defined on page 6-32 in [HP-95]. One exception is that the only environment variables that are reset are the page and job processing groups. All parameters in the communication class and the ESS and engine state class are not reset. Communication class variables are not reset so as to avoid disrupting communications on this channel and others at the time the command is received. State variables are modified as the system boots or as system events occur. They are "read-only" to HP-PJL.

3.3.3 RESET

This command is defined exactly as on page 6-38 of [HP96].

3.3.4 SET

This command is defined as described on page 6-41 of [HP96]. See Environment Variables section for a list of the supported environment variables. Note that in the AccXES implementation, the Current User Job Environment supports only processing related commands (Job and Page Group parameters). Requests to change variables that modify basic printer parameters such as host interface operational parameters are ignored in a SET command. These parameters should be modified using the DEFAULT command.

3.4 Status Readback Commands

3.4.1 INQUIRE

This command is implemented exactly as described on page 7-4 of [HP96].

3.4.2 DINQUIRE

This command is implemented exactly as defined on page 7-9 of [HP96].

3.4.3 ECHO

This command is implemented exactly as defined on page 7-14 of [HP-95].

3.4.4 INFO

This command is implemented as defined on page 7-16 of [HP-PJL]. The responses to the INFO command are detailed in INFO Command Responses section. Most standard categories to the INFO command are supported including ID, CONFIG, FILESYS, MEMORY, PAGECOUNT, STATUS, VARIABLES, and USTATUS. USTATUS and PAGECOUNT are not supported on all AccXES controllers.

The AccXES implementation supports many additional categories such as:

JOB_ACCOUNTING -reports job accounting settings

XESQUEUE - reports on the jobs and their status in the AccXES printer job queue.

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XES_SYS_STAT - reports on the status of the printer and provides more detailed information on the processing status of the most mature job in the printer.

XESPALETTES - reports the color pallet settings.

XESFONTS - reports font settings

XESACCOUNTING – reports media usage by account number or for all accounts if accompanied by valid password.

XESRASTERSTAMPS – reports raster stamp information

XESFEATURES – reports the status of software features as enabled or disabled

XESFINISHER – reports information about the attached finisher, if any

XESMEDIA - reports media supported by the printer as well as parameters associated with that media.

3.4.5 USTATUS

USTATUS is generally not supported in AccXES printers. Currently, status information is obtained by clients through requesting the information, rather than reading unsolicited packets such as would be provided by this command. Other printer administration / job control mechanisms such as SNMP will be used in AccXES printers to provided unsolicited status.

The primary reason that USTATUS is not supported is that this mechanism is very crude and does not extend very well to networked environments. In particular, there is no method for addressing clients or broadcasting to some set of clients.

3.4.6 USTATUSOFF

As above, this command is generally not implemented in AccXES printers.

3.5 Device Attendance Commands

3.5.1 RDYMSG

This command is implemented as defined on page 8-2 of [HP96]. Not all AccXES implementations may implement this command.

3.5.2 OPMSG

This command is implemented as defined on page 8-4 of [HP96]. Not all AccXES implementations may implement this command.

3.5.3 STMSG

This command is implemented as defined on page 8-6 of [HP96]. Not all AccXES implementations may implement this command.

3.6 File System Commands

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These commands are not yet supported in the AccXES controller. These commands include FSAPPEND, FSDELETE, FSDIRLIST, FSDOWNLOAD, FSINIT, FSMKDIR, FSQUERY, and FSUPLOAD.

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4 AccXES Custom Commands

4.1 COMMENT Commands

This section overviews theXerox custom commands unique to AccXES. These new commands are defined innocuously to HP-PJL by embedding them in the existing COMMENT function. For example, the syntax for theXESCANCEL command is:

@PJL COMMENT XESCANCEL (USERJOBID=<user job id> | NAME="<JOB name>")

4.1.1 XESACCOUNTING

This command is used for managing copy, scan, and print job accounting. For this command to be valid, the job containing this command must also have a valid password.

4.1.1.1 Pre 6.2 Command Syntax

The syntax for the XESACCOUNTING command is:

@PJL COMMENT XESACCOUNTING ACTION=<action> [ACCTNUM=<account #> SUBACCTNUM=<subaccount #>] [UNITS=<units>] [B=<bond area #> V=<vellum area #> F=<film area #> S=<scan area #>]

ACTION is a mandatory entry. It can be followed with ACCTNUM and SUBACCTNUM, which if valid will restrict the action to an account or a single subaccount. The following table lists the valid assignments to ACTION, as well as the additional entries required to successfully parse the command. For those commands which apply to all accounts (deleteall, resetuser, resetsystem, resetall) an account number MUST NOT be supplied. If an account is supplied the PJL command will be rejected.

Table: XESACCOUNTING Options

ACTION	ACCT NUM	MEDIA(B,V,F or S)	UNITS
CREATE Will not overwrite an existing account	**Required**	Ignored. All media values are set to '0'	Ignored
DELETE	**Required**	Ignored	Ignored
DELETEALL	None	Ignored	Ignored
RESET	**Required**	Ignored. All media values are set to '0'	Ignored
RESETUSER	None	Ignored. All media values are set to '0'	Ignored
RESETSYSTEM	None	Ignored. All media values are set to '0'	Ignored
RESETALL	None	Ignored. All media values are set to '0'	Ignored
RESTORE Will overwrite existing accounts	**Required**	**Optional**. unspecified values set to '0'	**Require d**

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The functional detail of each ACTION is more fully described in the "AccXES Job Accounting Specification".

4.1.1.2 Returned Status (pre 6.2)

After parsing the XESACCOUNTING command, the controller will echo the command, the appropriate status, and a form-feed back on the sending channel as shown below:

@PJL COMMENT XESACCOUNTING ACTION=<action> ACCTNUM=<acctnum> SUBACCTNUM=<subacctnum> UNITS=<units> B=<bond area #> V=<vellum area #> F=<film area #> S=<scan area #>

STATUS=<status>

<FF>

Possible status values are:
STATUS = invalid ACTION

STATUS = No Hard Disk - Accounting Disabled

STATUS = invalid Password

STATUS = invalid ACTION

STATUS = invalid Account/SubAccount Num.

STATUS = invalid UNITS

STATUS = error parsing ACTION

STATUS = error parsing ACCTNUM

STATUS = error parsing SUBACCTNUM

STATUS = error parsing BOND

STATUS = error parsing VELLUM

STATUS = error parsing FILM

STATUS = error parsing SCAN

STATUS = UNITS error, Using default units, DM.

STATUS = error parsing UNITS

STATUS = Account(s) reset

STATUS = RESET error

STATUS = Account(s) deleted

STATUS = CREATE error

STATUS = Account created

STATUS = DELETE error

STATUS = Account(s) deleted

STATUS = RESTORE error

STATUS = Account(s) restored

STATUS = Accounting Disabled

STATUS = UNITS required for restore

STATUS = Max Accts exceeded

STATUS = Max Subaccts exceeded

STATUS = pjlErr in procXesAccounting

STATUS = INFO error

4.1.1.3 Command Syntax (6.2 and Later Release)

4.1.1.3.1 XESACCOUNTING Command

The XESACCOUNTING command was used for copy, scan, and print job accounting. With this release of the software the AccXES Controller no longer provides a stand-alone accounting solution. The legacy job accounting commands will be recognized and responded to, with an appropriate error.

 The syntax for the XESACCOUNTING command is:

@PJL COMMENT XESACCOUNTING ACTION=<action> [ACCTNUM=<account #> SUBACCTNUM=<subaccount #>] [UNITS=<units>] [B=<bond area #> V=<vellum area #> F=<film area #> S=<scan area #>]

Where ACTION values are:

- CREATE

- DELETE

- DELETEALL

- RESET

- RESETUSER

- RESETSYSTEM

- RESETALL

- RESTORE

4.1.1.4 Return Status (6.2 and Later Release)

After parsing the XESACCOUNTING command, the controller will echo the command, the appropriate status, and a form-feed back on the channel as shown below:

@PJL COMMENT XESACCOUNTING ACTION=<action> [ACCTNUM=<account #> SUBACCTNUM=<subaccount #>] [UNITS=<units>] [B=<bond area #> V=<vellum area #> F=<film area #> S=<scan area #>]

STATUS=<status>

<FF>

Possible status values are:

STATUS = invalid ACTION

4.1.2 XESCANCEL

This command cancels a job specified with either the user job id or job name. A user job id is an integer number assigned by the AccXES printer to the job when it is created in the printer. It is guaranteed to be unique in the printing system for as long as the job exists in the printer.

The syntax for the command is:

@PJL COMMENT XESCANCEL (USERJOBID=<user job id> | NAME="<JOB name>")

If the job has completed processing within the printer, then this command will be safely ignored. Otherwise, the printer attempts to cancel the job as quickly as possible, while not affecting the processing of other jobs in the system. There is no response returned from the printer to the host in this command.

4.1.3 XESJOBSET

This command changes the value of the job or page processing parameter specified. No other parameter groups are changeable with this command. In general, only jobs currently stored in the AccXES printer job spool queue may be affected. If the job has already begun its processing within the printer, then this command is safely ignored. The one exception to this is that you can change the job queue scheduling priority even after the job has been processed and is awaiting printing.

This command is used mainly for changing job queue scheduling priority, although all other job and page processing parameters are changeable as well. The job is specified with either the user job id or the job name. There is no response returned from the printer to the host in this command.

The syntax of the XESJOBSET command is:

@PJL COMMENT XESJOBSET (USERJOBID=<user job id> | NAME="<JOB name>") <Variable Name>=<New Variable Value>

4.1.4 XESOBJECTDELETE

This command deletes a printer object. The syntax of the XESOBJECTDELETE command is:

@PJL COMMENT XESOBJECTDELETE TYPE = <PrinterObjectType> NAME = "<PrinterObjectName>"

The possible types of printer objects specified in the TYPE field are:

- XESFONTS

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- XESPALETTES

- XESPATTERNS

- XESRASTERSTAMPS

The printer object name specified in the NAME field is a string name of the printer object to delete. This string must be less than 48 characters in length. For a successful deletion, the object must be present in the file system, it must be deletable, and its type must match that of the specified object type. Also, there must be a valid printer password in the associated job command or the printer must have its password disabled. A list of printer object names which are available, including their sizes and permissions, can be obtained through the @PJL INFO command with the corresponding type specified.

There is no response for this command.

4.1.5 XESOBJECTDOWNLOAD

This command should be inserted in a job that is encapsulated with an JOB/EOJ pair to specify that the associated job is actually a printer object which is being downloaded to the printer with the specified type and name. The syntax of this command is:

@PJL COMMENT XESOBJECTDOWNLOAD TYPE = <PrinterObjectType> NAME = "<PrinterObjectName>" MODE = <DownloadMode>

There should be only one object of one type downloaded in a single job. This object will be stored in nonvolatile memory in a device dependent manner in the printer. The type of object is specified with the TYPE field. The possible types of printer objects are:

- XESFONTS

- XESPALETTES

- XESPATTERNS

- XESRASTERSTAMPS

The PrinterObjectName string should specify the object name using the NAME field and be of the previously specified object type. Object names are case sensitive. This string should be less than 48 characters and may be composed of any combination of upper case letters (ASCII 65 – 90), lower case letters (ASCII 97 – 122) and digits (ASCII 48 – 57).

There are two classes of object type collections – those whose number can increase with download operations and those that function as a fixed set of numbered "bins." With object types in this category, the printer has a fixed number of bins which can be modified (if that bin has read/write permission). The download operation must specify the name of one of these bins and the download will modify the contents of that bin.   XESPATTERNS and XESPALETTES are examples of this type.

In the other category, the number of objects for a given type can change depending on the number of objects downloaded. A download of an object with the same name and type as another previously downloaded object will overwrite the previously downloaded object without notice or error if the previous object is not read-only. XESFONTS and XESRASTERSTAMPS are objects of this type.

The MODE field specifies whether the printer object downloaded should be associated with the current job only (i.e. Current User Job Environment) or downloaded into non-volatile memory within the printer (i.e. User Default). The two possible values are:

- SET

- DEFAULT

SET is used to associate the object with the currently defined job. Any job data to which this object applies must follow the actual object download; preceding print files in the job will not have access to the object. DEFAULT is used to download the object into printer memory where it will persist over power cycles until the object is deleted. It is typically referenced by other jobs by the name in the NAME field. Objects downloaded with the DEFAULT mode will be read-write; therefore they can be deleted (or modified) with a subsequent download of the same name and type or an XESOBJECTDELETE command.

Currently, XESRASTERSTAMPS, XESPATTERNS, and XESFONTS do not support the SET option.

An ENTER LANGUAGE command should be used as well in the job to specify the correct interpreter for processing the printer object. XESRASTERSTAMPS objects can be described by any of the supported data formats of the destination printer, and therefore, any data format interpreter matching the objects description is possible. Specifying AUTO for the language is possible as well. In contrast, XESPALETTES, XESPATTERNS, and XESFONTS must specify the DOWNLOAD interpreter. See the @PJL ENTER command description.

The format for each of the object types is described in Printer Object Download/Upload Format section below. This format is the same format used in the XESOBJECTUPLOAD command to upload printer objects.

The format of a full printer object is therefore:

@PJL COMMENT XESOBJECTDOWNLOAD TYPE = <PrinterObjectType> NAME = "<PrinterObjectName>" MODE = <DownloadMode>

@PJL ENTER LANGUAGE = <languageName>

<Object data><UEL>

If this is sent down to the printer as a single isolated object, then this command sequence is typically wrapped with a JOB/EOJ pair. There is no response for this command.

4.1.6 XESOBJECTUPLOAD

This command uploads a printer object. The syntax of the XESOBJECTUPLOAD command is:

@PJL COMMENT XESOBJECTUPLOAD TYPE = <PrinterObjectType> NAME = "<PrinterObjectName>"

The possible types of printer objects specified in the TYPE field are:

4.1.6.1

- XESPALETTES

- XESPATTERNS

4.1.6.2

4.1.6.3

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The "PrinterObjectName" is a string name (specified in the NAME field) of the printer object to upload. This string must be less than 48 characters in length. For a successful upload, the object must be present in the file system and its type must match that of the specified object type. A list of printer object names which are available, including their sizes and permissions, can be obtained through the @PJL INFO command with the corresponding type specified.

The response for this command is dependent on the type of object requested. These responses are always the native representation of the object representation. Note that this representation is always exactly the same format used to download the object. In all cases, the response will take the form:

@PJL COMMENT XESOBJECTUPLOAD TYPE = <PrinterObjectType> NAME = "<PrinterObjectName>"

<Object data><FF>

The first line is simply the command the host sent repeated. After a carriage return/line feed combination, object specific data is presented. This is immediately terminated with a form feed. Note that if the requested object type is not one currently supported for upload, then there will be NO object data returned and only the command will be echoed back.

4.1.7 XESTESTPAGE

This command causes the printer to schedule the internal test page for processing and printing. This "internally" generated job will have a very high scheduling priority allowing it to print very soon in the print queue. The test page will print printer configuration information and current parameter settings. There is no response to this command from the printer to the host. The syntax of the command is:

@PJL COMMENT XESTESTPAGE

4.1.8 XESPENPALETTE (Obsolete)

This command changes the printer's pen palette for a given pen. The three attributes that may be set for a pen are the pen's width, RGB color, and assigned pattern number. The first parameter in this command specifies the name of the palette to be changed within the printer. This is a string parameter. The second specifies the (integer) pen number to be modified. The third parameter specifies the width of the pen in a floating point number with dimensions of mm. The fourth parameter specifies the pen color with three color components ranging in value from 0 to 255 which determine the Red, Green, and Blue values of the color, respectively. The formula for the color is:

$$<color> = (<red> * (2^{16})) + (<green> * (2^{8})) + <blue>$$

The last parameter specifies the index of the printer resident pattern assigned to the pen in the form of an integer.

@PJL COMMENT XESPENPALETTE PALETTE="<Palette Name>" PENNUMBER=<Pen#> PENWIDTH=<Pen width in mm> PENCOLOR=<color> PENPATTERN=<Pattern#>

4.1.9 XESCFG

The name of the machine can be set by the SA to uniquely identify the AccXES Controller. It is the responsibility of the SA to ensure that this name is unique and not duplicated. This name will be used in the Job Record as attribute jba-device-name to indicate which machine processed each job. The maximum length for the machine name is specified as 20 characters. The syntax of the command is:

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@PJL COMMENT XESCFG MACHINE_NAME=UniqueName

This command is password protected, and must be accompanied with a valid System password or it will be silently ignored. By default the AccXES Controller will create a machine name as an ASCII string created from the 48 bit MAC number required for the network connection.

This number is guaranteed to be unique by the register authority of the IEEE. The name will have the following format:

NN-NN-NN-NN-NN-NN

Where NN is a two character Hexadecimal representation of a number from 00 to FF.

The password protection mechanism of the WebPMT can be reset by the SA. The reset is necessary to restore access to the controller if an invalid IP address is added unintentionally or maliciously. The syntax of the command is:

@PJL COMMENT XESCFG RESET_WEBPMT_ACCESS

The command is password protected and must be accompanied with a valid System password or it will be silently ignored.

After the RESET_WEBPMT_ACCESS command is successfully processed, the IP checking and password checking functions of the WindWeb server are returned to their uninitialized state.

4.1.10 XESMEDIASET

This command is used to set page parameters that are media dependent. The lifetime of the settings changed by this command is only for the current page being processed.

The syntax of the command is:
@PJL COMMENT XESMEDIASET NAME=<media name>
      MISMATCHMODE=<media mismatch mode>
      GAMMACYAN=<cyan gamma value>
      GAMMAMAGENTA=<magenta gamma value>
      GAMMAYELLOW=<yellow gamma value>
      GAMMABLACK=<black gamma value>
      INKLIMITCYAN=<cyan ink limit value>
      INKLIMITMAGENTA=<magenta ink limit value>
      INKLIMITYELLOW=<yellow ink limit value>
      INKLIMITBLACK=<black ink limit value>
<FF>

Where the following are defined:

<media name> field is a character string of at most 32 characters. The strings that are valid to be placed in that field may be obtained using the @PJL INFO XESMEDIA command. The user may also enter "ALL" as the media name in order to specify the mismatch behavior to be applied to all media types. Fields specifying ink limit and gamma settings may be included when the <media name> field is specified as "ALL", but they are ignored during the PJL processing. This is a required field.

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<media mismatch mode> is one of the following enumerated values: {BLOCK, SUBSTITUTE, SCALE}. Note that this new command supercedes the old MM_MODE_<media> commands beginning with AccXES V7.5. This is an optional field.

<*color* gamma value> is a float from 0.5 to 2.0 that defines the gamma value for the color curve that is used during the printing process. This is an optional field.

<*color* ink limit value> is an integer from 0% to 100% that defines the ink limit for the color curve that is used during the printing process. This is an optional field.

4.1.11 XESMEDIADEF

Similar to XESMEDIASET, this command is used to set job and/or page parameters that are media dependent. However, this command is used to change the printer <u>default</u> values rather than only the current job's values.

Similar to XESMEDIASET, the syntax of the command is:
@PJL COMMENT XESMEDIADEF NAME=<media name>
      MISMATCHMODE=<media mismatch mode>
      GAMMACYAN=<cyan gamma value>
      GAMMAMAGENTA=<magenta gamma value>
      GAMMAYELLOW=<yellow gamma value>
      GAMM BLACK=<black gamma value>
      INKLIMITCYAN=<cyan ink limit value>
      INKLIMITMAGENTA=<magenta ink limit value>
      INKLIMITYELLOW=<yellow ink limit value>
      INKLIMITBLACK=<black ink limit value>
<FF>

The arguments are the same as for the XESMEDIASET command.

4.1.12 XESMEDIADICTIONARY

This command will report the contents of the AccXES media dictionary including the fold program and titleblock locations for the defined sizes.

Unsupported media sizes will not be displayed via this PJL instruction.

After parsing the XESMEDIADICTIONARY command, the controller will echo the command, the appropriate status, and a form-feed back on the sending channel as shown below:

@PJL COMMENT XESMEDIADICTIONARY
<media size><status> WID: <width> HT: <height>
      Prg: <fold program> <foldable flag> <foldeable range1> : <titleblock locations> <alternat titleblock>

where:
media size: corresponds to one of the possible specifications for PAPER.
Status: Enabled/Disabled - Disabled means no printer.
Width: Pixel count of nubmer fo scan lines AccXES sends.
Height: Number of pixels in the height of a particular sheet size.
Fold Program: Program number of fold
Foldable flag: T for TRUE - foldable; F for FALSE - not foldable
Foldable Range:mm range ("841-3300" representing min and max number of mm for a given fold.

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Titleblock location: Bitmap of allowed titleblock locations

> 0x01 - Don't care
> 0x02 - corner 1
> 0x04 - corner 2
> 0x08 - corner 3
> 0x10 - corner 4

Alternate titleblock: Same as titleblock location.

4.2 DOWNLOAD Language

This section details custom commands implemented using the PJL ENTER LANGUAGE=DOWNLOAD command. Each subsection details an item that is downloaded to the AccXES controller.

4.2.2 IOT Firmware

The IOT Firmware updates may include executable firmware or language firmware.

4.2.2.1 IOT Executable Firmware

Each IOT executable firmware update has the following format:

zzzzzzFINESS-IOT<cr>

<PRODUCT=*product*><BYTES=*bytes*><CHECKSUM=*checksum*><VERSION=*version*><cr>

{IOT Firmware Data}<cr>

The angle bracket characters are required except in the sequence <cr> which indicates a carriage return character (0x0d). The curly brace characters are not permitted.

Each of the italicized strings in the format specification is replaced with a value that describes the IOT firmware data. The values are:

Specification	Values
product	8830
bytes	Number of bytes in IOT Firmware Data field
checksum	32-bit checksum of IOT Firmware Data preceded with "0x"
version	User-definable identifier up to 20 characters in length

Table: IOT Firmware Download Fields

4.2.2.2 IOT Language Firmware

IOT Language information may be uploaded to IOT devices that support updates. This applies to 8825, 8830, 8850, and 510DP IOTs. It does not apply to 8855, 721P, 6030, 6050 or X2-TECH.

Each IOT language firmware update has the following format:

zzzzzzFINESS-IOTLANG<cr>

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<PRODUCT=*product*><LANG=*lang*><LOCATION=*location*><BYTES=*bytes*><CHECKSUM=*checksum*
><VERSION=*version*><cr>

{IOT Language Data}<cr>

The angle bracket characters are required except in the sequence <cr> which indicates a carriage return character (0x0d). The curly brace characters are not permitted.

Each of the italicized strings in the format specification is replaced with a value that describes the IOT firmware data. The values are:

Specification	Values
product	8830
Lang	Single byte value ranging from 0-254 to specify the language being loaded.
Location	default, primary, or secondary. Default indicates that both primary and secondary languages are to be replaced.
bytes	Number of bytes in IOT Firmware Data field
checksum	32-bit checksum of IOT Firmware Data preceded with "0x"
version	User-definable identifier up to 20 characters in length

Table: IOT Language Firmware Download Fields

The contents of the LANG specification are detailed in the following table. The column labeled AccXES language indicates the language actually selected when a given language is specified for update. This field changes as additional languages are supported.

lang	IOT Language Name	AccXES Language
0	US English	US ENGLISH
1	EO English	UK ENGLISH
2	AO Portuguese	SAMER PORTUGUESE
3	AO Spanish	SAMER SPANISH
4	EEO Bulgarian	{ default to ENGLISH }
5	EEO Czech	CZECH
6	EO Danish	{ default to ENGLISH }
7	EO Dutch	DUTCH
8	EO Finnish	{ default to ENGLISH }
9	EO French	FRENCH
10	EO German	GERMAN
11	EEO Hungarian	{ default to ENGLISH }
12	EO Italian	ITALIAN
13	EO Norwegian	{ default to ENGLISH }
14	EEO Polish	{ default to ENGLISH }

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15	EO Portuguese	EURO PORTUGUESE
16	EO Romanian	{ default to ENGLISH }
17	EEO Russian	RUSSIAN
18	EO Swedish	SWEDISH
19	EO Spanish	EURO SPANISH
20	Canadian French	FRENCH
21	FX Japanese	{ default to ENGLISH }
22	EEO Turkish	TURKISH
23-25	Not defined	{ default to ENGLISH }

Table: IOT Language Specifications

4.2.3 Scanner Firmware

Each scanner firmware update has the following format:

zzzzzzFINESS-Scanner<cr>

<PRODUCT=*product*><BYTES=*bytes*><CHECKSUM=*checksum*><VERSION=*version*><cr>

{Scanner Firmware Data}<cr>

The angle bracket characters are required except in the sequence <cr> which indicates a carriage return character (0x0d). The curly brace characters are not permitted.

Each of the italicized strings in the format specification is replaced with a value that describes the Scanner firmware data. The values are:

Specification	Values
Product	7346, 7356, or Synergix
Bytes	Number of bytes in Scanner Firmware Data field
Checksum	32-bit checksum of Scanner Firmware Data preceded with "0x"
Version	User-definable identifier up to 20 characters in length

Table: Scanner Firmware Download Fields

4.2.4 AccXES Controller Firmware

Each AccXES controller firmware update has one of the following formats:

4.2.4.1 FLASH Boot - controllers prior to HFT

zzzzzzFINESS-Controller<cr>

<PRODUCT=*product*><HWREV=*hwrev*><PS=*ps*><TYPE=*type*><SLOT=*slot*><METHOD=*method*><ADDR=*addr*><BYTES=*bytes*><CHECKSUM=*checksum*><VERSION=*version*><cr>

{Data}<cr>

AccXES PJL Interface

The angle bracket characters are required except in the sequence <cr> which indicates a carriage return character (0x0d). The curly brace characters are not permitted.

Each of the italicized strings in the format specification is replaced with a value that describes the AccXES firmware data. The values are:

Specification	Values
product	8830 or 8855
hwrev	1, 2, or 3 to indicate the revision of the AccXES controller card
ps	Yes, no, or override. If yes, only existing postscript firmware will be overwritten. If no, only existing non-postscript firmware will be overwritten. If override, any existing firmware can be overwritten.
type	Boot or appl to indicate boot ROM code or application space code.
slot	Indicates the parameters for the flash file system. See the next Table.
method	Merge or replace to indicate method of updating AccXES PSM values.
addr	Destination address of the firmware with preceding "0x". Valid with METHOD=replace.
bytes	Number of bytes in AccXES Firmware Data field
checksum	32-bit checksum of AccXES Firmware Data preceded with "0x"
version	User-definable identifier up to 20 characters in length

Table: AccXES Firmware Download Fields

The values of the SLOT specification are detailed in the following table:

TYPE	SLOT	DESCRIPTION
BOOT	0	Revision 1 controller, 512 KB boot flash device
	1	Revision 2 controller, 1 MB boot flash device
APPL	0	Revision 1 controller, 4 MB system flash device
	1	Revision 2 controller, 4 MB system flash device
	2	Revision 1 controller, 8 MB system flash device
	3	Revision 2 controller, 8 MB system flash device
	4	Revision 3 controller, 7 MB system flash device

Table: AccXES Firmware Dnld Slot Decode

4.2.4.2 Disk Boot - controllers prior to HFT

zzzzzzFINESS-Appldisk<cr>

<PRODUCT=*product*><HWREV=*hwrev*><PS=*ps*><TYPE=*type*><METHOD=*method*>><BYTES=*bytes*>
<VERSION=*version*><FSECTOR=*fsector*><FDEVW=*fdevw*><FBUSW=*fbusw*><FRES=*fres*><CHECKS
UM=*checksum*><cr>

{Data}<cr>

The angle bracket characters are required except in the sequence <cr> which indicates a carriage return character (0x0d). The curly brace characters are not permitted.

Each of the italicized strings in the format specification is replaced with a value that describes the AccXES firmware data. The values are:

Specification	Values
Product	8825, 8830, 8850, 510DP, 8855, X2 TECH 721P, 6030, 6050
hwrev	1, 2, or 3 to indicate the revision of the AccXES controller card
ps	Yes, no, or override. If yes, only existing postscript firmware will be overwritten. If no, only existing non-postscript firmware will be overwritten. If override, any existing firmware can be overwritten.
type	Boot or appl to indicate boot ROM code or application space code.
method	Merge or replace to indicate method of updating AccXES PSM values. (combine or replace)
bytes	Number of bytes in AccXES Firmware Data field
checksum	32-bit checksum of AccXES Firmware Data preceded with "0x"
version	User-definable identifier up to 20 characters in length
fsector	
fdevw	
fbusw	
fres	

Table: AccXES Firmware Download Fields

4.2.4.3 HFT Boot code

zzzzzzFINESS-ControllerBSP<cr>
<PRODUCT=*product*><BSP=*bsp*><BYTES=*bytes*><TYPE=*type*><CHECKSUM=*checksum*><cr>
{Data}<cr>

The angle bracket characters are required except in the sequence <cr> which indicates a carriage return character (0x0d). The curly brace characters are not permitted.

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Each of the italicized strings in the format specification is replaced with a value that describes the AccXES firmware data. The values are:

Specification	Values
product	8830, 8850, 8855, X2-TECH, 721P, 6050
bsp	Indicates the board support package - currently only one supported (rtt)
type	boot (always)
bytes	Number of bytes in AccXES Firmware Data field
checksum	32-bit checksum of AccXES Firmware Data preceded with "0x"

Table: AccXES Firmware Download Fields

4.2.4.4 HFT Application code

zzzzzzFINESS-AppldiskBSP<cr>
<PRODUCT=*product*><BSP=*bsp*><BYTES=*bytes*><TYPE=*type*><CHECKSUM=*checksum*><cr>
{Data}<cr>
The angle bracket characters are required except in the sequence <cr> which indicates a carriage return character (0x0d). The curly brace characters are not permitted.

Each of the italicized strings in the format specification is replaced with a value that describes the AccXES firmware data. The values are:

Specification	Values
product	8830, 8850, 8855, X2-TECH, 721P, 6050
bsp	Indicates the board support package - currently only one supported (rtt)
type	appl (always)
bytes	Number of bytes in AccXES Firmware Data field
checksum	32-bit checksum of AccXES Firmware Data preceded with "0x"

Table: AccXES Firmware Download Fields

4.2.5 Software Feature Keys

Each AccXES software feature key update has the following format:

zzzzzzFINESS-Feature<cr>

<FEATURE=*feature*><BYTES=*bytes*><VERSION=*version*><cr>

{Encrypted Feature Key Data}<cr>

The angle bracket characters are required except in the sequence <cr> which indicates a carriage return character (0x0d). The curly brace characters are not permitted.

Each of the italicized strings in the format specification is replaced with a value that describes the AccXES firmware data. The values are:

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Specification	Values
Feature	ON or OFF
Bytes	Number of bytes in Encrypted Feature Key Data field.
Version	1

4.2.6 Peripheral Feature Keys

Peripheral feature keys are decrypted and processed by devices external to the AccXES controller processor domain. Each AccXES peripheral feature key update has the following format:

zzzzzzFINESS-PeripheralFeature<cr>

<PID=*peripheralId*><FEATURE=*feature*><BYTES=*bytes*><VERSION=*version*><cr>

{Encrypted Feature Key Data}<cr>

The angle bracket characters are required except in the sequence <cr> which indicates a carriage return character (0x0d). The curly brace characters are not permitted.

Each of the italicized strings in the format specification is replaced with a value that describes the AccXES firmware data. The values are:

Specification	Values
PeripheralId	Synergix
Feature	ON or OFF
Bytes	Number of bytes in Encrypted Feature Key Data field.
Version	1

4.2.7 System Files

The system files download capability can be used to load postscript fonts or generic system files. Each type is addressed in one of the following subsections:

4.2.7.1 Postscript Font

Each postscript font update has the following format:

zzzzzzFINESS-SystemFile<cr>

<FILETYPE=*ftype*><BYTES=*bytes*><CHECKSUM=*checksum*><VERSION=*version*><cr>

{Postscript Font Data}<cr>

The angle bracket characters are required except in the sequence <cr> which indicates a carriage return character (0x0d). The curly brace characters are not permitted.

The values required for each of the component fields are detailed in the following table.

Specification	Values
ftype	psfont
Bytes	Number of bytes in Scanner Firmware Data field

Checksum	32-bit checksum of Scanner Firmware Data preceded with "0x"
Version	User-definable identifier up to 20 characters in length

Table: Postscript Font File Download Fields

4.2.7.2 Generic System Files (Disabled)

Each generic system file update has the following format:

zzzzzzFINESS-SystemFile<cr>

<FILETYPE=*ftype*><BYTES=*bytes*><OVERWRITE=*overwrite*><PARTITION=*partition*><PATH=*path*>
<CHECKSUM=*checksum*><VERSION=*version*><cr>

{Postscript Font Data}<cr>

The angle bracket characters are required except in the sequence <cr> which indicates a carriage return character (0x0d). The curly brace characters are not permitted.

Processing of generic system file downloads with this format is currently disabled in the AccXES firmware.

The field specifications are a superset of the fields required for the Postscript Font updates. Where the field specifications for the generic file differ from those of the Postscript Font, they are described in the following table:

Specification	Values
Ftype	Generic
overwrite	Yes or no to indicate that an existing file on the controller should be replaced.
partition	Ps
path	Fully-qualified pathname not including the partition.

Table: Generic System File Download Fields

4.2.8 Media Objects

4.2.8.1 Download format

The defined download format is:

UEL@PJL
@PJL ENTER LANGUAGE=DOWNLOAD

zzzzzzFINESS-Media<CR>
<PRODUCT=*product*><BYTES=*bytes*><CHECKSUM=*checksum*><VERSION=*version*><CR>
data<CR>

zzzzzzFINESS-Media<CR>
<PRODUCT=*product*><BYTES=*bytes*><CHECKSUM=*checksum*><VERSION=*version*><CR>
data<CR>

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zzzzzzFINESS-Media<CR>
<PRODUCT=*product*><BYTES=*bytes*><CHECKSUM=*checksum*><VERSION=*version*><CR>
data<CR>

... repeat for as many media objects as necessary ...

UEL@PJL
@PJL EOJ
UEL

Each of the italicized strings in the format specification is replaced with a value that describes the AccXES firmware data. The values are:

Specification	Values
product	NILE, 8830, 8855, 8850, 721P, or 88XX, 6050
bytes	the total number of bytes in the *data* section.
checksum	32-bit checksum of *data* (hex format preceded with "0x" - ex. 0x2BF4D3C8)
version	an integer representing the download media version that defines what media fields are mandatory in the download job. The current value for this is 1.
data	Command, data, and other information for this media object - refer to sections below.

4.2.8.2 *data* values for each command type

4.2.8.2.1 Adding an object

When adding a new media object, the object <u>must</u> contain all of the information listed below. If an ADD command is received for a media that already exists on the controller, it will be treated as an UPDATE command.

COMMAND=ADD<TAB>NAME="*shortname*"<CR>

TYPE=POM<TAB>FIELD=TRC<TAB>FILE="*filename*"<TAB>SIZE=*value*<CR>
binary_data<CR>
... repeat for as many tone reproduction curves (TRCs) as are needed for the media ...

TYPE=POM<TAB>FIELD=CXF<TAB>FILE="*filename*"<TAB>SIZE=*value*<CR>
binary_data<CR>
... repeat for as many color transforms (CXFs) as are needed for the media (may not have any)...

TYPE=POM<TAB>FIELD=CRD<TAB>FILE="*filename*"<TAB>SIZE=*value*<CR>
binary_data<CR>
... repeat for as many color rendering dictionaries (CRDs) as are needed for the media (may not have any)...

TYPE=DATA<TAB>FIELD=PMTABLE<TAB>SIZE=*value*<CR>
binary_data<CR>
... this is the print mode table. The format will vary from IOT to IOT ...

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TYPE=DATA<TAB>FIELD=IOTTABLE<TAB>SIZE=*value*<CR>
binary_data<CR>
... this is a table of IOT configuration information for the media. The format will vary from IOT to IOT ...

TYPE=STRING<TAB>FIELD=GERMAN<TAB>"*string*"<CR>
... this is the name of the media translated into German (in ISO-Latin-1 character encoding)...

TYPE=STRING<TAB>FIELD=FRENCH<TAB>"*string*"<CR>
... this is the name of the media translated into French (in ISO-Latin-1 character encoding)...

TYPE=STRING<TAB>FIELD=SPANISH<TAB>"*string*"<CR>
... this is the name of the media translated into Spanish (in ISO-Latin-1 character encoding)...

TYPE=STRING<TAB>FIELD=ITALIAN<TAB>"*string*"<CR>
... this is the name of the media translated into Italian (in ISO-Latin-1 character encoding)...

TYPE=STRING<TAB>FIELD=PORT<TAB>"*string*"<CR>
... this is the name of the media translated into Portuguese (in ISO-Latin-1 character encoding)...

TYPE=STRING<TAB>FIELD=ENGLISH<TAB>"*string*"<CR>
... this is the name of the media in English (in ISO-Latin-1 character encoding)...

TYPE=STRING<TAB>FIELD=PS<TAB>"*string*"<CR>
... this is the name of the media that is used for the PostScript language...

TYPE=STRING<TAB>FIELD=LOG<TAB>"*string*"<CR>
... this is the name of the media that is reported when doing Job Accounting...

TYPE=VAR<TAB>FIELD=FOLD<TAB>VARTYPE=BOOL<TAB>*value*<CR>
... this value is TRUE if the media is foldable and FALSE if it is not...

Note: blank lines and lines starting with the '#' character are treated as comments while parsing the file.

4.2.8.2.2 Updating an object

When updating a media object, the command line below must be present, followed by any subset of the TYPE lines given above for the ADD command. All fields do NOT need to be present.

COMMAND=UPDATE<TAB>NAME="*medianame*"<CR>

TYPE= ... etc ...

4.2.8.2.3 Deleting an object

In order to delete a media object, only the following command line needs to be present.

COMMAND=DELETE<TAB>NAME="*medianame*"<CR>

5 Environment Variables

5.1 AccXES Environment Variable Organization

The terms 'parameter,' 'class,' 'group,' and 'environment' are used to group the collection of printer parameters and state variables functionally and by usage. Classes and groups are specific to the AccXES architecture. They are used to categorize the set of AccXES environment variables in two levels. This organization has no counterpart in HP-PJL. In HP-PJL, there is simply a flat set of environment variables without subdivision. Parameter Environments is a concept taken directly from the definition of HP-PJL. The sections below define these terms.

There is a one to one mapping of HP-PJL environment variables to the AccXES printer parameters for almost all types of parameters. In many cases, even AccXES printer state variables such as ESSSTATE have corresponding HP-PJL environment variables. State variables such as this may be queried for their value, but they may not be set. Because of the close relationship between HP-PJL environment variables and AccXES printer parameters, the words 'parameters' and 'environment variables' are used interchangeably.

5.1.1 Parameter Classes

The parameters are divided into classes. Parameters collected in the same class pertain to the same functional area within the printer. For example, the Communication Parameters Class collects all parameters associated with the various host interfaces.

There are four classes in the AccXES architecture:

Communications Class. - The Communications class stores all parameters associated with the host interface ports. Such parameters include serial baud rate, SCSI ID, etc.

Printer Class. - The Printer Class of parameters stores all parameters having to do with the printing system as a whole. The language used by the user interface is an example of a Printer Class parameter.

Processing Class. - Processing Class parameters affect how job or page within a job is processed. An example of this type of parameter might be the paper size required to print the job.

Printer State Class. - The Printer State Class of parameters records the state of the printer and associated printing engine. There are three associated groups: marking engine, media, and ESS. Each of these subsystems is responsible for manipulating the values of these states. To the rest of the system, the variables in the Printer State Class are read-only.

5.1.2 Parameter Groups

Parameters are further sub-divided into logical sets called groups so that consistency checking can be performed. Consistency checking is executed by specifying a function in the printer software architecture capable of checking a proposed set of parameters to insure that the new combination is indeed valid. If the parameter set is confirmed, then the changes are made, otherwise no parameters are affected. A proposed set of parameters can result from user interaction with the printer user interface or HP-PJL host utilities.

For example, the Serial Port Group is a group of parameters within the Communications Parameters Class. There is a consistency function associated with this collection of parameters that will ensure that the set of variables is a legal and consistent set.

5.1.3 Parameter Environments

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The AccXES architecture will maintain four levels of environments in a manner very analogous to the HP-PJL implementation. An environment is the collection of all user selectable parameters in use at a certain time. The Printer State class of variables are not included in this environment classification. They are maintained separately. The four environments supported are discussed below.

5.1.3.1 Factory Defaults

This environment corresponds to the Factory Default environment in standard HP-PJL. It is stored permanently in printer ROM. The settings cannot be modified.

5.1.3.2 Default

This environment corresponds to the User Default environment in HP-PJL. It is stored in a non-volatile manner in printer NVRAM, if such exists. The User Default environment takes on the settings contained in the Factory Default environment when the printer leaves the factory, and when the printer receives a valid INITIALIZE HP-PJL command. The printer's User Default settable variables are modified through the printer front panel interface, or through the HP-PJL DEFAULT command. Some variables are read only, and may never be modified.

Note: If parameters are modified using the HP-PJL DEFAULT command the user should wait a minimum of 30 seconds before powering off the printer to allow time for the printer to update its NVRAM. Failure to wait for this period may result in the loss of the modified parameters after the printer is powered on.

5.1.3.3 Current User Job Environment

This environment corresponds to the PJL Current environment in HP-PJL. It takes a snapshot of the values of the User Default Environment on the reception of a new user job or a HP-PJL reset condition such as an @PJL RESET command or a UEL sequence. Only four groups of parameters are stored in a job: the Printer Group, and the Emulation Group, under the Printer Class, and the Job Processing Group and Page Processing Group under the Processing Class. Other parameter groups are "read-only" in the Current User Job Environment and will take on their corresponding values in the User Default Environment.

The reason for this disparity is straightforward. These parameter groups may be particular to each individual job and have to be manipulated as such. They need a separate environment beyond the User Default Environment. This is especially true since there may be many jobs simultaneously in the system at one time.

On the other hand, the other parameter classes affect the physical printer as a whole, and are not tied to any one job. Further, there are many ports over which commands to change these variables may be received simultaneously. Centralizing these parameter classes into the User Defaults environment simplifies implementation by creating a single, lockable parameter resource, eliminates race conditions, and eliminates the complexity of maintaining multiple data bases holding the same data.

These settings in the Printer, Emulation, Job and Page Processing Groups are modifiable through the PJL SET command. They override the User Default features until the next PJL reset condition. The PJL INQUIRE command will report back to the client host the settings of the variables at the time of the start of the job or the last PJL reset. If the value of a variable (such as INROLL1STAT) is changed by some other agent after the PJL job started, the INQUIRE will not see this change until the next PJL job or the next PJL reset.

5.1.3.4 Modified User Job Environment

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This environment corresponds to the PJL Modified Print Environment in HP-PJL. It is associated with individual jobs that have been created within the printer and have been submitted for scheduling. These settings reflect the feature settings currently in effect at any point after a printer language is entered.

The act of submitting the user job converts the Current User Job Environment for that job into the Modified User Job Environment. If the user job data requests the settings of the current value of a particular setting (such as a control-T embedded in a PostScript job), then this is the environment reported on.

The XESJOBSET command may be used to change Job and Page Processing Group parameters in this environment, as long as the job to which these parameters have been attached has not started processing. In other words, XESJOBSET is effective during the window of time defined by the entry into the job queue and the exit from the job queue.

5.1.3.5 Parameter Environment Summary

The table below summarizes the four environments in AccXES printers and their correspondence with standard HP-PJL environments.

Table: AccXES vs. HP-PJL Parameter Environments

AccXES Environmen	Standard HP-PJL	Description
Factory Default	Factory Default	The ROM copy of the environment variables in effect at the time the printer was first manufactured. Not
User Default	User Default	The NVRAM copy of the environment variables in effect at each printer power up. Can be restored to the Factory Default values using the INITIALIZE command. Changed by DEFAULT command and queried with DINQUIRE.
Current User Job	PJL Current Environment	Reflects the parameters associated with the current user job. These parameters are modified with the SET command and are queried with the INQUIRE command. The start of a PJL job or a PJL reset "snapshots" the values from the User Default environment.
Modified User Job	Modified Print Environment	The Current User Job Environment is converted into the Modified User Job Environment for each job after it has been submitted to the Job Scheduler/Spooler. SET commands may no longer modify these parameters. XESJOBSET may be used for page and job parameter groups while the jobs are in the job queue. Processing tasks downstream of the spooler may modify these parameters as well.

5.1.4 AccXES Environment Variables

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The collection of user settable printer parameters with their corresponding HP-PJL environment variables and their descriptions is shown in the following table.

The Attributes column describes the Read/Write attributes of the variable. Also, if the variable is a standard HP-PJL environment variable, then this fact is indicated with "Std."

The sections below describe in detail the meaning of the various environment variables/parameters.

Table: AccXES Environment Variable Summary

Parameter	HP-PJL Environment Variable	Attributes	Parameter Description
Class: Communications Parameters Group: SCSI Port			
SCSI Target ID	SCSITARGETID	R/W, Integer	Sets the SCSI target ID of the printer. Range: {0 - 7} Default: 5
SCSI Port Enable	SCSIENABLE	R/W, Bool	Enables or disables the SCSI host interface port. Range: {ON, OFF} Default: ON
SCSI Bus Termination Enable	SCSITERMENABLE	R/W, Bool	Enables or disables the SCSI bus termination on the ESS. Range: {ON, OFF} Default: ON
Group: EtherTalk Port			
EtherTalk Port Enable	ETHERTALKENABLE	R/W, Bool	Enables or disables the EtherTalk protocol on the NIC. Range: {ON, OFF} Default: ON
EtherTalk Phase	ETHERTALKPHASE	R/W, Enum	Sets phase 1, or 2 EtherTalk operation. Range: {PHASE1, PHASE2
EtherTalk Type	ETHERTALKTYPE	R/W, String	Sets the type of printer for the EtherTalk protocol. Range: String max 32 chars. Default:
EtherTalk Zone	ETHERTALKZONE	R/W, String	Sets the name of the EtherTalk zone for the printer. Range: String max 32 chars. Default: "*"
Group: TokenTalk Port			
TokenTalk Port Enable	TOKENTALKENABLE	R/W, Bool	Enables or disables the TokenTalk protocol on the NIC. Range: {ON, OFF} Default: OFF
TokenTalk Type	TOKENTALKTYPE	R/W, String	Sets the type of printer for the TokenTalk protocol. String max 32 chars. Default: "LaserWriter"

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TokenTalk Zone	TOKENTALKZONE	R/W, String	Sets the name of the TokenTalk zone for the printer. String max 32 chars. Default: "*"
Group: Ethernet NetBeui Port			
Ethernet NetBeui Port Enable	ETHERBEUIENABLE	R/W, Bool	Enables or disables the NetBeui protocol on the NIC. Range: {ON, OFF} Default: ON
Ethernet NetBeui Group:	ETHERBEUIGROUP	R/W, String	Sets the NetBeui Group for the printer. String max 15 chars. Default: "WORKGROUP"
Ethernet NetBeui Machine Name:	ETHERBEUIMACHINENAME	R/W, String	Sets the NetBeui Machine Name for the printer. String max. 15 chars. Default: (TBD)
Ethernet NetBeui Remark	ETHERBEUIREMARK	R/W, String	Sets the Remark string for the NetBeui protocol. String max. 48 chars. Default: ""
Ethernet NetBeui Service	ETHERBEUISERVICE	R/W, String	Sets the NetBeui Service for the printer. String max. 48 chars. Default: "PARALLEL1"
Group: Ethernet IPX/SPX Port			
Ethernet IPX Context Name	ETHERIPXCONTEXT	R/W, String	Name of the NDS context for logging in. String max. 127 chars. Default: ""
Ethernet IPX Port Enable	ETHERIPXENABLE	R/W, Bool	Enables or disables the IPX protocol on the NIC. Range: {ON, OFF} Default: ON
Ethernet IPX Frame	ETHERIPXFRAME	R/W, Enum	Sets the Novel IPX frame protocol. Range: {802.3, 802.2, SNAP, ETHERNET2, AUTO}
Ethernet IPX NDS Enable	ETHERIPXNDSENABLE	R/W, Bool	Enables or disables the IPX NDS protocol on the NIC. Range: {ON, OFF} Default: OFF
Ethernet IPX NDS Tree	ETHERIPXNDSTREE	R/W, String	Name of the NDS Tree into which the NIC logs. String max. 64 chars. Default: ""
Ethernet IPX Primary Server	ETHERIPXPRIMARYSERVER	R/W, String	Sets the name of the preferred server to search for the NIC IPX config file. Range: String max 48 characters. Default: ""

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Ethernet IPX Queue Scan Rate	ETHERIPXQSCANRATE	R/W, Integer	Controls how often Netware file servers are queried for server jobs, in units of seconds. Range: {1-255}. Default: 1
Ethernet IPX Server Name	ETHERIPXSERVERNAME	R/W, String	Sets the name that will be placed in the Netware SAP packets for identification of the printer in the RUI. String max. 47 chars. Default: ""
Ethernet Status	ETHERSTAT	R, Enum	Indicates the status of the Advanced Ethernet port. When set to DISABLED, the port is disabled. When set to QUERYIPADDR, the port is querying for an IP address (using RARP, BOOTP, or DHCP). When set to READY, the port is ready to accept network connections. When set to SHUTDOWNPENDING, the port is waiting for network connections to close before shutting down the port. Range: {DISABLED, QUERYIPADDR, READY,
Group: Ethernet TCPIP Port			
Ethernet TCP/IP DHCP Enable	ETHERTCPDHCPENABLE	R/W, Bool	Enables the Dynamic Host Configuration Protocol for setting the IP address. Range: {ON, OFF} Default: ON
Ethernet TCP/IP Address	ETHERTCPIPADDR	R/W, String	Sets the IP address of the printer on the network. Range: String of the form nnn.nnn.nnn.nnn. Default: "13.240.20.38"

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Ethernet TCP/IP Port Enable	ETHERTCPIPENABLE	R/W, Enum	Enables or disables the Ethernet TCP/IP protocol on either the Digi MiLAN 3003 XTP NIC or the native AccXES Ethernet controller. When set to PRINTER, the Digi MiLAN 3003XTP card will implement the TCP/IP protocol and related services. When set to ADVANCED, the native AccXES TCP/IP implementation will be enabled. OFF disables all TCP/IP services. Range: {OFF, PRINTER_ONLY,
Ethernet TCP/IP Gateway	ETHERTCPIPGATEWAY	R/W, String	All SNMP traps sent to non-local hosts to be sent through this gateway. IPDefaultNetmask is used to determine if a host is local. The format for this variable follows the standard IP address description. Range: String of the form nnn.nnn.nnn.nnn. Default:
Ethernet TCP/IP Netmask	ETHERTCPIPNETMASK	R/W, String	Setting this value to an IP address causes the mask to be used in determining whether or not a host's address is local to the NIC's network segment. If not, then the default gateway is used. The mask is "anded" with the address to determine the network. The format of the address follows the standard IP address description. Range: String of the form nnn.nnn.nnn.nnn. Default: "255.255.252.0"
Ethernet TCP/IP RARP/BOOTP Enable	ETHERTCPRARPENABLE	R/W, Bool	Enables dynamic IP address assignment with the RARP and/or BOOTP protocols. Range {ON, OFF} Default: OFF
Group: TokenRing TCPIP Port			
Token Ring TCP/IP Address	TOKENTCPIPADDR	R/W, String	Sets the IP address of the printer on the network. Range: String of the form nnn.nnn.nnn.nnn. Default: "13.240.20.38"

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TokenRing TCP/IP Port Enable	TOKENTCPIPENABLE	R/W, Bool	Enables or disables the TokenRing TCP/IP protocol on the NIC. Range: {ON, OFF} Default: ON
Group: Serial Port			
Serial Baud Rate	SERIALBAUD	R/W, Integer	Sets the baud rate of the serial port. Range: {300, 600, 1200, 2400, 4800, 9600, 19200} Default: 9600
Serial Port Enable	SERIALENABLE	R/W, Bool	Enables or disables the Serial port. Range: {ON, OFF} Default: ON
Serial Flow Control	SERIALFLOWCTL	R/W, Enum	Sets hardware, XON/XOFF, or no flow control over the serial port. Range: {XON_XOFF, RTS_CTS, OTH, NONE} Default: NONE
Serial Parity	SERIALPARITY	R/W, Enum	Sets the parity for the port. Range: {EVEN, ODD, NONE} Default: NONE.
Group: Parallel Port			
Parallel Port Enable	PARALLELENABLE	R/W, Bool	Enables or disables the Parallel port. Range: {ON, OFF} Default: ON
Group: VPI Port			
VPI Port Enable	VPIENABLE	R/W, Bool	Enables or disables the VPI port. Range: {ON, OFF} Default: ON
VPI Port Timeout Enable	VPITIMEOUTENABLE	R/W, Bool	Enables the time out mechanism (specified with the TIMEOUT variable) on the VPI port if set to ON. There is no timeout period otherwise. Range: {ON, OFF} Default: OFF
Class: Printer Parameters **Group: Printer**			
Active Parameter Set	ACTIVEPARAMSET	R/W, Integer	Sets the currently active parameter set for the printer. There are 10 sets denoted by the integers 0 through 9. Range: {0-9} Default: 0
AppleTalk Printer Name	APPLETALKNAME	R/W, String	Sets the printer name for the EtherTalk, TokenTalk, and LocalTalk protocols. Range: String max 32 chars. The default value is: "XES PRINTER".

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Toner Density	DENSITY	R/W, Std., Integer	Indicates the toner density setting. Range: {0 - 10} Default: 5
Language	LANG	R/W, Std., Enum	Sets the language of the printer on its interface and backchannel messages. Range: {ENGLISH, UKENGLISH, FRENCH, ITALIAN, GERMAN, EURO_SPANISH, SAMER_SPANISH, SAMER_ PORTUGESE, DUTCH, RUSSIAN, SWEDISH, TURKISH, CZECH, UNKNOWN} Default: ENGLISH. Note EURO_PORTUGESE was obsoleted.
Pen Palette Override	PALETTEOVERRIDE	R/W, Bool	When enabled, a print job will override the settings of the pen palette stored in the printer's memory. Affected attributes include pen width, color, and pattern. Range: {ON, OFF} Default: ON
WebPMT Main Page Refresh timeout	PMTREFRESH	R/W, Std., Integer	Indicates the timeout value to refresh the WebPMT main page. Range: {5-3600} Default: 10
Printer Accounting Mode	PRTACCTMODE	R/W, Enum	Sets the accounting mode for the printer. Range: {ENABLED, DISABLED, OPTIONAL} Default: DISABLED.
6.2 and Later Release Printer Accounting Mode	PRTACCTMODE	R/W, Enum	Sets the accounting mode for the printer. Range: {ENABLED, DISABLED, OPTIONAL} Default: DISABLED. .
Printer Password	PASSWORD	R/W, Std., Integer	The current HP-PJL password for the printer. Range: {0 - 65535} Default:
Timeout	TIMEOUT	R/W, Std., Integer	The time-out period on the host communications ports in seconds. Range: {5 - 300} Default: 5
Mismatch Queuing	MM_QUEUING	R/W, Bool	Set to true when mismatch queuing is enabled. Range: {ON, OFF} Default: OFF

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Date Format	DATEFORMAT	R/W, Enum	Sets the Date Format for date usage. Range: {IMPERIAL, INTERNATIONAL} Default: IMPERIAL
Group: Emulation			
CalComp Check Sum enable	CCCHECKSUM	R/W, Bool	Enables CalComp check sum operation. Range: {ON , OFF} Default: ON
CalComp EOM character	CCEOM	R/W, Integer	The CalComp EOM character. Range: {0 - 31} Default: 0x0D (=13 decimal)
CalComp # of SYNC character	CCNUMSYNC	R/W, Integer	The number of CalComp SYNC characters expected each packet. Range: {1, 2} Default: 2
CalComp palette name	CCPALETTE	R/W, String	CalComp default palette. Range: String max 32 characters. Default: "0"
CalComp palette source	CCPALETTESOURCE	R/W, Enum	Sets the source of control for pens in CalComp files. Can be set to JOB so that after initialization, the palette assigned by CCPALETTE is ignored. Otherwise, set to PRINTER so that the palette named by CCPALETTE determines the pen settings. Range: {JOB, PRINTER} Default: JOB
CalComp Resolution	CCRESOLUTION	R/W, Integer	The CalComp resolution (stepsize). The image will be automatically converted from this resolution to the printer's resolution. Range: {50-4064} Default: 2032.
CalComp SYNC character	CCSYNC	R/W, Integer	The CalComp SYNC character. Range: {0 - 127} Default: 0x16 (=22 decimal)
CalComp Termination on EOP Command	CCTERMEOP	R/W, Enum	Sets the controller to terminate the CalComp file when either 1 or 2 EOP commands are received. The controller can also be set such that the EOP command has no effect on determining the file termination (NONE). Range: { 1, 2, NONE} Default: 2
CalComp Termination on Force Plot command	CCTERMFORCEPLOT	R/W, Bool	Sets the controller to terminate the CalComp file when a force plot command

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			is found if this value is ON. OFF implies that the command has no effect on file termination conditions. Range: {ON, OFF} Default: ON
CalComp Termination on Manual command	CCTERMMANUAL	R/W, Bool	Sets the controller to terminate the CalComp file when a manual command is found if this value is ON. OFF implies that the command has no effect on file termination conditions. Range: {ON, OFF} Default: OFF
CalComp Termination on New Plot command	CCTERMNEWPLOT	R/W, Bool	Sets the controller to terminate the CalComp file when a new plot command is found if this value is ON. OFF implies that the command has no effect on file termination conditions. Range: {ON, OFF} Default: OFF
CalComp Termination on Pause command	CCTERMPAUSE	R/W, Bool	Sets the controller to terminate the CalComp file when a pause command is found if this value is ON. OFF implies that the pause command has no effect on file termination conditions. Range: {ON, OFF} Default: ON
CalComp Termination on Search Address	CCTERMSA	R/W, Enum	The controller can be set to terminate the file when either or both search address codes 999, 9999 are found. Range: { 999, 9999, BOTH, NONE} Default: BOTH.
CalComp Termination on Start Plot command	CCTERMSTARTPLOT	R/W, Bool	Sets the controller to terminate the CalComp file when a Start Plot command is found if this value is ON. OFF implies that the command has no effect on file termination conditions. Range: {ON, OFF} Default: ON

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CalComp Termination on Top of Form command	CCTERMTOF	R/W, Bool	Sets the controller to terminate the CalComp file when a top of form command is found if this value is ON. OFF implies that the command has no effect on file termination conditions. Range: {ON, OFF} Default: ON
CGM Background Color	CGMBKGRNDCOLOR	R/W, Enum	Allows the user to override the job to enforce black markings on white background. Range: {FILECONTROL, FORCEBLACKONWHITE} Default: FILECONTROL
CGM palette name	CGMPALETTE	R/W, String	CGM default palette. Range: String max 32 characters. Default: "0"
CGM palette source	CGMPALETTESOURCE	R/W, Enum	Sets the source of control for pens in CGM files. Can be set to JOB so that after initialization, the palette assigned by CGMPALETTE is ignored. Otherwise, set to PRINTER so that the palette named by CGMPALETTE determines the pen settings. Range: {JOB, PRINTER} Default: JOB
CGM Default Paper Size	CGMDEFAULTPAPER	R/W, Enum	Establishes the default paper size for CGM plots which do not inherently have a size. Value is similar to Paper Size BUT must have 2 dimensions; therefore, it can not be ANY or a ROLL* size.Range: {ANSI_A, ANSI_B, ANSI_C, ANSI_D, ANSI_E, ARCH_A, ARCH_B, ARCH_C, ARCH_D, ARCH_E, ARCH_30,ISO_A0, ISO_A1, ISO_A2, ISO_A3, ISO_A4, ISO_B1, ISO_B2, ISO_B3, ISO_B4, JIS_B1, JIS_B2, JIS_B3, JIS_B4} Default: ANSI_A
POSTSCRIPT Default Paper Size	PSDEFAULTPAPER	R/W, Enum	Establishes the default paper size for POSTSCRIPT plots which do not inherently have a size. Value is similar to Paper Size BUT must have 2 dimensions; therefore, it

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			can not be ANY or a ROLL* size. Range: {ANSI_A, ANSI_B, ANSI_C, ANSI_D, ANSI_E, ARCH_A, ARCH_B, ARCH_C, ARCH_D, ARCH_E, ARCH_30,ISO_A0, ISO_A1, ISO_A2, ISO_A3, ISO_A4, ISO_B1, ISO_B2, ISO_B3, ISO_B4, JIS_B1, JIS_B2, JIS_B3, JIS_B4} Default: ANSI_A
POSTSCRIPT Halftone Method	PSHALFTONE	R/W, Enum	Establishes the default halftone method (method to transform multibit data to binary data) to be used for PostScript plots. Applies to color and monochrome printers) Range: {SCREEN, ERRORDIFFUSION} Default: SCREEN
Encapsulated Postscript (EPS) Support	EPS	R/W, Bool	When ON, the PS interpreter will parse and interpret any Encapsulated Postscript (EPS) commands contained in the file. When OFF, the PS interpreter will ignore the EPS commands. Range: {OFF, ON} Default: OFF
Postscript CIE Color	USECIECOLOR	R/W, Bool	When ON, the PS interpreter will re-map color from device color spaces to device-independent CIE-based color spaces. Range: {OFF, ON} Default:
Postscript PDF Optimize	PDFOPTIMIZE	R/W, Bool	WhenON, the internal PDF-to-PS interpreter will use a binary intermediate file. When OFF, this file will be ASCII. Unless PDF processing problems are encountered, this vbalue should be left "ON". Range {OFF,ON} Default: ON
HP-RTL Resolution	RESOLUTION	R/W Int	Used by the HP-RTL DFI as the default device resolution in determining CAP position and raster scaling. Range: 300-1200,
HP-RTL Native Mode	HPRTLNATIVEMODE	R/W, Bool	Used by the HPRTL interpreter to determine how to interpret commands

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			which set/change the Current Active Position (CAP) - an x and y raster location in job space. If HPRTLNATIVEMODE is "OFF", the interpreter calculates the CAP positions using the value of the RESOLUTION variable - this is the default. If the setting is "ON", it uses 400 dpi (ala 8830).
HPGL Default Merge Control	HPDEFAULTMC	R/W, Bool	Establishes the default HPGL Merge Control setting. Range: {OFF, ON} Default: OFF
HPGL Default Number of Pens	HPDEFAULTNP	R/W, Int	Specifies the default number of Pens for the pen pallete. Can be overriden by NP command, or set in place of specifying NP in file. Range: {1..256}
HPGL Mode	HPGLMODE	R/W, Enum	Selects the HPGL Emulation Mode. Range: { HPGL2, HPGL758X} Default: HPGL2
HPGL palette name	HPGLPALETTE	R/W, String	HPGL default palette. Range: String max 32 characters. Default: "0"
HPGL palette source	HPGLPALETTESOURCE	R/W, Enum	Sets the source of control for pens in HPGL files. Can be set to JOB so that after initialization, the palette assigned by HPGLPALETTE is ignored. Otherwise, set to PRINTER so that the palette named by HPGLPALETTE determines the pen settings. Range: {JOB, PRINTER} Default: JOB
HPGL Ignore PS Command	HPIGNOREPS	R/W, Bool	Tells the controller to ignore the HPGL PS command which defines page size for HPGL/2 files. When set to ON the PS command is ignored. When OFF the PS command is used to determine page size. Range: {ON, OFF} Default: OFF
HPGL Force Round Line Ends	HPROUNDLINEENDS	R/W, Bool	When set to ON all vector lines are drawn with round ends and joints. When set to

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			OFF the HPGL Line Attribute (LA) command is used to draw the line. Range: {ON, OFF} Default: OFF
HPGL Termination on AF command	HPTERMAF	R/W, Bool	Sets the controller to terminate the HPGL page when a AF command is found if this value is ON. OFF implies that the command has no effect on file termination conditions. Range: {ON, OFF} Default: ON
HPGL Termination on AH command	HPTERMAH	R/W, Bool	Sets the controller to terminate the HPGL page when a AH command is found if this value is ON. OFF implies that the command has no effect on file termination conditions. Range: {ON, OFF} Default: ON
HPGL Termination on FR command	HPTERMFR	R/W, Bool	Sets the controller to terminate the HPGL page when a FR command is found if this value is ON. OFF implies that the command has no effect on file termination conditions. Range: {ON, OFF} Default: ON
HPGL Termination on NR command	HPTERMNR	R/W, Bool	Sets the controller to terminate the HPGL page when a NR command is found if this value is ON. OFF implies that the command has no effect on file termination conditions. Range: {ON, OFF} Default: OFF
HPGL Termination on PG command	HPTERMPG	R/W, Bool	Sets the controller to terminate the HPGL page when a PG command is found if this value is ON. OFF implies that the command has no effect on file termination conditions. Range: {ON, OFF} Default: ON

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HPGL Termination on Plotter Off command	HPTERMPLOTOFF	R/W, Bool	Sets the controller to terminate the HPGL page when a plotter off command is received if this value is ON. OFF implies that the command has no effect on file termination conditions. Range: {ON, OFF} Default: ON
HPGL Termination on RP command	HPTERMRP	R/W, Bool	Sets the controller to terminate the HPGL page when a RP command is found if this value is ON. OFF implies that the command has no effect on file termination conditions. Range: {ON, OFF} Default: ON
HPGL Termination on SP command	HPTERMSP	R/W, Bool	Sets the controller to terminate the HPGL page when an SP0 or SP (without arguments) command is found if this value is ON. OFF implies that the command has no effect on file termination conditions. Range: {ON, OFF} Default: OFF
TIFF Single Bit Photometry	TIFF1BITPHOTO	R/W, Enum.	Allows the user to ignore the TIFF tag contained in a job which sets the minimum code value to black in single bit TIFF data. This mechanism can be used to force a white background with black data even if the file specifies inverted coloring. Range: {FILECONTROL, IGNOREMINISBLACK} Default: FILECONTROL
Versatec Character Encoding	VCHARSET	R/W, Enum.	Selects how the Versatec emulation interprets Print Mode data. Range: {ASCII, EBCDIC} Default: ASCII
VDS Character Encoding	VDSCHARSET	R/W, Enum.	Selects how the VDS emulations interpret data. Range: {ASCII, EBCDIC} Default: ASCII
VDS palette name	VDSPALETTE	R/W, String	VDS default palette. Range: String max 32 characters. Default: "0"
VDS palette source	VDSPALETTESOURCE	R/W, Enum	Sets the source of control for pens in VDS files. Can be set to JOB so that after

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			initialization, the palette assigned by VDSPALETTE is ignored. Otherwise, set to PRINTER so that the palette named by VDSPALETTE determines the pen settings. Range: {JOB, PRINTER} Default: JOB
Versatec Raster Device Bytes per Line	VDEVLINEBYTES	R/W, Integer	Sets the number of bytes per line in the Versatec Raw Raster Device Emulation when VRASTEREMUL is set to CUSTOM. Range: {10-3000
Versatec Raster Device Characters per Line	VDEVLINECHARS	R/W, Integer	Sets the number of characters per line in the Versatec Raw Raster Device Emulation when VRASTEREMUL is set to CUSTOM. Range: {10-2000 } Default: 128
Versatec Raster Device Emulation	VRASTEREMUL	R/W, Enum.	Selects the Versatec Raw Raster Device Emulation. Specifies resolution and scan line width. When CUSTOM is selected, the parameters VRESOLUTION, VDEVLINEBYTES, and VDEVLINECHARS are consulted to setup the Versatec Raster Device Emulation. Range: {7222, 7224, 7225, 7236, 7422, 7424, 7425, 7436, 8222, 8224, 8236, 8524, 8524HRA, 8524HR1, 8510, 8536, 8536HR, 8624A, 8624I, 8624HRA, 8624HRI, 8625, 8625HR, 8636, 8636HR, 8770_24, 8770_24I, 8770_36, 8830, 8830SERVEWARE, 8845, CUSTOM} Default: 8830
Versatec Raster Device Resolution			
Class: Processing Parameters Group: Job Processing			
Before 6.2 Release Sub-account Number	SUBACCTNUM	R/W, Integer	Specifies the sub-account number for the job. Range: {0 - 9999} Default: 1

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6.2 and Later Release Account Number	ACCTNUM	R/W, Integer	Maps to AcctID 32 character alphaNum string Default ""
6.2 and Later Release Sub-account Number	SUBACCTNUM	R/W, Integer	Maps to UserID 32 character alphaNum string Default ""
6.2 and Later Release Account Identifier	JBA_ACCT_ID	R/W, String	32 character alphaNum string Default ""
6.2 and Later Release User Identifier	JBA_ USER_ID	R/W, String	32 character alphaNum string Default ""
Enable Banner Pages	BANNERPAGEENABLE	R/W, Bool	Enables the generation of banner pages on each job. Range: {ON, OFF} Default: OFF
Banner Position	BANNERPAGEPOS	R/W, Enum	Specifies whether the banner page is to be printed before or after the job. Range: {BEFORE, AFTER} Default: BEFORE
Electronic Collation	COLLATIONENABLE	R/W, Enum	Set's the collation mode. Note that ON is equivalent to AUTO. Range: {ON, OFF, REVERSE, FORWARD, AUTO}
Number of Copies	COPIES	R/W, Std., Integer	Specifies the number of copies of each page. See also, Electronic Collation. Range: {1 - 999} Default: 1
Diagnostic Page Enable	DIAGPAGEENABLE	R/W, Bool	Enables the generation of additional information useful for diagnostics. A diagnostics page is generated after every page printed. Range: {ON, OFF} Default: OFF
Error Page Generation	ERRORPAGE	R/W, Enum	Enables or disables error page generation. Range: {NONE, LEVEL1, LEVEL2 } Default: LEVEL1
Image Scaling Reduction Mode	IMAGESCALEMODE	R/W, Enum	Sets the mode for scaling down images. Pixel preservation is used for line drawings. Normal scaling (decimation) is used for photo images. Range: {LINE, PHOTO} Default:

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Maximum Plot Length	MAXPLOTLEN	R/W, Float	Sets the maximum plot length that can be printed, in inches. Range: {4*12 to 86*12} Default: 80*12 = 960 inches
Media Mismatch Mode Paper	MM_MODE_PAPER	R/W, Enum.	Set media size mismatch recovery mode. When set to SCALE, the printer uses scaling for paper media type requests. When set to BLOCK, the printer pauses until the correct media is installed. When set to SUBSTITUTE, the printer will make media substitutions as necessary to print the page. Range: {BLOCK, SCALE, SUBSTITUTE} Default: SCALE
Media Mismatch Mode Film	MM_MODE_FILM	R/W, Enum.	Set media size mismatch recovery mode. When set to SCALE, the printer uses scaling for film media type requests. When set to BLOCK, the printer pauses until the correct media is installed. When set to SUBSTITUTE, the printer will make media substitutions as necessary to print the page. Range: {BLOCK, SCALE, SUBSTITUTE} Default: SCALE
Media Mismatch Mode Vellum	MM_MODE_VELLUM	R/W, Enum.	Set media size mismatch recovery mode. When set to SCALE, the printer uses scaling for vellum media type requests. When set to BLOCK, the printer pauses until the correct media is installed. When set to SUBSTITUTE, the printer will make media substitutions as necessary to print the page. Range: {BLOCK, SCALE, SUBSTITUTE} Default: SCALE
Job Owner Name	OWNER	R/W, String	The name of the owner of the job. The value * is the "ownerless" value. Range: String max 48 characters. Default: "*"

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Page Composition Enable	PAGECOMPENABLE	R/W, Bool	When ON, job is a page composition job. In this case, all files contained with a printer job will be composed together onto a single sheet of paper. Range: {ON, OFF} Default:
Page Composition Paper Size	PAGECOMPPAPER	R/W, Enum	This parameter is enabled only with PAGECOMPENABLE set. It specifies the size of the physical paper onto which pages within the page composition job will be placed. Range: { LETTER, LEDGER, ANSI_A, ANSI_B, ANSI_C, ANSI_D, ANSI_E, ARCH_A, ARCH_B, ARCH_C, ARCH_D, ARCH_E, ARCH_30, ISO_A0, ISO_A1, ISO_A2, ISO_A3, ISO_A4, ISO_B1, ISO_B2, ISO_B3, ISO_B4, JIS_B1, JIS_B2, JIS_B3, JIS_B4} Default: ARCH_E
Page Composition Media Source	PAGECOMPMEDIASOURCE	R/W, Enum	This parameter is enabled only with PAGECOMPENABLE set. It specifies the source of the physical paper onto which pages within the page composition job will be placed. Range: {TRAY1, TRAY2, TRAY3, ROLL1, ROLL2, ROLL3, ROLL4, MANUAL_FD, AUTO} Default: AUTO
Prior to V7.5 Release Page Composition Media Type	PAGECOMPMEDIATYPE	R/W, Enum	This parameter is enabled only with PAGECOMPENABLE set. It specifies the type of media used for the physical paper onto which pages within the page composition will be placed. Range: {PAPER, VELLUM, FILM, PHOTOFILM, COATEDBOND, INKJET, TRANSPARANCY, SPECIAL, ANY}
7.5 and Later Release Page Composition Media Name (Supercedes Page Composition Media Type)	PAGECOMPMEDIANAME	R/W, String	This parameter is enabled only with PAGECOMPENABLE set. It specifies the type of media used for the physical

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			paper onto which pages within the page composition will be placed. The valid values for media that may be passed as an argument are obtained using the @PJL INFO XESMEDIA command.
Job Scheduling Priority	PRIORITY	R/W, Integer	Integer value coding the job scheduling priority. Range: {1 - 10}. Default: 5
Plot Nesting Job Exclusive	NESTINGEXCLUSIVE	R/W, Bool	Set true when the plot nest may consist exclusively of plots from a single job (ie. plots from multiple jobs will not be intermixed on a nest output page). Range: {ON, OFF} Default: OFF
Plot Nesting Length	NESTINGLENGTH	R/W, Integer	Indicates the maximum length of a nest in inches. If a plot to be placed in a nest exceeds this length, the nest will be terminated and the plot will be printed separately. Range: {8 – maxPlotLength} Default:
Plot Nesting Mode	NESTINGMODE	R/W, Bool	Set true when incoming plots are eligible to be nested. Range: {ON, OFF} Default: OFF
Plot Nesting Time-out	NESTINGTIMEOUT	R/W, Integer	Indicates the maximum time in seconds between print jobs before the current plot nest is sent to the printer. Range: {5 - 300} Default: 5
Plot Nesting Margin	NESTINGMARGIN	R/W, Integer	Indicates the system imposed margin spacing in millimeters between plots in a nest. Range: {0 – 25} Default: 0
Group: Page Processing			
Contrast	CONTRASTADJ	R/W, Integer	Integer coding the print contrast adjustment value. Range: {-10 - +10}. Default: 0. Print contrast is reduced as the contrast adjustment value becomes more negative, and is increased as the contrast adjustment value becomes more positive.
Document Type	DOCUMENTTYPE	R/W, Enum	Specifies the rendering intent. This will be used internally by AccXES to

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			determine which color transform to apply (if any). Range:{AUTOSELECT, GRAPHICS, PHOTO, LINESANDTEXT} Default: AUTOSELECT
Fineline Grayscale Rendering	FINELINEGRAYSCALER ENDERING	R/W, Enum	Specifies how fine lines will be rendered (if the rendermode is set to grayscale). Range: {CONTONE, BLACK} Default: CONTONE
Fineline Pixel Threshold	FINELINEPIXELTHRES HOLD	R/W, Integer	Specifies the maximum line width that will be processed as a fine line. Range: {1 - 25} Default: 7
Justification, X direction	JUSTIFYX	R/W, Float/Enum	Specifies the left margin of the page on the paper. Can be specified in inches or <center>, <left>, <right>. On roll fed plotters, this variable refers to the paper feed direction. Range: {0 - 100, LEFT, RIGHT, CENTER} Default: LEFT
Justification, Y direction	JUSTIFYY	R/W, Float/Enum	Specifies the top margin of the page on the paper. Can be specified in inches or <center>, <top>, <bottom>. On roll fed plotters, this variable refers to the raster scan direction. Range: {0 - 100, TOP, CENTER, BOTTOM}. Default: BOTTOM
Label Font	LABELFONT	R/W, Str	The name of the font to be used in the label string. Range: String max 32 characters. Default: "HP Stick Set 0"
Label Font Object Name	LABELFONTOBJ	R/W, Str	An alternate method of specifying the label font. It specifies the name of the font object to be used in the label string. Range: String max 64 characters. When this is a non-empty string, it overrides the LABELFONT parameter.

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Label X Location	LABELLOCX	R/W, Float/Enum	The X coordinate of the label on the physical paper. Can be specified in inches or <center>, <left>, <right>. Range: {0 - 1200, LEFT, CENTER, RIGHT, LEADING, TRAILING, EXTEND}. Default: TRAILING
Label Y Location	LABELLOCY	R/W, Float/Enum	The Y coordinate of the label on the physical paper. Can be specified in inches or <center>, <left>, <right>. Range: {0 - 1200, TOP, CENTER, BOTTOM}. If LABELLOCX is EXTEND this must specify the number of inches. Default: BOTTOM
Label Rotation	LABELROTATE	R/W, Int	The rotation of the label string. It may be rotated to any orientation between 0 and 359 degrees. Range: {0-359}. Default: 90
Label Shading Level	LABELSHADING	R/W, Int	Shading level of the label. Specified as a percentage of colorant applied to mark the label. 100% is black, 0% is blank or white. Range: {0 – 100}. Default: 100
Label Size	LABELSIZE	R/W, Integer	The size of the characters in the label in points. Range: {6 - 72} Default: 18
Label String	LABELSTRING	R/W, String	The ASCII label string place on plots. Empty string if no label used. Range: String max 4096 characters. Default: ""
Bottom Paper Margin	MARGINBOTTOM	R/W, Float	The margin in inches of the bottom of the physical page. Range: {0 – 100} Default: 0.196" (5mm)
Left Paper Margin	MARGINLEFT	R/W, Float	The margin in inches of the left of the physical page. Range: {0 – 100} Default: 0.196" (5mm)
Right Paper Margin	MARGINRIGHT	R/W, Float	The margin in inches of the right of the physical page. Range: {0 – 100} Default: 0.196" (5mm)
Top Paper Margin	MARGINTOP	R/W, Float	The margin in inches of the top of the physical page. Range: {0 – 100} Default: 0.196" (5mm)

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Finisher Options	FOLDER_GERA	R/W, Enum	Gera folder finishing options. Bypasses folder, folds to wide width, narrow width, or with a binding tab. Range: {FOLD_BYPAS, FOLD_190, FOLD_210, FOLD_190_MARGIN, FOLD_ANSI_A, FOLD_ARCH_A, FOLD_7HALFX11, FOLD_7HALFX11_MARGIN, FOLD_GFIPROGRAM}
Folding Overlength Plots	FOLDER_OVERLENGTH	R/W, Enum	When a plot length exceeds the length specified for the folder attached to the printer, this parameter specifies the action. The plot may bypass its folding operation, or it may be sent to the folder anyway for a z-fold operation. Range: {BYPASS, ZFOLD} Default: BYPASS
GFI Finishing Program Description	FINISHPROGID	R/W, String	Passes which finisher program should be used for job. MAX 32 characters and must either be "BYPASS" or identically match one of the Programs names(see XESFINISHER section).
GFI Finishing Program Setting	FINISHPROGRAM	R/W, Integer	Passes the number of the finisher program that should be used for the job. Range: 0 to 20 Default: 0 which means bypass. Note 20 is the max allowed in the system. If the finisher supports less, the max for this field becomes the max the finisher supports
GFI Tab Override Setting	FINISHTABS	R/W, Enum	Passes whether tabs should be used for job. Values of {USEPROGRAM, TABSON, TABSOFF}. Default: USEPROGRAM
GFI Hole Punch Override Setting	FINISHPUNCH	R/W, Enum	Passes whether hole punch should be used for job. Values of {USEPROGRAM, PUNCHON, PUNCHOFF}. Default: USEPROGRAM
GFI Margin Override Setting	FINISHMARGINS	R/W, Enum	Passes whether margins should be used for job. Values of {USEPROGRAM, MARGINSOFF}. Default: USEPROGRAM

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GFI Crossfold Override Setting	FINISHCROSSFOLD	R/W, Enum	Passes whether output of job should be crossfolded or just fanfolded. Values of {USEPROGRAM, CROSSFOLDOFF}. Default: USEPROGRAM
GFI Output Bin Location	FINISHBIN	R/W, Enum	Specifies which bin the job should be placed into. Values of {DONTCARE, BIN_1, BIN_2, ..., BIN_13, FANFOLD, BYPASS}. Default: DONTCARE. Note that the number of the bin will be validated against what is supported for the specific program.
GFI Standard Titleblock Location	FININTTITLEBLOCK	R/W, Booleam	Indicates whether only standard titleblock locations should be used for orientation considerations, or if alternate or non-standard locations should be considered as well.
GFI Program Max Length	FINMAXLENGTH	R, Integer	Specifies the maximum length allowed for the currently selected finisher program, in millimeters. Range: 0 (means any length is allowed), and 1 - 65,535.
GFI Title Block Location	TITLEBLOCK	R/W, Enum	Specifies where the title block is located for the page. Values of {DONTCARE, UPPERLEFT, UPPERRIGHT, LOWERLEFT, LOWERRIGHT}. Default: DONTCARE.
Lightness Adjustment	LIGHTNESSADJ	R/W, Integer	Integer value coding the print lightness adjustment value. Range: {-10 - +10}. Default: 0 (nominal adjustment). Print lightness is reduced (darkened) as the adjustment value becomes more negative, and increased (lightened) as the adjustment value becomes more positive. The lightness value increases or decreases midtone values proportionately more than highlights or shadows.

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Line Scale Mode	LINESCALEMODE	R/W, Bool	Scales pen widths along with rest of drawing when set to ON. When OFF, pen widths are not scaled. Range: {ON, OFF} Default: OFF
Media Source	MEDIASOURCE	R/W, Std., Enum	Sets the default location of input media for a job. When PAPER and/or MEDIATYPE are not specified for a job, this parameter may be consulted by the ESS to determine their values. Range: {TRAY1, TRAY2, TRAY3, ROLL1, ROLL2, ROLL3, ROLL4, MANUAL_FD, AUTO}
Prior to V7.5 Release Media Type	MEDIATYPE	R/W, Std., Enum	Sets the media type used. Range: {PAPER, BOND, VELLUM, FILM, PHOTOFILM, INKJET, COATEDBOND, TRANSPARANCY, SPECIAL, ANY} Default: BOND PAPER maps to BOND
7.5 and Later Release Media Name (Supercedes Media Type)	MEDIANAME	R/W, Std., String	Sets the media type used. The valid values for media that may be passed as an argument are obtained using the @PJL INFO XESMEDIA command. In addition to those values, a name of "ANY" may also be sent as a media type.
Mirror Image	MIRRORIMAGE	R/W, Enum	Mirrors every image printed when set. Range: {MIRROR_X, MIRROR_Y, MIRROR_XY, MIRROR_OFF} Default: MIRROR_OFF
Over Size Margin	OVERSIZEMARGIN	R/W, Integer	When PAPER is set to a value for auto size detection (ANY, ANY_ANSI, ANY_ARCH, ANY_ISO, ANY_JIS), then this parameter determines the threshold for rounding the selected paper size up to a standard paper size. If both dimensions of the image (including justification) are larger than a standard

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			paper size by less than the percentage stored in this parameter, then this paper size is chosen. Range: {0-100%} Default: 1%
Page Composition Position X	PAGECOMPPOSX	R/W, Float	This parameter is enabled only when PAGECOMPENABLE is set. It specifies the X coordinate in inches of the left side of the associated page relative to the page composition page's origin (which is the lower left corner of the sheet held by the user in landscape orientation). Range: {0 – 1200} Default: 0
Page Composition Position Y	PAGECOMPPOSY	R/W, Float	This parameter is enabled only when PAGECOMPENABLE is set. It specifies the Y coordinate in inches of the lower side of the associated page relative to the page composition page's origin (which is the lower left corner of the sheet held by the user in landscape orientation). Range: {0 – 1200} Default: 0
Page Composition Rotate	PAGECOMPROTATE	R/W, Integer	Sets the rotation of the associate page on the page composition page. Range: {0, 90, 180, 270} Default: 0
Page Rotate	PAGEROTATE	R/W, Integer/Enum	Sets the printer for autorotating each page for best fit to the available media or to a specific rotation Range: {0, 90, 180, 270, AUTO} Default: AUTO
Page Scaling	PAGESCALING	R/W, Integer/Enum	Sets the printer for scaling each page for best fit to the available media or to a specified scaling ratio. Range: {10 - 999, AUTO} Default: 100
Paper Size	PAPER	R/W, Std., Enum	Sets the default media size. Used when the job does not uniquely specify the paper size. A value of ANY evokes the automatic paper size detection feature. In this case, if the image is "close" to a standard paper size as described by

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			OVERSIZEMARGIN and UNDERSIZEMARGIN parameters, this paper size is selected. Otherwise, the best fitting roll is selected and the image is cut to length (including justification). When ANY_ISO, ANY_ANSI, ANY_ARCH, or ANY_JIS is chosen, the same procedure is used as in ANY except that the possible standard sizes are restricted to the specified family. When ANY_ROLL is selected, the best fitting roll is selected; sheet sizes are not considered. Range: {LETTER, EDGER, ANSI_A, ANSI_B, ANSI_C, ANSI_D, ANSI_E, ARCH_A, ARCH_B, ARCH_C, ARCH_D, ARCH_E, ARCH_30, ISO_A0, ISO_A1, ISO_A2, ISO_A3, ISO_A4, ISO_B1, ISO_B2, ISO_B3, ISO_B4, JIS_B1, JIS_B2, JIS_B3, JIS_B4, ROLL_A0, ROLL_A1, ROLL_A2, ROLL_A3, ROLL_A4, ROLL_A1+, ROLL_A0+, ROLL_A0++, ROLL_B1, ROLL_B2, ROLL_B3, ROLL_JIS_B1, ROLL_JIS_B2, ROLL_JIS_B3, ROLL_JIS_B4, ROLL_750, ROLL_891, ROLL_900, ROLL_8_5, ROLL_11, ROLL_17, ROLL_22, ROLL_34, ROLL_30, ROLL_9, ROLL_12, ROLL_18, ROLL_24, ROLL_36, *ROLL_14, ROLL_15, ROLL_21, ROLL_38, ROLL_42, ROLL_44, ROLL_48, ROLL_50, ROLL_53, ROLL_54,* ANY, ANY_ANSI, ANY_ARCH, ANY_ISO, ANY_JIS,
Page specific Pen Palette Name	PENPALETTE	R/W, String	This parameter is used to assign a pen palette to an individual file. This parameter, when set to a valid palette name, will

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			override the appropriate palette specifier (HPGLPALETTE, CGMPALETTE, CCPALETTE, or VDSPALETTE). If it is set to an empty string, one of these four variables will supply the name of the palette. It is recommended that PENPALETTE never have its default value changed; it should only be used in @PJL SET commands. Range: String max 32 characters. Default: ""
Emulation / Data Format	PERSONALITY	R/W, Std., Enum	Sets the data format interpreter to interpret the data as the specified data format, or autoselect the format if set to AUTO. AUTO is not legal in either the Current User Job or Modified User Job Environments. Range: {AUTO, CALCOMP, CALS1, CALS2, VDS, C4, CGM, VRASTER, HPGL, HPGL2, HP-GL/2, HPGL758X, PCL, POSTSCRIPT, TIFF6, JPEG, ASCII, FLASH, DOWNLOAD, VCGL, FILENET} Default: AUTO
Quality Mode	QUALITYMODE	R/W, Enum	The print quality setting. Range: {FAST, NORMAL, BEST} Default:FAST
Raster Halftone Option	RASTERHALFTONEOPT	R/W,Enum	Establishes the default halftone method (method to transform multibit data to binary data) to be used for Raster plots. Applies to color and monochrome printers. Range: {SCREEN, ERRORDIFFUSION} Default: SCREEN
Raster Stamp ID	RASTERSTAMPID	R/W, String	When set to the empty string, don't apply stamp. When set to a raster stamp name, apply specified stamp. Position is specified with the Raster Stamp Location parameter. It is a hard error when the specified raster stamp

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			doesn't exist in the printer. The job will print without any stamp in this case. Range: String max 32 characters. Default: ""
Raster Stamp X Location	RASTERSTAMPLOCX	R/W, Float	The X coordinate of the left side (low X coordinate) of the raster stamp on the physical page. Margins and justification settings do not affect the location of the stamp. Can be specified in inches or <center>, <left>, <right>. The left side is determined after rotation of the stamp specified by RASTERSTAMPROTATE. Range: {0 - 1200, LEFT, CENTER, RIGHT }. Default: CENTER
Raster Stamp Y Location	RASTERSTAMPLOCY	R/W, Float	The Y coordinate of the bottom side of the raster stamp on the physical page. Margins and justification settings do not affect the location of the stamp. Can be specified in inches or <top>, <center>, <bottom>. The bottom size is determined after rotation of the stamp specified by RASTERSTAMPROTATE. Range: {0 - 1200, TOP, CENTER, BOTTOM}. Default: CENTER
Raster Stamp Rotation	RASTERSTAMPROTATE	R/W, Integer	The rotation of the raster stamp before it is applied to the page. Specified counter-clockwise from the paper's X axis. Range: {0, 90, 180, or 270 degrees}. Default: 0
Raster Stamp Scaling Mode	RASERSTAMPSCALEMODE	R/W, Enum	The scaling mode of the raster stamp may be specified to be relative to the paper size or an absolute percentage. The value of the scaling (in either mode) is specified with the variable RASTERSTAMPSCALING. Range: {RELATIVE, ABSOLUTE}. Default:
Raster Stamp Scaling	RASTERSTAMPSCALING	R/W, Integer/Enum	The scaling of the raster stamp before it is applied to the page. The meaning of

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			this value depends on the value of RASTERSTAMPSCALEMODE. If the mode is RELATIVE, then this value is a percentage. The stamp will be autoscaled to this percentage of the printable area of the page. A value of 100% is equivalent to autoscaling to the paper. If the mode is ABSOLUTE, then this number is an absolute scaling percentage applied to the stamp. Range: {10 – 999%}.
Render Mode	RENDERMODE	R/W, Std, Enum	Sets the intended color model of the printers rendering mechanism. Range: {COLOR, GRAYSCALE} Default: product dependent
Under Size Margin	UNDERSIZEMARGIN	R/W, Integer	When PAPER is set to a value for auto size detection (ANY, ANY_ANSI, ANY_ARCH, ANY_ISO, or ANY_JIS), then this parameter determines the threshold for rounding the selected paper size up to a standard paper size. If both dimensions of the image (including justification) are smaller than a standard papers size by less than the percentage stored in this parameter, then this paper size is chosen. Range: {0-100%} Default: 2%
Use Marked Area	USEMARKEDAREA	R/W, Bool	When PAPER is set to a value for auto size detection (ANY, ANY_ANSI, ANY_ARCH, ANY_ISO, or ANY_JIS), then this parameter determines whether the size of the image used to determine paper size and image placement is taken from the actual bounding box of marks on the page (ON), or specified by data format dependant page size commands if available (OFF). Range: {ON, OFF} Default: OFF

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Vector Halftoning Optimization Method	VECTORHALFTONEOPT	R/W, Enum	Selects an optimization priority for vector image halftoning. The possibilities are to optimize fine line halftones or to optimize wide area fills (large polygon fills). Range: {LINE , AREAFILL}. Default: AREAFILL
Class: Printer States **Group: Marking Engine**			
Area Media Usage	AREAMEDIAUSAGE	R, Integer	Total number of square meters of media printed by the IOT
Engine Supported Language	ENGINELANG1	R, Enum	Indicates the primary language supported by the engine. Range: {ENGLISH, UKENGLISH, FRENCH, ITALIAN, GERMAN, EURO_SPANISH, SAMER_SPANISH, SAMER_PORTUGESE, DUTCH, RUSSIAN, SWEDISH, TURKISH, CZECH} Note EURO_PORTUGESE was recently removed!
Engine Supported Language	ENGINELANG2	R, Enum	Indicates the secondary language supported by the engine. Range: {ENGLISH, UKENGLISH, FRENCH, ITALIAN, GERMAN, EURO_SPANISH, SAMER_SPANISH, SAMER_PORTUGESE, DUTCH, RUSSIAN, SWEDISH, TURKISH, CZECH} Note EURO_PORTUGESE was recently removed!
Engine Processing State	ENGINESTATE	R, Enum	Indicates the current processing state of the marking engine. Range: {IDLE, PRINTING, RROR, WARMING, INIT, LINK DOWN}
Max supported engine plot length	ENGINEMAXPLOTLENGTH	R, Integer	Reports the maximum plot length that is supported by the attached IOT in millimeters. Range: 0 to 65,535

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Finisher State	FINISHERSTATE	R, Enum	Indicates the current processing state of the marking engine. Range: {READY, ERROR, BYPASS }
Supported media families	IOTMEDIAFAMILY	R, Enum	Reports whether the IOT can currently support Metric media types (ISO/JIS), English media types (ANSI/ARCH), or both. Range: {METRIC, ENGLISH, BOTH}
Linear Media Usage	LINEARMEDIAUSAGE	R, Integer	Total length of media printed by IOT
Power Saver to Rest Delay	PWRSVRTORESTDLY	R, Integer	Time for IOT to enter fuser turned-off state. Range: {0 to 1,048,576}
Ready to power saver delay	RDYTOPWRSVRDLY	R, Integer	Time for IOT to enter from normal to stand-by mode. Range: {0 to 1,048,576}
Group: Media			
Cartridge 1 print element used	COLORANT1ELEMENTUSED	R, Integer	Percent of cartridge 1's pen/head used. Range: {0-100}
Cartridge 2 print element used	COLORANT2ELEMENTUSED	R, Integer	Percent of cartridge 2's pen/head used. Range: {0-100}
Cartridge 3 print element used	COLORANT3ELEMENTUSED	R, Integer	Percent of cartridge 3's pen/head used. Range: {0-100}
Cartridge 4 print element used	COLORANT4ELEMENTUSED	R, Integer	Percent of cartridge 4's pen/head used. Range: {0-100}
Cartridge 1 colorant type installed	COLORANT1TYPE	R, Enum	The colorant of cartridge 1. Range: {CARTRIDGE_EMPY, CARTRIDGE_BLACK, CARTRIDGE_CYAN, CARTRIDGE_MAGENTA, CARTRIDGE_YELLOW}
Cartridge 2 colorant type installed	COLORANT2TYPE	R, Enum	The colorant of cartridge 2. Range: {CARTRIDGE_EMPY, CARTRIDGE_BLACK, CARTRIDGE_CYAN, CARTRIDGE_MAGENTA, CARTRIDGE_YELLOW}

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Cartridge 3 colorant type installed	COLORANT3TYPE	R, Enum	The colorant of cartridge 3. Range: {CARTRIDGE_EMP Y, CARTRIDGE_BLACK, CARTRIDGE_CYAN, CARTRIDGE_MAGENTA, CARTRIDGE_YELLOW}
Cartridge 4 colorant type installed	COLORANT4TYPE	R, Enum	The colorant of cartridge 4. Range: {CARTRIDGE_EMP Y, CARTRIDGE_BLACK, CARTRIDGE_CYAN, CARTRIDGE_MAGENTA, CARTRIDGE_YELLOW}
Cartridge 1 colorant used	COLORANT1USED	R, Integer	Percent of cartridge 1's colorant used. Range: {0-100}
Cartridge 2 colorant used	COLORANT2USED	R, Integer	Percent of cartridge 2's colorant used. Range: {0-100}
Cartridge 3 colorant used	COLORANT3USED	R, Integer	Percent of cartridge 3's colorant used. Range: {0-100}
Cartridge 4 colorant used	COLORANT4USED	R, Integer	Percent of cartridge 4's colorant used. Range: {0-100}
Roll 1 Size	INROLL1SIZE	R, Enum	The size of the paper loaded in Roll 1. Range: { ROLL_A0, ROLL_A1, ROLL_A2, ROLL_A3, ROLL_A4, ROLL_A1+, ROLL_A0+, ROLL_A0++, ROLL_B1, ROLL_B2, ROLL_B3, ROLL_JIS_B1, ROLL_JIS_B2, ROLL_JIS_B3, ROLL_JIS_B4, ROLL_750, ROLL_891, ROLL_900, ROLL_8_5, ROLL_11, ROLL_17, ROLL_22, ROLL_34, ROLL_30, ROLL_9, ROLL_12, ROLL_18, ROLL_24,
7.5 and Later Release Roll # Size	INROLLxSIZE Where x = 1 thru 4	R, Enum	The size of the paper loaded in Roll x. Range: { ROLL_A0, ROLL_A1, ROLL_A2, ROLL_A3, ROLL_A4, ROLL_A1+, ROLL_A0+, ROLL_A0++, ROLL_B1, ROLL_B2, ROLL_B3, ROLL_JIS_B1, ROLL_JIS_B2, ROLL_JIS_B3, ROLL_JIS_B4, ROLL_750, ROLL_891, ROLL_900,

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			ROLL_8_5, ROLL_11, ROLL_17, ROLL_22, ROLL_34, ROLL_30, ROLL_9, ROLL_12, ROLL_18, ROLL_24, ROLL_36, *ROLL_14, ROLL_15, ROLL_21, ROLL_38, ROLL_42, ROLL_44, ROLL_48, ROLL_50, ROLL_53, ROLL_54}*
Roll 1 Status	INROLL1STAT	R, Enum	The Status of Roll 1. Range: {NONE, FULL, EMPTY, LOW}
Roll 1 Type	INROLL1TYPE	R, Enum	The type of the paper loaded in Roll 1. Range: {PAPER, INKJETBOND, PRESENTATIONBOND, VELLUM, FILM}
Prior to V7.5 Release Roll # Type	INROLLxTYPE Where x = 1 thru 4	R, Enum	The type of the paper loaded in Roll x. Range: {BOND, VELLUM, FILM, PHOTOFILM, INKJET, COATEDBOND, TRANSPARANCY, SPECIAL}
7.5 and Later Release Roll # Type	INROLLxTYPE Where x = 1 thru 4	R, String	The type of the paper loaded in Roll x. The range of valid values that will be reported can be found using the @PJL INFO XESMEDIA command.
Roll 2 Size	INROLL2SIZE	R, Enum	The size of the paper loaded in Roll 2. Range: { ROLL_A0, ROLL_A1, ROLL_A2, ROLL_A3, ROLL_A4, ROLL_A1+, ROLL_A0+, ROLL_A0++, ROLL_B1, ROLL_B2, ROLL_B3, ROLL_JIS_B1, ROLL_JIS_B2, ROLL_JIS_B3, ROLL_JIS_B4, ROLL_750, ROLL_891, ROLL_900, ROLL_8_5, ROLL_11, ROLL_17, ROLL_22, ROLL_34, ROLL_30, ROLL_9, ROLL_12, ROLL_18, ROLL_24,
Roll 2 Status	INROLL2STAT	R, Enum	The Status of Roll 2. Range: {NONE, FULL, EMPTY, LOW}

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Roll 2 Type	INROLL2TYPE	R, Enum	The type of the paper loaded in Roll 2. Range: {PAPER, INKJETBOND, PRESENTATIONBOND, VELLUM, FILM}
Roll 3 Size	INROLL3SIZE	R, Enum	The size of the paper loaded in Roll 3. Range: { ROLL_A0, ROLL_A1, ROLL_A2, ROLL_A3, ROLL_A4, ROLL_A1+, ROLL_A0+, ROLL_A0++, ROLL_B1, ROLL_B2, ROLL_B3, ROLL_JIS_B1, ROLL_JIS_B2, ROLL_JIS_B3, ROLL_JIS_B4, ROLL_750, ROLL_891, ROLL_900, ROLL_8_5, ROLL_11, ROLL_17, ROLL_22, ROLL_34, ROLL_30, ROLL_9, ROLL_12, ROLL_18, ROLL_24,
Roll 3 Status	INROLL3STAT	R, Enum	The Status of Roll 3. Range: {NONE, FULL, EMPTY, LOW}
Roll 3 Type	INROLL3TYPE	R, Enum	The type of the paper loaded in Roll 3. Range: {PAPER, INKJETBOND, PRESENTATIONBOND, VELLUM, FILM}
Roll 4 Size	INROLL4SIZE	R, Enum	The size of the paper loaded in Roll 4. Range: { ROLL_A0, ROLL_A1, ROLL_A2, ROLL_A3, ROLL_A4, ROLL_A1+, ROLL_A0+, ROLL_A0++, ROLL_B1, ROLL_B2, ROLL_B3, ROLL_JIS_B1, ROLL_JIS_B2, ROLL_JIS_B3, ROLL_JIS_B4, ROLL_750, ROLL_891, ROLL_900, ROLL_8_5, ROLL_11, ROLL_17, ROLL_22, ROLL_34, ROLL_30, ROLL_9, ROLL_12, ROLL_18, ROLL_24,
Roll 4 Status	INROLL4STAT	R, Enum	The Status of Roll 4. Range: {NONE, FULL, EMPTY, LOW}
Roll 4 Type	INROLL4TYPE	R, Enum	The type of the paper loaded in Roll 4. Range: {PAPER, INKJETBOND, PRESENTATIONBOND, VELLUM, FILM}

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Tray 1 Size	INTRAY1SIZE	R, Enum	The size of the paper loaded in tray 1. Range: { LETTER, LEDGER, ANSI_A, ANSI_B, ANSI_C, ANSI_D, ANSI_E, ARCH_A, ARCH_B, ARCH_C, ARCH_D, ARCH_E, ARCH_30, ISO_A0, ISO_A1, ISO_A2, ISO_A3, ISO_A4, ISO_B1, ISO_B2, ISO_B3, ISO_B4, JIS_B1, JIS_B2, JIS_B3, JIS_B4}
Tray 1 Status	INTRAY1STAT	R, Enum	The status of tray 1. Range: {NONE, FULL, LOW, EMPTY}
Tray 1 Type	INTRAY1TYPE	R, Enum	The type of the paper loaded in tray 1. Range: {PAPER, INKJETBOND, PRESENTATIONBOND, VELLUM, FILM}
6.2 and Later Release TRAY # Type	INTRAYxTYPE Where x = 1 thru 4	R, Enum	The type of the paper loaded in Tray x. Range: {BOND, VELLUM, FILM, PHOTOFILM, INKJET, COATEDBOND, TRANSPARANCY, SPECIAL
Tray 2 Size	INTRAY2SIZE	R, Enum	The size of the paper loaded in tray 2. Range: { LETTER, LEDGER, ANSI_A, ANSI_B, ANSI_C, ANSI_D, ANSI_E, ARCH_A, ARCH_B, ARCH_C, ARCH_D, ARCH_E, ARCH_30, ISO_A0, ISO_A1, ISO_A2, ISO_A3, ISO_A4, ISO_B1, ISO_B2, ISO_B3, ISO_B4, JIS_B1, JIS_B2, JIS_B3, JIS_B4}
Tray 2 Status	INTRAY2STAT	R, Enum	The status of tray 2. Range: {NONE, FULL, LOW, EMPTY}
Tray 2 Type	INTRAY2TYPE	R, Enum	The type of the paper loaded in tray 2. Range: {PAPER, INKJETBOND, PRESENTATIONBOND, VELLUM, FILM}
Tray 3 Size	INTRAY3SIZE	R, Enum	The size of the paper loaded in tray 3. Range: { LETTER, LEDGER, ANSI_A, ANSI_B, ANSI_C, ANSI_D, ANSI_E, ARCH_A, ARCH_B, ARCH_C, ARCH_D, ARCH_E,

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			ARCH_30, ISO_A0, ISO_A1, ISO_A2, ISO_A3, ISO_A4, ISO_B1, ISO_B2, ISO_B3, ISO_B4, JIS_B1, JIS_B2, JIS_B3, JIS_B4}
Tray 3 Status	INTRAY3STAT	R, Enum	The status of tray 3. Range: {NONE, FULL, LOW, EMPTY}
Tray 3 Type	INTRAY3TYPE	R, Enum	The type of the paper loaded in tray 3. Range: {PAPER, INKJETBOND, PRESENTATIONBOND, VELLUM, FILM}
Low Toner	LOWTONER	R, Std., Enum	When TRUE, the toner is low in the engine. Range: {TRUE, FALSE}
Low Ink	LOWINK	R, Enum	When TRUE, one of the ink bottles in the engine is low on ink. {TRUE, FALSE}
Manual Feed Port Size	MANUALSIZE	R, Enum	The size of the paper loaded in the manual feed port. Currently, the print engine reports a constant ROLL_36. Range: { ROLL_36}
Manual Feed Port Status	MANUALSTAT	R, Enum	The status of the manual feed port. Range: {NONE, FULL, LOW, EMPTY}
Prior to V7.5 Release Manual Feed Port Type	MANUALTYPE	R, Enum	The type of the paper loaded in the manual feed port. Range: {PAPER, INKJETBOND, PRESENTATIONBOND, VELLUM, FILM}
7.5 and Later Release Manual Feed Port Media Name (Supercedes Manual Feed Port Type)	MANUALMEDIA	R, String	The type of the media loaded in the manual feed port. The range of valid values that will be reported can be found using the @PJL INFO XESMEDIA command.
Group: Configuration			
CD ROM Drive Present	CDROMPRESENT	R, Bool	TRUE when a CD-ROM Drive is present in the system. Range: {TRUE, FALSE}
ESS Firmware Revision	ESSSWREV	R, String	A String representing the firmware revision of the ESS. Range: Max 32 character string .

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Floppy Disk Drive Configuration	FDDPRESENT	R, Bool	TRUE when a floppy disk drive is present in the system. Range: {TRUE, FALSE}
Folding Device Configuration	FINISHERTYPE	R, Enum	Describes the type of finishing device present in the system. Range: {NONE, GERA_ISO, GERA_ANSI, GERA_ANSI_SPECIAL, GFI_FINISHER}
Hard Disk Drive Configuration	HDDPRESENT	R, Bool	TRUE when a hard disk drive is present in the system. Range: {TRUE, FALSE}
IOT Firmware Revision	IOTSWREV	R, String	A string representing the firmware revision of the IOT. Range: Max 32 character string.
Fax/Modem Present	MODEMPRESENT	R, Bool	TRUE when a Fax or Modem is available in the system. Range: {TRUE, FALSE}
Network Card Hardware Address	NICHWADDR	R, String	A string representing the network interface card's hardware address. The format is xx:xx:xx:xx:xx:xx. Range: Max. 17 character string.
Network Interface Card Revision	NICSWREV	R, String	A string representing the firmware revision of the Network Interface Card. Range: Max 32 character string.
Network Connection Type	NICTYPE	R, Enum	Describes the type of network interface card which is present in the ESS. Range: {NONE, THER10B, ETHER100B,
Printer Commercial Name	PRINTERNAME	R, String	The printer's commercial name. Range: Max 64 character string. The default value is based on the IOT type and is one of: "WIDE FORMAT PRINT SYSTEM 8830", "WIDE FORMAT PRINT SYSTEM 8825", "WIDE FORMAT PRINT SYSTEM 8855", "WIDE FORMAT PRINT SYSTEM 8850", "WIDE FORMAT PRINT SYSTEM 510 SERIES", "WIDE FORMAT PRINT

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			SYSTEM X2 TECH", "WIDE FORMAT PRINT SYSTEM X2", "WIDE FORMAT PRINT SYSTEM 721P", "DOCUWIDE 6030", "DOCUWIDE 6050". If a scanner is enabled the word "PRINT" is replaced by the word "COPY" in the above names.
Memory Configuration	RAMSIZE	R, Integer	The total number of BYTES of RAM memory installed in the ESS. Range: {0 - 2^31-1}
Scanner Product Name	SCANNERPROD	R, String	Identifies the scanner product by name which is attached to the printer. Empty string if no scanner. Range: Max 32 character string.
Scanner SW Revision Name	SCANNERREV	R, String	Identifies the scanner software revision which is attached to the printer. Empty string if no scanner. Range: Max 32 character string.
Scanner Type	SCANNERTYPE	R, Enum	Identifies the scanner (if any) which is attached to the printer. Range: {NONE, 7356, 7346, INTERCEPTOR}
Scanner Vender Name	SCANNERVEND	R, String	Identifies the scanner vendor by name that is attached to the printer. Empty string if no scanner. Range: Max 32 character string.
Scanner Unique ID Number	SCANNERID	R, String	Identifies the unique scanner identification number for INTERCEPTOR scanners in the form "XX:XX:XX:XX:XX:XX", where each XX equals one hexadecimal number from 00 to FF.
Group: ESS			
PJL Status	- -	X	The current 6 digit number of the PJL Status. Returned in the INFO STATUS command and USTATUS JOB response, etc.

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ESS State	ESSSTATE	R, Enum	The current processing state of the ESS. Range: {INIT, IDLE, ROCESSING, PRINTING, ERROR, OPINTERVENTION,

5.1.5 Communication Parameter Class

This class holds the values of the parameters that control the operation of the various host interface ports. All parameters in this class do not require the use of the IPARM qualifier when they are referenced with the SET, DEFAULT, INQUIRE, or DINQUIRE commands. The list of possible values for this qualifier is presented below:

- PARALLEL

- SERIAL

- ETHERTALK

- IPX

- SCSI

- TOKENTALK

- ETHER_TCPIP

- TOKEN_TCPIP

- VPI

Note that these values correspond directly to the various Communication Class parameter groups.

5.1.6 Printer Parameter Class

This class holds the values of the parameters which control the overall operation of the printer and user interface as well as the data format interpreters.

5.1.6.1 Printer Group

This group of parameters controls the functions and behaviors of the printing system which are not job specific or host interface specific.

5.1.6.1.1 PRTACCTMODE

This parameter sets the accounting mode for the printer. The value is one of:

- ENABLED

- DISABLED

- OPTIONAL

See the "AccXES Job Accounting Specification" for the definitions of how these parameters affect the job accounting function. The default value for this parameter is DISABLED.

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5.1.6.1.2 ACTIVEPARAMSET

This parameter sets the active parameter set in use as the current user default environment. There are 10 parameter sets numbered 0 through 9. A parameter set is all those parameters in the EMULATION, PAGE, and JOB parameter groups. Parameters which refer to the physical printer are not included, such as those in the COMMUNICATIONs class and PRINTER STATEs class.

All parameter setting operations from either the OCP or PJL which affect the current user default environment (eg. @PJL DEFAULT commands) affect the parameter set specified by this ACTIVEPARAMSET. The printer will treat the ACTIVEPARAMSET variable as a special case and will logically duplicate its current value among all 10 sets.

A new job entering the system will inherit the parameters from the parameter set specified by the ACTIVEPARAMSET variable. This set will be the basis of the Current User Job Environment for that job. In short, a new job starts out with a copy of the parameter set specified by ACTIVEPARAMSET. Subsequent @PJL SET commands modify that set for the associated job.

The range of this parameter is 0 through 9. The default value is 0.

5.1.6.1.3 LANG

This variable stores the current language of the user interface on the printer. Changing this value will affect the language displayed on the printer front panel interface and the language of the feedback messages from the printer. The factory default value is ENGLISH.

The following languages are currently supported:

- ENGLISH
- FRENCH
- GERMAN
- ITALIAN
- EUROPEAN SPANISH
- SOUTH AMERICAN SPANISH
- UK ENGLISH
- SOUTH AMERICAN PORTUGESE
- DUTCH
- RUSSIAN
- SWEDISH
- TURKISH
- CZECH

5.1.6.1.4 PALETTEOVERRIDE (Obsolete)

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When this parameter is enabled, then the print jobs pen settings will override the pen settings stored in the printer's internal pen palette table. When disabled, then all pen settings including pen width, color, and pattern index will be taken from the printer's internal pen palette and the job's requests to change pen parameters will be ignored. The default value of this parameter is ON (enabled).

5.1.6.1.5 PASSWORD

This variable sets the printer's password to a value that ranges from 0 to 65535. When the password is 0, then no password checking is enforced in the printer for any operation. When it is non-zero, then a password is required (placed in the JOB command) when performing operations such as DEFAULT and several of the Xerox custom commands. The default value of this parameter is 0.

5.1.6.1.6 PMTREFRESH

This variable sets the refresh timeout for the WebPMT Main Page to a value that ranges from 5 to 3600. This value is measured in seconds. The WebPMT Main Page will refresh after the set number of seconds as long as the user remains on the Main Page. This value will not reset with factory defaults. The default value of this parameter is 10.

5.1.6.1.7 NESTINGMODE

This parameter specifies if plot nesting is enabled.

5.1.6.1.8 NESTINGTIMEOUT

This parameter specifies the plot nesting time-out value.

5.1.6.1.9 TIMEOUT

This parameter specifies the host communications port time-out period.

5.1.6.1.10 MM_QUEUING

This parameter specifies if mismatch queuing is enabled.

5.1.6.1.11 DATEFORMAT

This parameter specifies the current Date Format for dates displayed in the user interfaces, on Banner pages, on Error/Warning pages, on Diagnostic pages, and within Label strings. Changing this value will affect the date displayed on the printer front panel, on Web PMT pages, and on the indicated pages and strings. The factory default value is IMPERIAL.

The following Date Formats are supported:

- IMPERIAL – date displayed as MM/DD/YYYY

- INTERNATIONAL – date displayed as DD/MM/YYYY

5.1.6.2 Emulation Group

This group of variables control the behavior of the data format interpreters. When using the SET or DEFAULT command to set these parameters, the LPARM:<data format> qualifier may be used, as described in the definition for SET and DEFAULT in [HP96]. However, it is NOT required. The possible values of the LPARM qualifier are exactly those available for the PERSONALITY command.

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The variables in this group are

- CCCHECKSUM

- CCEOM

- CCNUMSYNC

- CCRESOLUTION

- CCTERMEOP

- CCTERMPAUSE

- CCTERMSA

- RESOLUTION

- HPGLMODE

- VCHARSET

- VDEVLINEBYTES

- VDEVLINECHARS

- VRASTEREMUL

- VRESOLUTION

5.1.6.2.1 CCCHECKSUM

For those printers that don't support CalComp Autosynch detection, this parameter specifies whether or not a checksum byte is included and used in CalComp jobs. For printers with autosynch detection, this parameter functions as a "hint" as to whether or not a checksum byte is used in the file. The user is strongly encouraged to set this value to the most likely case, as processing efficiency increases when the hints are correct. The default value of this parameter is ON.

5.1.6.2.2 CCEOM

For those printers that don't support CalComp Autosynch detection, this parameter specifies the EOM byte. For those printers with autosynch detection, this parameter specifies as a "hint" the EOM byte. The user is strongly encouraged to set this value to the most likely value for EOM, as processing efficiency increases when the hints are correct. The range of this parameter extends from 0 to 31. The default value is 13.

5.1.6.2.3 CCNUMSYNC

For those printers that don't support CalComp Autosynch detection, this parameter specifies the number of SYNC bytes used in the data stream. For those printers with autosynch detection, this parameter specifies as a "hint" the number of SYNC bytes used. The user is strongly encouraged to set this value to the most likely value for the number of SYNCs, as processing efficiency increases when the hints are correct. The range of this parameter extends from 1 to 2. The default value is 2.

5.1.6.2.4 CCPALETTE

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This string specifies the name of the palette which controls pens in the Calcomp data format interpreter. CCPALETTESOURCE determines how this palette is applied to interpreted jobs. The string has a maximum of 32 characters in it, and the default value is "0".

5.1.6.2.5 CCPALETTESOURCE

This parameter sets the source of control for pens in Calcomp files. Can be set to JOB so that after initialization, the palette assigned by CCPALETTE is ignored. Otherwise, it may be set to PRINTER so that the palette named by CCPALETTE determines the pen settings. The set of possible values is {JOB , PRINTER}. The default value is JOB.

5.1.6.2.6 CCRESOLUTION

This parameter specifies the intended resolution of the CalComp job data. The printer will automatically perform the resolution conversion from this resolution to the native resolution of the printer. The range of this value varies continuously from 50 to 4064. The default value is 2032.

5.1.6.2.7 CCSYNC

For those printers that don't support CalComp Autosynch detection, this parameter specifies the SYNC byte. For those printers with autosynch detection, this parameter specifies as a "hint" the SYNC byte. The user is strongly encouraged to set this value to the most likely value for SYNC, as processing efficiency increases when the hints are correct. The range of this parameter extends from 0 to 127. The default value is 22.

5.1.6.2.8 CCTERMEOP

This specifies a termination condition for a Calcomp file. With this parameter, the user can direct the controller to terminate file processing when 1 or 2 consecutive EOP commands have been parsed. If the value of this parameter is NONE, then this parameter is irrelevant to determining the end of file condition.

5.1.6.2.9 CCTERMFORCEPLOT

When ON, a force plot command in a Calcomp file directs the controller to terminate processing of the current file. When OFF, this parameter is irrelevant to determining the end of file condition. The default value is ON.

5.1.6.2.10 CCTERMMANUAL

When ON, a manual command in a Calcomp file directs the controller to terminate processing of the current file. When OFF, this parameter is irrelevant to determining the end of file condition. The default value is OFF.

5.1.6.2.11 CCTERMNEWPLOT

When ON, a new plot command in a Calcomp file directs the controller to terminate processing of the current file. When OFF, this parameter is irrelevant to determining the end of file condition. The default value is OFF.

5.1.6.2.12 CCTERMPAUSE

When ON, a pause command in a Calcomp file directs the controller to terminate processing of the current file. When OFF, this parameter is irrelevant to determining the end of file condition.

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5.1.6.2.13 CCTERMSA

This specifies a termination condition for a Calcomp file. With this parameter, the user can direct the controller to terminate file processing when either or both a 999 or 9999 search address command is received. If the value of this parameter is NONE, then this parameter is irrelevant to determining the end of file condition. The set of possible values includes: {999, 9999, BOTH, NONE}. The default value is BOTH.

5.1.6.2.14 CCTERMSTARTPLOT

When ON, a start plot command in a Calcomp file directs the controller to terminate processing of the current file. When OFF, this parameter is irrelevant to determining the end of file condition. The default value is ON.

5.1.6.2.15 CCTERMTOF

When ON, a top of form command in a Calcomp file directs the controller to terminate processing of the current file. When OFF, this parameter is irrelevant to determining the end of file condition. The default value is ON.

5.1.6.2.16 CGMBKGRNDCOLOR

This parameter allows the user to override the CGM job data to enforce black markings on white background. When the value is set to FORCEBLACKONWHITE, this override occurs. The default value, FILECONTROL, prevents the printer from overriding job data.

5.1.6.2.17 CGMDEFAULTPAPER

Establishes the default paper size for CGM plots which do not inherently have a size. Value is similar to Paper Size BUT must have 2 dimensions; therefore, it can not be ANY or a ROLL* size. The default value will be ANSI_A.

5.1.6.2.18 CGMPALETTE

This string specifies the name of the palette which controls pens in the CGM data format interpreter. CGMPALETTESOURCE determines how this palette is applied to interpreted jobs. In CGM, only the color attribute of the pen palette is used to override the file defined LUT. Pen width and pattern attributes are not used in the palettes when assigned to CGM. The string has a maximum of 32 characters in it, and the default value is "0".

5.1.6.2.19 CGMPALETTESOURCE

This parameter sets the source of control for pens in CGM files. Can be set to JOB so that after initialization, the palette assigned by CGMPALETTE is ignored. Otherwise, it may be set to PRINTER so that the palette named by CGMPALETTE determines the pen settings. The set of possible values is {JOB, PRINTER}. The default value is JOB.

5.1.6.2.20 HPDEFAULTMC

This variable specifies the Merge Control setting for HPGL jobs. When interpreting HPGL jobs, this setting will be used whenever the Merge Control parameter is reset to the default value, except for the DF command (which will set the Merge Control parameter to off). This variable can be set to ON or OFF. The default is OFF.

5.1.6.2.21 HPDEFAULTNP

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This variable specifies the Number of Pens setting for HPGL jobs. This variable is provided to specify the number of pens foe files which do not contain an NP command an yet use more than 8 pens. The HPGL specification states that color rendering devices shall default to 8 pens. If the file uses more than 8 pens, but fails to specify an NP command, the rendering device is to perform a modulo 8 operation on the requested pen number to select the pen to use.

5.1.6.2.22 HPGLMODE

When the controller determines that the language for the job is HPGL through the ENTER LANGUAGE command, the PERSONALITY environment variable, or the auto format recognition mechanism, this parameter is used to direct the interpreter to assume that the file is HPGL/1 or HPGL2. It is important to realize that although one can specify HP758X, HP-GL/2, HPGL2, or HPGL in either ENTER LANGUAGE or PERSONALITY, these values all map to the generic HPGL interpreter.

The HPGL interpreter will sometimes switch modes automatically if it determines without ambiguity that the file is one type or the other, independent of the value of HPGLMODE. For example, encountering a PS command will direct the interpreter to assume that the file is HPGL/2.

5.1.6.2.23 HPGLPALETTE

This string specifies the name of the palette which controls pens in the HPGL data format interpreter. HPGLPALETTESOURCE determines how this palette is applied to interpreted jobs. The string has a maximum of 32 characters in it, and the default value is "0".

5.1.6.2.24 HPGLPALETTESOURCE

This parameter sets the source of control for pens in HPGL files. Can be set to JOB so that after initialization, the palette assigned by HPGLPALETTE is ignored. Otherwise, it may be set to PRINTER so that the palette named by HPGLPALETTE determines the pen settings. The set of possible values is {JOB, PRINTER}. The default value is JOB.

5.1.6.2.25 HPIGNOREPS

Setting the parameter to ON causes the HP-GL DFI to ignore the Page Size (PS) command. Setting this to OFF uses the HPGL/2 Page Size (PS) command to determine the page size. The default value is OFF.

5.1.6.2.26 HPROUNDLINEENDS

Setting the parameter to ON causes the HP-GL DFI to print lines with round ends and round joints. Setting this to OFF uses the HPGL/2 Line Attributes (LA) command to define the line type. The default value is OFF.

5.1.6.2.27 HPTERMAF

This specifies a termination condition for a HPGL file. With this parameter, the user can direct the controller to terminate file processing when an AF command is received if the value of this parameter is ON. If this parameter's value is OFF, then this parameter is irrelevant to determining the end of file condition. The default value is ON.

5.1.6.2.28 HPTERMAH

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This specifies a termination condition for a HPGL file. With this parameter, the user can direct the controller to terminate file processing when an AH command is received if the value of this parameter is ON. If this parameter's value is OFF, then this parameter is irrelevant to determining the end of file condition. The default value is ON.

5.1.6.2.29 HPTERMFR

This specifies a termination condition for a HPGL file. With this parameter, the user can direct the controller to terminate file processing when an FR command is received if the value of this parameter is ON. If this parameter's value is OFF, then this parameter is irrelevant to determining the end of file condition. The default value is ON.

5.1.6.2.30 HPTERMNR

This specifies a termination condition for a HPGL file. With this parameter, the user can direct the controller to terminate file processing when a NR command is received if the value of this parameter is ON. If this parameter's value is OFF, then this parameter is irrelevant to determining the end of file condition. The default value is OFF.

5.1.6.2.31 HPTERMPG

This specifies a termination condition for a HPGL file. With this parameter, the user can direct the controller to terminate file processing when an PG command is received if the value of this parameter is ON. If this parameter's value is OFF, then this parameter is irrelevant to determining the end of file condition. The default value is ON.

5.1.6.2.32 HPTERMPLOTOFF

This specifies a termination condition for a HPGL file. With this parameter, the user can direct the controller to terminate file processing when a Plotter Off command is received if the value of this parameter is ON. If this parameter's value is OFF, then this parameter is irrelevant to determining the end of file condition. The default value is ON.

5.1.6.2.33 HPTERMRP

This specifies a termination condition for a HPGL file. With this parameter, the user can direct the controller to terminate file processing when an RP command is received if the value of this parameter is ON. If this parameter's value is OFF, then this parameter is irrelevant to determining the end of file condition. The default value is ON.

5.1.6.2.34 HPTERMSP

This specifies a termination condition for a HPGL file. With this parameter, the user can direct the controller to terminate file processing when a SP command is received if the value of this parameter is ON. If this parameter's value is OFF, then this parameter is irrelevant to determining the end of file condition. The default value is OFF.

5.1.6.2.35 PSDEFAULTPAPER

Establishes the default paper size for PostScript plots which do not inherently have a size. Value is similar to Paper Size BUT must have 2 dimensions; therefore, it can not be ANY or a ROLL* size.

5.1.6.2.36 PSHALFTONE

Establishes the default halftone method (method to transform multibit data to binary data) to be used for PostScript plots. Range: {SCREEN, ERRORDIFFUSION} Default: SCREEN
For monochome printers, the controller provides support for halftone screening only. For color printers, the controller provides support for halftone screening or error diffusion.

5.1.6.2.37 EPS

When ON, the PS interpreter will parse and interpret any Encapsulated Postscript (EPS) commands contained in the file. When OFF, the PS interpreter will ignore the EPS commands. Range: {OFF, ON} Default: OFF

5.1.6.2.38 RESOLUTION

Used by the HP-RTL DFI as the default resolution in determining CAP position and raster scaling. Range:300-1200, default:300

5.1.6.2.39 TIFF1BITPHOTO

Allows the user to ignore a specific TIFF tag contained in a TIFF job. This tag can set the minimum code value to black in single bit TIFF data. The parameter can be used to force a white background with black data, even if the file specifies inverted coloring. The value FILECONTROL is the default and prevents any override. The value IGNOREMINISBLACK causes the printer to ignore instructions to set the minimum code value to black coloring.

5.1.6.2.40 VDSCHARSET

Selects the character set encoding for the VDS emulations. It may be either {ASCII or EBCDIC}. The default value is ASCII.

5.1.6.2.41 VDSPALETTE

This string specifies the name of the palette which controls pens in the VDS data format interpreter. VDSPALETTESOURCE determines how this palette is applied to interpreted jobs. In VDS/ordered vector format, only pen #1 attributes are used. The string has a maximum of 32 characters in it, and the default value is "0".

5.1.6.2.42 VDSPALETTESOURCE

This parameter sets the source of control for pens in VDS files. Can be set to JOB so that after initialization, the palette assigned by VDSPALETTE is ignored. Otherwise, it may be set to PRINTER so that the palette named by VDSPALETTE determines the pen settings. The set of possible values is {JOB, PRINTER}. The default value is JOB.

5.1.7 Processing Parameter Class

This class consists of two groups of parameters that control how jobs are processed. The Job Processing Group is a collection of parameters that affect the processing of the entire job, such as the number of copies or the data format of the job. The Page Processing Group is composed of parameters that affect the processing of individual pages, such as paper type or paper size.

5.1.7.1 Job Processing Group

5.1.7.1.1 ACCTNUM (prior to 6.2)

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To support print job accounting, a job may include this parameter to specify the account number to charge the media usage to.

5.1.7.1.2 SUBACCTNUM (prior to 6.2)

To support print job accounting, a job may include this parameter to specify the subaccount number to charge the media usage to.

5.1.7.1.3 ACCTNUM / SUBACCTNUM (Release 6.2)

Release 6.2 maps the values of ACCTNUM and SUBACCTNUM to JBA_ACCT_ID and JBA_USER_ID respectively.

5.1.7.1.4 JBA_USER_ID (6.2)

To support print job accounting, a job may include this parameter to specify the user identifier to which media usage is being charged.

5.1.7.1.5 JBA_ACCT_ID (6.2)

To support print job accounting, a job may include this parameter to specify the account identifier to which media usage is being charged.

5.1.7.1.6 BANNERPAGEENABLE

Banner pages appear once per job when enabled. They may be set to appear before or after a job with the parameter BANNERPAGEPOS. In a collation, only one banner page is generated, independent of the number of sets of the job desired. When enabled, banner pages are created for every job excluding test prints. Note also that malformed jobs which leave extra data at the end of their data section will generate an apparently spurious banner page. This is because this extra data is not distinguishable from another job and is treated as a valid job.

To specify its printing operation, a banner page inherits the job processing parameters from the associated job and page processing parameters of the printer default parameter set with the following exceptions:

- Paper size is set to ANY

- Rotation is set to AUTO

- Scaling is set to 100%

- Mirroring is set to OFF

The banner page is considered part of the job and would therefore participate in folding. It would not appear in job status reporting as an independent job. The banner pages contain the following information:

- The internal job ID number and PJL job name if available.

- The data format (or none if the job is another internally generated print)

- The job's input port (or none if the job is another internally generated print)

- The job size in bytes if the banner page is set to appear after the job, or "NOT AVAILABLE" otherwise.

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- The date and time of the job's printing

5.1.7.1.7 BANNERPAGEPOS

When set to BEFORE, banner pages are generated prior to printing the job. When set to AFTER, banner pages trail the job's prints. The default value is BEFORE.

5.1.7.1.8 COLLATIONENABLE

Automatic electronic collation is supported for jobs that contain more than one page in the job stream and more than one copy is being made. For jobs with copies set to one, an ON or AUTO value for this parameter causes the pages to print out in reverse order when no folder is present, or forward order when a folder is being used. For jobs with only one page, the value of this parameter is irrelevant. OFF implies that no collation is used. FORWARD or REVERSE values allow the user to specify the collation direction explicitly. The factory default value is OFF.

Note that the values ON or AUTO are identical in function and are treated as interchangeable by the printer. When either ON or AUTO are currently in effect, the value ON will be returned when queried with a PJL DINQUIRE or INQUIRE command.

An N page job is reverse collated if the printer generates pages in the order {0,1,...(N-1), 0, 1, ...(N-1), ...}. Without collation, pages are printed in the order {0, 0, 0, ... 1, 1, 1, ..., ... (N-1), (N-1), (N-1), ...}.

5.1.7.1.9 COPIES

This setting determines the number of copies made of each page represented in the job stream. This is the most efficient way for the system to generate multiple copies since the job needs to be set, interpreted and rendered only one time. The factory default value is 1.

5.1.7.1.10 DIAGPAGEENABLE

When set to ON, a diagnostic page will be generated after every page printed. To specify their printing operation, diagnostic pages inherit the job and page processing parameters of the preceding page with the following exceptions:

- Paper size is set to ANY

- Rotation is set to AUTO

- Scaling is set to 100%

- Mirroring is set to OFF

Diagnostic pages include the following information:

- Generic job information

- Identical to the banner page content

- System settings

- AppleTalk name

- Error page enable

- Bond/Film/Vellum Mismatch Mode

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- Language

- Port Timeout

- Toner Density

- Maximum Plot Length

- Banner and Diagnostic page parameters

- Calcomp Emulation parameters (palette info, termination options, …)

- HPGL Emulation parameters (palette info, termination options, …)

- CGM Emulation parameters

- Versatec Raster Emulation parameters

- Versatec Data Standard Emulation parameters

- TIFF parameter

- Processing Defaults

- Collation and copy parameters

- Data format

- Job priority

- Finisher and other page composition parameters (justification, media source, …)

- Label parameters

This information is taken from the associated (preceding) printed file's set of processing parameter values.

5.1.7.1.11 MAXPLOTLEN

This parameter sets a maximum length that the printer will be allowed to print. When a plot that exceeds this length is received and processed, the printer will truncate (clip) the plot to the length specified in this parameter. The units of this parameter are inches. The value of this parameter may range from 48" (4 feet) to 960" (86 feet). The default value is 960" (80 feet).

5.1.7.1.12 MM_MODE_PAPER

This parameter sets the policy for the printer in handling media mismatches for pages printed on a paper media type. A media mismatch typically occurs when the job requires a paper size or roll size which is not available in the printer at the time of printing. This parameter can take on one of three values: BLOCK, SCALE, or SUBSTITUTE.

When the parameter is set to BLOCK, then the printer will halt operation just prior to printing the mismatching page. The front panel of the printer will usually query the user to install the correct media or cancel the job. Processing and printing of jobs behind the offending page is typically blocked until the mismatch condition is resolved.

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When this parameter takes on the SCALE value, the mismatching job will first attempt to find the smallest paper size which is larger than the required paper size (or roll size if the original requirement was for a roll). To facilitate this search, autorotation is automatically set for the job when the job is requesting a specific standard sheet size. This overrides the job's original setting for rotation. If a larger size is found which accommodates the image justified on the page with the desired margins, the image prints on this larger size as if it were the originally required size. Specifically, the originally requested paper size's clip window is used when printing on the larger paper. Currently, the smaller requested size is placed in the (0, 0) coordinate in physical space of the larger size selected (closest to the printer operator control panel). If no larger size is available, the printer then looks for the largest size of this media type in the system. If one is found, the page's image is autoscaled down to fit this new paper size and printed. If no size is found at this point, then this page is treated as a blocking request for the originally requested paper size if the paper code is supported by the system (as if MM_MODE_PAPER were set to BLOCK). If the paper code requested is not supported by the system, then a roll size which is closest in size to the width of the job's requested paper size is selected and processed.

When this parameter takes on the SUBSTITUTE value, the mismatching job will first attempt to ignore any media source specification. If the job is still a mismatch, it will attempt to scale the job (as if MM_MODE_PAPER were set to SCALE). If the job is still a mismatch, it will substitute another media type.

The default value of this parameter is SCALE.

5.1.7.1.13 MM_MODE_*[media type]*

This parameter sets the policy for the printer in handling media mismatches for pages printed on the specified media type. See MM_MODE_PAPER for a detailed explanation of these parameters. The default value of these parameters is SCALE.

5.1.7.1.14 NESTINGEXCLUSIVE

This parameter specifies if plot nesting exclusive is enabled.

5.1.7.1.15 OWNER

This is a very important value to set in print jobs submitted to the AccXES controller. It is used to denote the client, host, or user sending the job. When the job is referred to after it has been submitted by a subsequent HP-PJL job, the owner is sometimes used to determine the right of this second job to modify the first. For example, an HP-PJL job which attempts to cancel a previously submitted job must have either a @PJL SET OWNER="XXXX" in it that matches a similar line in the previously submitted job or must include the printer's password in the @PJL JOB command wrapping the cancel command.

The default value is "*".

5.1.7.1.16 PAGECOMPENABLE

This parameter is used for page composition. When set to ON, all the files contained with a printer job will be composed onto the same physical sheet of paper. Otherwise, the job is a normal job. The default value is OFF. This variable must be set prior to any files sent within the job.

JOB/EOJ pairs can be used to group files for page composition. Whenever a JOB or EOJ is encountered, the current page composition group is ended, and a new one is started with the next file. PJL jobs may be nested, so several pages composed in this way may be printed in a single PJL job by nesting them.

AccXES PJL Interface

In page composition, a number of pages are normally composed onto a single physical sheet, hereafter called a canvas. The pages to be composed will be called constituent pages. Conceptually, a constituent page is fully mapped to a paper with all transforms applied (rotation, justification, scaling) just as if it were going to be printed normally by itself. The resulting virtual page is mapped to the canvas using specific page composition parameters which specify location and rotation.

Note that there is only one physical page output for a given page composition job. Also note that the positioning and rotation parameters for page composition can be specified uniquely by PJL down to the level of a file. Therefore, if a file contains multiple printed pages normally, each page in the file will inherit the same page composition position and rotation parameters. This will most likely cause the pages to be overlapping on the canvas.

The canvas's paper size selected with PAGECOMPPAPER must be a valid sheet size. Currently, autosize detection and roll sizes are not supported for a page composition canvas. PAGECOMPMEDIATYPE and PAGECOMPMEDIASOURCE are provided as well to specify the specific media type and media source of the canvas. When PAGECOMPENABLE is ON, the MEDIATYPE and MEDIASOURCE parameters which may be associated with constituent files in the page composition are ignored. If there is a media mismatch generated for the canvas due to the availability of the media size or type, it will be forced to a blocking media mismatch since scaling mismatches may require autoscaling which is not allowed.

An important restriction to note is that a constituent page must have a value for PAPER which specifies a sheet size (ANSI_A, ARCH_E, etc…) and must not be set to autosize or a roll size. If a non-standard sheet size is specified for a constituent page with the PAPER variable, then ANSI_A is arbitrarily selected as the page's logical size.

To specify the location and rotation of each constituent page on the canvas, PAGECOMPPOSX, PAGECOMPPOSY, and PAGECOMPROTATE are used. The sequence of evaluation of the position and transformation of a constituent page is detailed below:

First, the following parameters associated with each constituent file are applied as normal:

- JUSTIFYX

- JUSTIFYY

- PAGEROTATE

- PAGESCALING

- MIRROR

- PAPER

- MARGINTOP

- MARGINBOTTOM

- MARGINLEFT

- MARGINRIGHT

- LABELSTRING

- LABELFONT

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- LABELFONTOBJ

- LABELSIZE

- LABELLOCX

- LABELLOCY

- LABELROTATE

- LABELSHADING

- RASTERSTAMPID

- RASTERSTAMPLOCX

- RASTERSTAMPLOCY

- RASTERSTAMPROTATE

- RASTERSTAMPSCALEMODE

- RASTERSTAMPSCALING

After these normal parameters are applied, rotation specified in the PAGECOMPROTATE parameter of the constituent page is applied. Finally, the lower left corner of the result image plotted on it's "virtual paper" is designated as the positioning point. PAGECOMPPOSX/Y are used to specify this positioning point relative to the canvas's lower left corner. Recall that for a sheet size, left and right (x axis) and top and bottom (y axis) are relative to the sheet being held by the user in a landscape orientation. If a given constituent page has a PAGECOMPROTATE value of 0 degrees, then the long axis of the constituent page will be aligned with the long axis of the canvas sheet.

Note that labels and raster stamps are positioned as normal for each constituent page. Each constituent page within the page composition job may specify its own unique raster stamp or label which is positioned relative to the constituent page, and not the canvas.

Banner page's (specified to occur before or after the job) will appear on their own physical sheet of paper with similar rules as non-composed jobs. They will not affect the output of the page composition job itself. However, error pages or diagnostic pages will "break" the page composition immediately after the page to which they belong is mapped to the page composition. That is, a page composition will be output after the page with the error page or diagnostic page without the output of the page's following. After the error or diagnostic page has been completed, then the page composition will start again with the page immediately following the error page. For example, if there are page's A, B, and C and B has an error page associated with it, then pages A and B will be output composed in their specified positions, then B's error page would appear, then C will be output composed in it's specified position. If the media type for the canvas was specified to be a transparent media, then the page composition would look complete if the two outputs were stacked one on top of the other.

5.1.7.1.17 PAGECOMPMEDIASOURCE

This parameter is active only if PAGECOMPENABLE is set to ON. It specifies the input source for the page composition paper onto which constituent page composition files are placed. Note that when this parameter is active, then MEDIASOURCE is ignored throughout the remainder of the page composition job. The default value is AUTO. The range is {TRAY1, TRAY2, TRAY3, ROLL1, ROLL2, ROLL3, ROLL4, MANUAL_FD, AUTO}.

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5.1.7.1.18 PAGECOMPMEDIATYPE

This parameter is active only if PAGECOMPENABLE is set to ON. It specifies the media type for the page composition media onto which constituent page composition files are placed. Note that when this parameter is active, then MEDIATYPE is ignored throughout the remainder of the page composition job. The default value is PAPER. The range is {PAPER, INKJETBOND, PRESENTATIONBOND, ELLUM, FILM, ANY}.

If the printer does not have the media of the requested size and type, then it automatically moves into a "blocking" (query) mismatch mode.

5.1.7.1.18.1 PAGECOMPMEDIATYPE (Release 6.2)

The set of valid media types for 6.2 and later release are {PAPER, BOND, VELLUM, FILM, PHOTOFILM, OATEDBOND, TRANSPARANCY, INKJET, and SPECIAL}

The default value is BOND.

5.1.7.1.19 PAGECOMPMEDIANAME

This command should be used in place of the PAGECOMPMEDIATYPE command starting with AccXES V7.5.

This parameter is active only if PAGECOMPENABLE is set to ON. It specifies the media type for the page composition media onto which constituent page composition files are placed. Note that when this parameter is active, then MEDIANAME is ignored throughout the remainder of the page composition job.

The valid strings that may be passed as arguments to this command may be found using the @PJL INFO XESMEDIA command.

5.1.7.1.20 PAGECOMPPAPER

This parameter is active only if PAGECOMPENABLE is set to ON. It specifies the media sheet size for the page composition canvas onto which constituent page composition files are placed. This variable may take on only valid sheet sizes; roll sizes or autosizing are not allowed. Note also that constituent files within the page composition will have their own "virtual" paper size specified through the normal PAPER variable. The range of PAGECOMPPAPER is { LETTER, LEDGER, ANSI_A, ANSI_B, NSI_C, ANSI_D, ANSI_E, ARCH_A, ARCH_B, ARCH_C, ARCH_D, ARCH_E, ARCH_30, ISO_A0, ISO_A1, ISO_A2, ISO_A3, ISO_A4, ISO_B1, ISO_B2, ISO_B3, ISO_B4, JIS_B1, JIS_B2, JIS_B3, JIS_B4}. The default value is ARCH_E.

 If the printer does not have the media of the requested size and type, then it automatically moves into a "blocking" (query) mismatch mode.

5.1.7.1.21 PRIORITY

This integer value sets the job scheduling priority for the user job. A higher value indicates a higher scheduling priority. The valid range is 1 through 10. The factory default value is 5.

5.1.7.1.22 SINGLEJPGJOB

AccXES PJL Interface

This parameter is a boolean with values of ENABLED, DISABLED, Any Supported Roll Size. When ENABLED all pages of a job that are the same width will be concatenated together. When a roll size is specified, all pages are forced to that width roll and concatenated together.

5.1.7.2 Page ProcessingGroup

5.1.7.2.1 CONTRASTADJ

The setting of this variable specifies the relative print contrast desired for multibit grayscale and RGB color vector and raster data.   Range: {-10 - +10}. Default: 0. The default value specifies a nominal print contrast. Increasingly negative values proportionately reduce the contrast in the print, while increasingly positive values proportionately increase contrast of the print. In the print tone adjustment process, the contrast adjustment is applied before the lightness (LIGHTNESSADJ) adjustment. This setting is not applicable to PostScript plots.{

5.1.7.2.2 DOCUMENTTYPE

This variable specifies the rendering intent of a document, which, in turn, effects the image processing of documents to achieve optimal image quality. The valid options are: {AUTOSELECT, GRAPHICS, HOTO, LINESANDTEXT}.

AUTOSELECT is the default value. This option indicates that the DOCUMENTTYPE should be determined by controller.

5.1.7.2.3 FINELINEGRAYSCALERENDERING

This variable specifies how fine lines should be rendered when the RENDERMODE is set to GRAYSCALE. The valid options are: {CONTONE, BLACK}. CONTONE is the default value. In GRAYSCALE RENDERMODE, fine lines that are drawn in a light luminance color (for example yellow) will appear very light if this variable is set to CONTONE. Setting this variable to BLACK will cause these lines to appear black.

5.1.7.2.4 FINELINEPIXELTHRESHOLD

Specifies the maximum line width that will be processed as a fine line. Range: {1 - 25} Default: 7. Note that this is applicable for print jobs only, but not for the PostScript data format or for lines contained in a raster image.

5.1.7.2.5 JUSTIFYX/JUSTIFYY

This field specifies the justification of the plot on the physical page. It may be specified in terms of {Upper, Center, Lower} X {Left, Center, Right}, or it may be specified as a measurement in inches of the top and left margins. The factory default value of this parameter is JUSTIFYX = LEFT, and JUSTIFYY = BOTTOM. Justification is measured from the printable area of the page, as opposed to the physical page size. The printable area of the page is defined by the MARGINxxx variables.

Left and right correspond to low X values and high X values respectively in the coordinate system of the physical page. In sheet paper sizes, the X axis is always the long edge of the paper. As described in PAGEROTATE, the image may be rotated to preserve this definition (occurs when the page is printed long edge first). In roll paper sizes, the X axis is always the feed direction of the paper.

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JUSTIFYX set to left corresponds to the positioning the image against the leftmost margin boundary. In printers that support MARGINLEFT, this means that left is equivalent to 0. If not, then it is set to the machine's minimum which is typically $5 - 6$ mm. Similarly, JUSTIFYX set to right corresponds to positioning the image against the rightmost margin boundary which is set with MARGINRIGHT if supported, or against the printer's minimum. JUSTIFYY top and bottom values have similar behaviors.

In printers which do not support MARGINxxx variables, the machine minimum value can be overridden by setting JUSTIFYX/Y to numeric values less than the minimum. For instance, to achieve edge to edge printing (which is typically not guaranteed by the printer's specifications for accuracy), set JUSTIFYX and JUSTIFYY to 0.

Note that when a roll size is selected either through an explicit roll request or for an autosize which does not capture to a standard sheet size, then the JUSTIFYX settings for LEFT, CENTER, and RIGHT all result in the same output. This is simply because the roll is cut to the image's length.

Also note that the print engine has a minimum print length which it enforces (and is not known to the controller). This minimum is specified in the engine specifications. Images which are shorter than this length are printed as normal with additional paper added by the engine to pad out to the minimum length. This produces a print which requires the minimum amount of "trimming" to obtain the desired outcome.

5.1.7.2.6 LABELFONT (Obsolete)

This parameter specifies the name of one of the fonts resident in the printer. The default value "HP Stick Set 0" for this parameter specifies the default HPGL stick font (HPGL/2 character set 0) which is a Roman8 stick font. The value specified in this parameter is NOT case sensitive. For example, "SYMBOL," "symbol," and "Symbol" will all successfully specify the Symbol font. This is an example of the font substitution mechanism. It is important to note that when set to a non-null value, LABELFONTOBJ parameter detailed below overrides the LABELFONT parameter. See below for more details. When using LABELFONT within a job to set a font with SET commands, it would be prudent to set LABELFONTOBJ to "" as well with a SET command.

5.1.7.2.7 LABELFONTOBJ

This parameter provides an alternate method to LABELFONT for specifying the font to be used in the label. When this parameter contains a non-zero length string, then it overrides the LABELFONT parameter. This parameter is case sensitive. It specifies the name of the object containing the desired font, whereas LABELFONT specifies the name of the font contained in an object. The names of fonts and font objects contained in the printer can be queried with an INFO XESFONTS command.

Note that font names are not always unique among various font characteristic combinations. For example, the font name "HP2 Stick Font" is used for both proportional and non-proportional versions of this typeface. However, font object names are unique. In the above example, the two font object names are "HP2 Stick Font" and HP2 Stick Font – proportional"

Also beware that some fonts use unusual character set encodings (non-ASCII). Using this font with standard ASCII strings will result in unexpected characters. Examples include "Symbol" and several CalComp fonts. The default value of the LABELFONTOBJ parameter is "OCRB."

5.1.7.2.8 LABELLOCX/LABELLOCY

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This variable is used to specify the X (Y) position of the label as either an absolute coordinate, or through a relative positioning value. Using absolute coordinates, this parameter specifies the X (Y) coordinate of the label's bounding box's lower left corner in inches from the physical paper's origin. In relative coordinates, the value LEFT (BOTTOM), CENTER, OR RIGHT (TOP) may be used. In these cases, the rotated label is justified within the page's plotting area on the left, center, or right side.

See the PAGEROTATE section, which describes the PAGEROTATE variable for the location of the physical paper's origin for both cut sheet and roll paper sizes. This origin is not affected by margin or justification settings.

There are three special values for LABELLOCX: LEADING, TRAILING, and EXTEND. When LABELLOCX is LEADING or TRAILING, the coordinate axis of the physical page is forced to be that of a roll paper size whether the paper is actually a cut sheet or (already) a roll paper size. This exception allows the user to specify that a label be applied to the leading or trailing of a cut sheet page, regardless of whether the print is made short edge or long edge. This (possible) change in coordinate system forced by the value of LABELLOCX affects only label related parameters. When LABELLOCX is EXTEND the user specifies the number of inches to extend the output page in LABELLOCY.

The default values for these variables are LABELLOCX = LEADING and LABELLOCY = BOTTOM.

NOTE: While not specifically prevented by AccXES, it is highly recommended that the folder not be used with the EXTEND option.

5.1.7.2.9 LABELROTATE

This variable specifies the rotation of the label relative to the physical page. Possible values are 0 through 359. The default value is 90. See the PAGEROTATE section, which describes the PAGEROTATE variable for the definition of the coordinate axis of cut sheets and roll paper sizes. Rotation is specified counter-clockwise from the X axis.

Note that when LABELLOCX is LEADING, TRAILING, or EXTEND, the coordinate axis of the physical page is forced to be that of a roll paper size whether the paper is actually a cut sheet or (already) a roll paper size. This exception allows the user to specify that a label be applied to the leading, trailing, or extended edge of a cut sheet page, regardless of whether the print is made short edge or long edge. This (possible) change in coordinate system forced by the value of LABELLOCX affects only label related parameters.

5.1.7.2.10 LABELSHADING

This parameter specifies the label's shading level as a percentage of colorant applied to mark the label. 100% corresponds to pure black and 0% corresponds to blank (white). With 0%, no marks are made on the paper. The label will be rendered with a transparent rendering merge control such that at 50%, for example, the underlying image may be seen "bleeding" through the label. The default value is 100.

5.1.7.2.11 LABELSIZE

This parameter specifies the size of the font used in points. The default value for this parameter is 18 point.

5.1.7.2.12 LABELSTRING

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This is the actual label to be printed. It may contain up to 4096 8-bit characters. The default value for this parameter is the null string which means that no label is applied. Special characters are supported which are delimited by the % character. The pair of the % character and the special character count as two characters towards the maximum string length of the label. See below for a definition of the special characters. If a % character is actually desired, it may be escaped with a second % character immediately following it. For example, the string:

"We want a %% here"

is rendered as:

"We want a % here"

New line, line feed, and tab characters are also supported within label strings as normal. The following special characters may be supported in future releases:

- %d - Prints the date in "month, date, year" format in the selected date format

- %n - Prints the job's name if available, or a null string.

- %p - Prints the job's current page number as a decimal digit.

- %t - Prints the print time in the format 24 hour format.

- %c - Prints a new-line character.

- %x - Prints a double-quote (") character.

An example of the usage of this string is below:

"Page %p of job %n was printed at %t, %d"

This results in the following string printed on the first page of the plot:

"Page 1 of job HarrysJob was printed at 14:30:29, 5/20/1997"

There is also a second category of special characters supported by the labeling feature. These fields have non-null values only when lpr is used over TCP/IP to transmit the job to the server. This feature is used for installations which are not able to insert specific AccXES HP-PJL job control language into each job, but still desire some labeling. The LABELSTRING default value can be set to a string containing these special characters, and thereafter, plots will be automatically labeled without specific job control syntax.

Not all of the fields are supported for all lpr implementations – details depend on the operating system of the client running lpr. If lpr is not used to transmit the file but one of the following special characters is contained in LABELSTRING, then this field will be mapped to a 0 length string. The special characters enabled with lpr are:

- %q - Prints the lpr job queue name.

- %a - Prints the lpr host address.

- %h - Prints the lpr host name.

- %f - Prints the job's filename on the host.

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- %j - Prints the job name provided by the host which may be different than the filename.

- %u - Prints the lpr user name.

5.1.7.2.13 LIGHTNESSADJ

The setting of this variable specifies the relative print lightness desired for multibit grayscale and RGB color vector and raster data.   Range: {-10 - +10}. Default: 0. The default value specifies a nominal print lightness. Increasingly negative values proportionately reduce the lightness of (darkens) the print, while increasingly positive values proportionately increase the lightness of (lightens) the print. In the print tone adjustment process, the lightness adjustment is applied after the contrast (CONTRASTADJ) adjustment. This setting is not applicable to PostScript plots.

The lightness adjustment affects the mid-tone values proportionately more than shadow or highlight tone values. Technically, lightness adjustment differs from brightness adjustment, which adjusts all tone values equally. Tone values rising above the maximum possible tone value or falling below the minimum possible tone value would be clipped.

5.1.7.2.14 LINESCALEMODE

This parameter specifies whether or not to scale pen widths when a user defined scaling parameter is defined. When set to ON, pen widths will scale according to the scale setting. When OFF, pen widths will remain constant regardless of scaling percentage. The default is OFF.

5.1.7.2.15 MARGINBOTTOM/ MARGINLEFT/ MARGINRIGHT/ MARGINTOP

These parameters specify the printable area of a physical sheet of paper. Each of the variables describes the distance from the specified edge of the physical page inward which may not be printed upon. Images may be clipped to maintain this restriction. When calculations for auto size detection, autorotation, label/raster stamp placement, or autoscaling occur, they utilize the printable area of the page as defined by the physical paper size and the value of these variables.

Left and right correspond to low X values and high X values respectively in the coordinate system of the physical page. In sheet paper sizes, the X axis is always the long edge of the paper. As described in PAGEROTATE, the image may be rotated to preserve this definition (occurs when the page is printed long edge first). With roll size papers, the X axis is always the feed direction of the paper.

The image's offset which is specified with the JUSTIFYX and JUSTIFYY variables is measured from the origin of the paper's printable area. This point is specifically determined by MARGINLEFT (for the X coordinate) and MARGINBOTTOM (for the Y coordinate). An example is shown below which demonstrates margins and justification acting together to place an image on the page. Notice that the image is clipped to the printable area defined by the MARGINxx variables.

The MARGINxxx variables can take on values ranging from 0 to 100 inches. The default value is 0.196 inches or 5mm for all variables. Note that due to numeric precision limitations within the printer, the value 0.196 may be represented by a number which is close but not exact. Typically, the actual value is 0.19580078125. This value may vary as a function of the printer's numeric capability precision.

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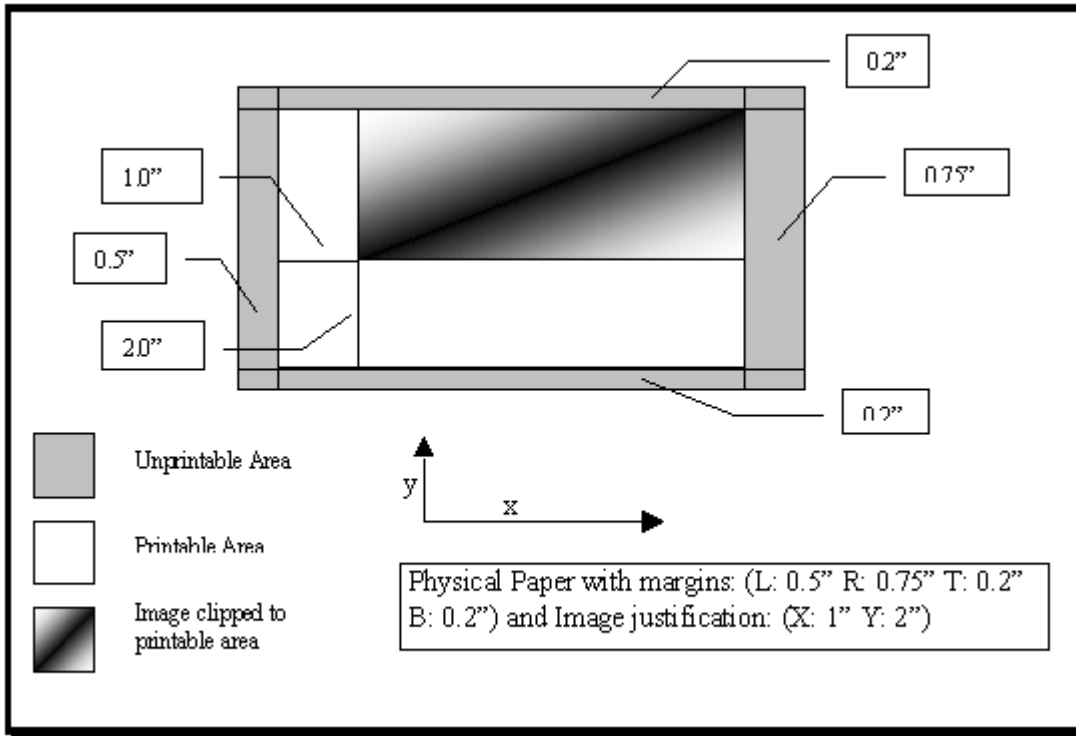
Figure: Margins and Justification

5.1.7.2.16 VECMINLINEWIDTH

This job parameter controlls the minimum width (in pixels) for vector lines. The valid range is from 1 to 10 and the default value is 1.

5.1.7.2.17 TITLEBLOCK

For systems that have a GFI finisher attached, this parameter specifies where the title block is located for the current page. This allows AccXES and/or the finisher to rotate the page as necessary to place the title block in a visible location on the finished output.

5.1.7.2.18 FOLDER_GERA

Gera folder finisher options are encoded in this parameter. This is the folder currently selected for the Rhino 8830 printer. If no finisher options are specified, the printer leaves this field in a Folder Bypass state. The set of options available are {FOLD_BYPASS, FOLD_190, FOLD_210, FOLD_190_MARGIN, FOLD_ANSI_A, FOLD_ARCH_A, FOLD_7HALFX11, FOLD_7HALFX11_MARGIN, FOLD_GFIPROGRAM }.

Note that there are currently defined three Gera folder models. The Configuration Group parameter FINISHERTYPE can denote which folder, if any, is currently attached. The table below shows which folding options above can be used with which folder model.

Table: Gera Folder Configurations vs. Folding Options

Folding Option	Supporting Folder Model
FOLD_BYPASS	All Folders

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FOLD_190	GERA_ISO
FOLD_210	GERA_ISO
FOLD_190_MARGIN	GERA_ISO
FOLD_ANSI_A	GERA_ANSI,
FOLD_ARCH_A	GERA_ANSI_SPECIAL
FOLD_7HALFX11	GERA_ANSI
FOLD_7HALFX11_MARGIN	GERA_ANSI

5.1.7.2.19 FOLDER_OVERLENGTH

When a plot length exceeds the length specified for the folder attached to the printer, this parameter specifies the action. The plot may bypass its folding operation, or it may be sent to the folder anyway for a z-fold operation. The possible values are BYPASS and ZFOLD. The default value is BYPASS.

5.1.7.2.20 FINISHPROGID

When a GFI finisher is attached to the system, this parameter determines which GFI finishing program will be used for the job. This is a string which is 32 characters long and it must exactly match one of the program names found in the @PJL INFO XESFINISHER section of this document. If the name does not exactly match one of the program names or the word "BYPASS", then bypass will be assumed.

5.1.7.2.21 FINISHPROGRAM

Begining in Version 9.0, this parameter, FINISH PROGRAM, is no longer supported.

This parameter may be used as an alternate method of determining which GFI finishing program will be used for the job. Each finishing program outlined in FINISHPROGID is associated with a number from 1 to 20, with 0 being the "BYPASS" program. The mapping from FINISHPROGID to FINISHPROGRAM may be found in the @PJL INFO XESFINISHER section of this document.

5.1.7.2.22 FINISHTABS

Each GFI finishing program has a default value for whether tabs will be used for the finished output. This parameter may be used to override the default value and force the finisher to use tabs, not use tabs, or just use the default specified by the finishing program.

5.1.7.2.23 FINISHPUNCH

Each GFI finishing program has a default value for whether hole punches will be used for the finished output. This parameter may be used to override the default value and force the finisher to use hole punches, not use hole punches, or just use the default specified by the finishing program.

5.1.7.2.24 FINISHMARGINS

Each GFI finishing program has a default value for whether margins will be used for the finished output. This parameter may be used to override the default value and force the finisher to not use margins, or just use the default specified by the finishing program. Note that a user can not force the margins on, only off.

5.1.7.2.25 FINISHCROSSFOLD

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Each GFI finishing program has a default value for whether the finished output will be cross-folded or only fan-folded. This parameter may be used to override the default value and force the finisher to not do a cross-fold, or just use the default specified by the finishing program.

5.1.7.2.26 FINISHBIN

This parameter may be used to specify which bin the finished output will be placed into. Note that if the user does not specify an output bin, the default value of DONTCARE will be used and the finisher will place the output into whatever bin it wants to.

5.1.7.2.27 FINMAXLENGTH

Each GFI finishing program has a maximum length output that it can successfully fold. This parameter may be read in order to determine what the max length limitation is for the currently selected finishing program.

5.1.7.2.28 FININTTITLEBLOCK

This boolean value defaults to TRUE and will be used to indicate that only standard titleblock locations should be considered for orientation of this document. Certain folders can support non-standard titleblock locations for folding.
The trade-off is that when only standard titleblock locations are considered AccXES can identfy improperly specified titleblock corners and still fold the document correctly. If the user specifies the lower right corner as the titleblock location, thinking that the image has a landscape orientation, but the file is actually portrait orientation AccXES will recognize this situation and orient the image correctly (using the lower left corner of the portrait image). If the FININTTITLEBLOCK setting is FALSE in the above case AccXES will use the information that the user gave and orient the lower right corner of the portrait document for folding.

5.1.7.2.29 MEDIASOURCE

Sets the default location of input media for a job. When the value of this parameter is set to AUTO, then the AccXES controller attempts to automatically select the correct roll based on the user requests for this job. Considerations include the paper size (PAPER) desired, the mediatype (MEDIATYPE) desired. This setting is the most desirable setting. For those applications that need finer control over which media roll is used, or if manual feed is desired, the other possibilities are provided. In this case, all other user requests that might influence which roll is selected are overruled. In particular PAPER and MEDIATYPE are ignored and the image is cut to length on the roll specified in MEDIASOURCE. Possible values include:

- AUTO

- TRAY1

- TRAY2

- TRAY3

- ROLL1

- ROLL2

- ROLL3

- ROLL4

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- MANUAL_FD

The default value is AUTO.

5.1.7.2.30 MEDIATYPE

This parameter specifies the paper type selected for printing the page. The possible types are ANY, PAPER, INKJETBOND, PRESENTATIONBOND, VELLUM, and FILM. If the print engine is able to detect the media type, then failure to match media types between that requested by the job and that loaded in the printer may cause a mismatch condition. The default value of this parameter is PAPER.

5.1.7.2.30.1 Release 6.2 MEDIATYPE

The set of valid media types for 6.2 and later release are {PAPER, VELLUM, FILM, PHOTOFILM, OATEDBOND, TRANSPARANCY, INKJET, and
SPECIAL} The default value is PAPER.

5.1.7.2.31 MEDIANAME

This command should be used in place of the MEDIATYPE command starting with AccXES V7.5.

This parameter specifies the paper type selected for printing the page.

The valid strings that may be passed as arguments to this command may be found using the @PJL INFO XESMEDIA command. In addition to those values, a name of "ANY" may also be sent as a media type.

If the print engine is able to detect the media type, then failure to match media types between that requested by the job and that loaded in the printer may cause a mismatch condition.

5.1.7.2.32 MIRRORIMAGE

The set of possible values for this parameter are {MIRROR_OFF, MIRROR_X, MIRROR_Y, MIRROR_XY}. When set to MIRROR_X, the image is transformed such that $x = -x$. When set to MIRROR_Y, the image is transformed such that $y = -y$. Finally, when set to MIRROR_XY, the image is transformed such that $x = -x$ and $y = -y$. Mirror imaging is applied before rotation. The default value is MIRROR_OFF, which means no mirroring transformations are applied.

5.1.7.2.33 OVERSIZEMARGIN

The OVERSIZEMARGIN parameter determines the threshold for rounding the selected media size up to a standard paper size. If one of the dimensions standard media size's printable area is larger than the corresponding dimension of the image (see MARGINxxx parameters for a definition of printable area of a media size) by less than the percentage stored in this parameter, then that dimension is said to be within the oversize margin capture zone. The parameter takes on an integer percentage ranging from 0 to 100%. The default value is 1%.

If both dimensions are captured in one of the undersize or oversize margin capture zones of a media size, then the media size "captures" the image and the media size is selected. Note that this capture zone concept applies only to standard sheet sizes, not roll sizes.

Mathematically, the capture zone concept can be described by the following equation:

$(100\% - \text{undersize})\text{mediaSizeDim} \leq \text{imageDim} \leq (100\% + \text{oversize})\text{mediaSizeDim}$

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Where undersize and oversize represent the percentage values in the undersize margin and oversize margin parameters, respectively. MediaSizeDim and imageDim represent a corresponding dimension of the candidate media size and the image size, respectively.

5.1.7.2.34 PAGECOMPPOSX

This parameter is active only when PAGECOMPENABLE is set ON. It specifies the location of the left hand side (the X coordinate) of a constituent page after the rotation specified in PAGECOMPROTATE has been applied. This location is specified in inches from the left side of the page composition canvas. See the definition for PAGECOMPENABLE for details. The range of this variable is 0 to 1200 inches. The default value is 0 inches.

5.1.7.2.35 PAGECOMPPOSY

This parameter is active only when PAGECOMPENABLE is set ON. It specifies the location of the bottom hand side (the Y coordinate) of a constituent page after the rotation specified in PAGECOMPROTATE has been applied. This location is specified in inches from the bottom side of the page composition canvas. See the definition for PAGECOMPENABLE for details. The range of this variable is 0 to 1200 inches. The default value is 0 inches.

5.1.7.2.36 PAGECOMPROTATE

This parameter is active only when PAGECOMPENABLE is set ON. It specifies the rotation of the associated constituent page. A zero degree value means that the long edge of the constituent page is aligned with the long edge of the canvas. The range of this variable is {0, 90, 180, 270} and the default value is 0.

5.1.7.2.37 PAGEROTATE

The pages described within the user job may be rotated automatically or rotated by a specific amount by the printer before printing. If autorotation is selected, the image is rotated automatically to fit the specified paper's printable area. A paper's printable area is specified with the MARGINxx variables. If the paper specified is a roll (specifying width only), then the image is rotated to print the least amount of paper possible. In other words, the image is rotated to print with the long edge perpendicular to the feed direction if the image won't be clipped to print the shortest amount of paper from the roll. If the paper is specified to be a specific standard paper size, the long edge of the image is rotated to align with the long edge of the specified paper size. The rotation parameter PAGEROTATE will contain one of {0, 90, 180, 270, or AUTO}. The factory default value for this parameter is 0 degrees.

The figures below denote the coordinate systems on roll paper sizes and standard cut sheet paper sizes for a rotation angle of 0 degrees. Rotation is specified in the counter-clockwise direction. In words, 0 degrees rotation is when the X axis is aligned with the long edge of the standard paper size or in the feed direction of a roll size. Note that when a standard paper size is specified which is printed long edge first, the image is rotated 270 degrees to preserve the alignment of the X axis with the long edge of the page. Therefore, whether a page is printed short edge or long edge first, the image placement on the paper will be identical.

AccXES PJL Interface
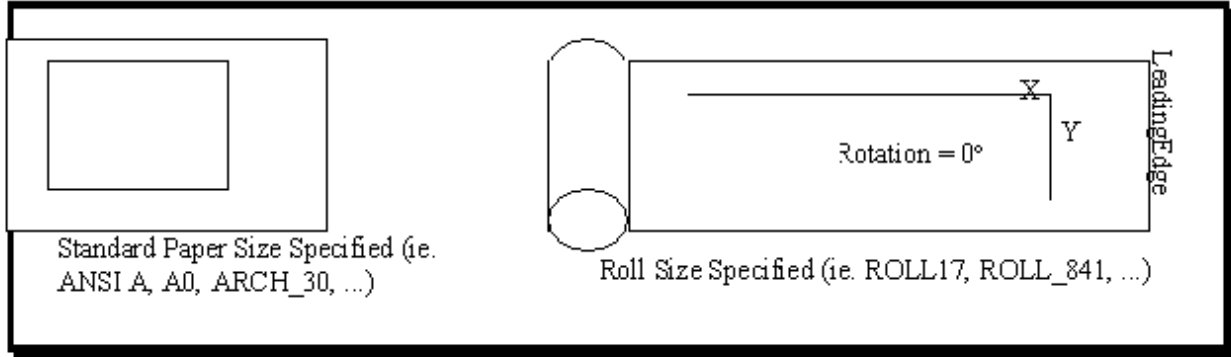
Figure: Image Placement on Paper

5.1.7.2.38 PAGESCALING

The pages described within the user job may be scaled by the printer before printing. If specified, the plots may be autoscaled. In this case, a scale factor is selected after the target paper size has been determined to shape the plot to best fit the printable area of the paper size selected without changing its aspect ratio. Scaling is specified by percent of the original. Note that autoscaling cannot be selected when auto size selection is set in the PAPER variable (values ANY, ANY_ISO, ANY_ANSI, ANY_ARCH, ANY_JIS).

The scaling field will contain AUTO for automatic scaling or the actual scaling factor (as a percentage) specified by the job. The factory default value is 100% scaling.

5.1.7.2.39 PAPER

This parameter sets the paper size to be either a specific standard paper size, a roll size (width specified), or one of the automatic paper size selection modes. This list of possible values is listed below:

Automatic paper size selection modes:

- ANY

- ANY_ANSI

- ANY_ARCH

- ANY_ISO

- ANY_JIS

- ANY_ROLL

Standard paper sizes:

- LETTER

- LEDGER

- ANSI_A

- ANSI_B

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- ANSI_C

- ANSI_D

- ANSI_E

- ARCH_A

- ARCH_B

- ARCH_C

- ARCH_D

- ARCH_E

- ARCH_30

- ISO_A0

- ISO_A1

- ISO_A2

- ISO_A3

- ISO_A4

- ISO_B1

- ISO_B2

- ISO_B3

- ISO_B4

- JIS_B1

- JIS_B2

- JIS_B3

- JIS_B4

Roll Sizes (width specified):

- ROLL_A0

- ROLL_A1

- ROLL_A2

- ROLL_A3

- ROLL_A4

- ROLL_A1+

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- ROLL_A0+

- ROLL_A0++

- ROLL_B1

- ROLL_B2

- ROLL_B3

- ROLL_JIS_B1

- ROLL_JIS_B2

- ROLL_JIS_B3

- ROLL_JIS_B4

- ROLL_750

- ROLL_891

- ROLL_900

- ROLL_8_5

- ROLL_11

- ROLL_17

- ROLL_22

- ROLL_34

- ROLL_30

- ROLL_9

- ROLL_12

- ROLL_18

- ROLL_24

- ROLL_36

- ROLL_14

- ROLL_15

- ROLL_21

- ROLL_38

- ROLL_42

- ROLL_44

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- ROLL_48

- ROLL_50

- ROLL_53

- ROLL_54

The factory default value is ANY.

Note that the values LETTER and ANSI A are identical in function and are treated as interchangeable by the printer. When either LETTER or ANSI A are currently in effect, the value ANSI A will be returned when queried with a PJL DINQUIRE or INQUIRE command. Similarly, LEDGER and ANSI B are identical and ANSI B will be returned.

When a specific standard paper size is selected, the printer will attempt to automatically select the correct available roll in the printer to produce the standard sheet size. Since most of the standard sheet sizes can be printed either long edge or short edge first on one of the standard roll sizes, the printer will rotate the image if necessary to preserve the originally intended rotation.

When a roll is selected as the paper size, the width of the finished print is determined by the roll, and the media is cut to the length of the image plus margins specified in MARGINLEFT and MARGINRIGHT. Note that left corresponds to leading edge and right corresponds to trailing edge in roll paper sizes.

A value of ANY evokes the automatic paper size detection feature. In this case, if the image is "close" to a standard paper size's printable area as described by the OVERSIZEMARGIN and UNDERSIZEMARGIN parameters, this paper size is selected. Otherwise, the best fitting roll is selected and the image is cut to length (including margins as described above).

When ANY_ISO, ANY_ANSI, ANY_ARCH, or ANY_JIS is chosen, the same procedure is used as in ANY except that the possible standard sizes are restricted to the specified family. When ANY_ROLL is selected, the printer will automatically select the best fitting roll size; sheet sizes will not be considered.

5.1.7.2.40 PENPALETTE

This parameter is used to assign a pen palette to an individual file. This parameter, when set to a valid palette name, will override the appropriate palette specifier (HPGLPALETTE, CGMPALETTE, CCPALETTE, or VDSPALETTE). If it is set to an empty string, one of these four variables will supply the name of the palette. It is recommended that PENPALETTE never have its default value changed; it should only be used in @PJL SET commands. Range: String max 32 characters. Default: ""

5.1.7.2.41 PERSONALITY

This field will use an encoded value that specifies the data format of the user job. Example settings would be values representing HPGL/2, CalComp 906/907, PostScript, TIFF 6, CGM, etc.

The HP-PJL ENTER LANGUAGE command is preferably used to specify this parameter in the Current User Job Environment.

The possible values are:

- AUTO

- CALCOMP

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- CALS1

- CALS2

- VDS

- VCGL

- C4

- CGM

- VRASTER

- HPGL2   {Alternately, HP-GL/2}

- HPGL758X   {Alternately, HPGL}

- PCL

- POSTSCRIPT

- TIFF6

- JPEG

- ASCII

- FLASH

- DOWNLOAD

- FILENET

Note that all four HPGL possibilities {HPGL2, HP-GL/2, HPGL758X, and HPGL} currently map to the same data format interpreter: HPGL. The Printer Group parameter HPGLMODE determines whether the file is an HPGL or HPGL/2 file. Note also that HP-RTL maps to this same HPGL data format interpreter.

5.1.7.2.42 QUALITYMODE

This environment variable specifies the printers print quality mode. This variable may be set to FAST, NORMAL, or BEST. Two identical jobs printed at different QUALITYMODE settings will print at different speeds and have different image qualities. The default setting for those printers that support different print qualities is FAST.

5.1.7.2.43 RENDERMODE

This environment variable specifies the color model setting of the printers rendering mechanism. This variable may be set to either COLOR or GRAYSCALE. The default setting is printer model specific (refer to the Xerox AccXES HP-PJL Support by Printer Model section). Some printers support only one render mode.

5.1.7.2.44 UNDERSIZEMARGIN

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The UNDERSIZE parameter determines the threshold for rounding the selected media size up to a standard paper size. If one of the dimensions standard media size's printable area is smaller than the corresponding dimension of the image (see MARGINxxx parameters for a definition of printable area of a media size) by less than the percentage stored in this parameter, then that dimension is said to be within the undersize margin capture zone. The parameter takes on an integer percentage ranging from 0 to 100%. The default value is 2%.

If both dimensions are captured in one of the undersize or oversize margin capture zones of a media size, then the media size "captures" the image and the media size is selected. Note that this capture zone concept applies only to standard sheet sizes, not roll sizes.

Mathematically, the capture zone concept can be described by the following equation:

Where undersize and oversize represent the percentage values in the undersize margin and oversize margin parameters, respectively. MediaSizeDim and imageDim represent a corresponding dimension of the candidate media size and the image size, respectively.

$$(100\% - undersize)mediaSizeDim \leq imageDim \leq (100\% + oversize)mediaSizeDim$$

5.1.7.2.45 USEMARKEDAREA

When PAPER is set to a value for auto size detection (ANY, ANY_ANSI, ANY_ARCH, ANY_ISO, or ANY_JIS), then this parameter determines whether the size of the image used to determine paper size and image placement is taken from the actual bounding box of marks on the page (ON), or specified by data format dependant page size commands if available (OFF).

An example of a page size command is the PS command in HPGL/2. If this parameter is OFF, then the PS command arguments will specify the size of the image, even in the bounding box of the actual image is larger or smaller. Setting this parameter to ON effectively overrides the PS command's sizing with the image's bounding box. Recall that the PS command also specifies a clip window for the page. This functionality is NOT overridden by this variable.

The set of possible values is ON or OFF. The default value is OFF so that the job will specify the intended page size if this information is available.

5.1.7.2.46 VECTORHALFTONEOPT (new for V8, this is now a page parameter)

This parameter allows the user to optimize halftoning vector graphics based objects. There are two values currently: LINE and AREAFILL. When LINE is selected, fine line rendering is prioritized in the screening methodology. Fully stochastic screens are selected to reduce the amount of "aliasing" in the screens with the relatively small feature size of fine lines. When AREAFILL is selected, wide area fills (polygon fills) are prioritized. A more even clustered dot halftone screen is utilized to provide a uniform filled area. This parameter does NOT affect image or raster data halftoning operations. The factory default value is AREAFILL.

5.1.8 Printer State Class

This class of parameters actually record the state of the printing system. Three groups are defined to specify the state: the Marking Engine, Media, and ESS Groups.

5.1.8.1 Marking Engine Group

The current state of the marking engine is encoded in this state variable group.

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5.1.8.1.1 ENGINELANG1/ENGINELANG2

Some marking engines such as the Xerox 8830 support menu structures and other user messages on the printer's front panel in addition to those provided by the controller for the print engine. These two parameters store the primary and secondary languages that the marking engine is capable of supporting. This variable takes on the same values as in the LANG parameter of the Printer Group.

5.1.8.1.2 ENGINESTATE

The state of the marking engine is stored in this variable. It takes on one of the following values: {IDLE , PRINTING, ERROR, WARMING, INIT, LINK DOWN}. The ERROR state take precedence over the PRINTING state; if the marking engine is in the middle of a print job and jams, the marking engine will move to an ERROR state, even though the print operation has not yet completed.

The lINK DOWN state only applies to remote printers like the 6030 and 6050 where the AccXES Controller is acting like a Print Server.

5.1.8.1.3 ENGINEMAXPLOTLENGTH

The maximum plot length that is supported by the marking engine is stored in this variable. Note that some of the marking engines supported by AccXES report this value at run-time based upon the IOT configuration.

5.1.8.1.4 FINISHERSTATE

The state of the finisher is stored in this variable. It takes on one of the following values: {READY, ERROR, BYPASS}. The ERROR state indicates some condition that should be cleared before folding operations can proceed. The BYPASS state indicates that …

5.1.8.2 Media Group

The media status of the printer is detailed in this group. This includes the toner levels, the number and type of trays and rolls in the printer, and the size and type of the media loaded.

5.1.8.2.1 COLORANT<n>ELEMENTUSED

These variables indicate the percent of a cartridges print elements (i.e. print head) used. The values range from 0 to 100. Valid values for "n" are 1 to 4.

5.1.8.2.2 COLORANT<n>TYPE

This collection encodes the colorant type currently installed in the printers cartridge "n", where "n" may range from 1 to 4. The possible values are: {CARTRIDGE_ABSENT, CARTRIDGE_BLACK, ARTRIDGE_CYAN, CARTRIDGE_MAGENTA, CARTRIDGE_YELLOW}.

5.1.8.2.3 COLORANT<n>USED

These variables specify the percent of cartridge number "n", s colorant (ink, toner, etc.) used. The valid range for "n" is 1 to 4. The variable value may range from 0 to 100.

5.1.8.2.4 INTRAY<n>SIZE

This collection encodes the size of the paper currently loaded in tray "n" in the printer. See the PAPER environment variable in the Job Processing Group for a list of valid sizes which this variable can take.

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5.1.8.2.5 INTRAY<n>TYPE

This collection of variables encodes the type of media currently loaded in tray "n" in the printer. See the MEDIATYPE variable for a list of legal values.

5.1.8.2.6 INTRAY<n>STAT

This collection of variables encodes whether the tray is defined in the printer, and if so, whether it is present and contains media, present but running low on media, or present but empty. The possible values are: {NONE, FULL, LOW, EMPTY}.

5.1.8.2.7 INROLL<n>SIZE

INROLL<n>SIZE details the width of the roll of media loaded onto roll "n" in the printer. See the PAPER environment variable in the Job Processing Group for a list of valid sizes which this variable can take.

5.1.8.2.8 INROLL<n>TYPE (prior to V7.5)

INROLL<n>TYPE will reflect the media type loaded onto roll "n" in the printer. Refer to the variable MEDIATYPE for possible values.

5.1.8.2.9 INROLL<n>TYPE (V7.5 and later)

INROLL<n>TYPE will reflect the media type loaded onto roll "n" in the printer.

The valid strings that may be returned from this command may be found using the @PJL INFO XESMEDIA command.

5.1.8.2.10 INROLL<n>STAT

This collection of variables encodes whether the roll is defined in the printer, and if so, whether it is present and contains media, present but running low on media, or present but empty. The possible values are: {NONE, FULL, LOW, EMPTY}.

5.1.8.2.11 MANUALSIZE

MANUALSIZE details the width of the roll of media loaded manual feed port of the printer. Currently, the engine reports ROLL_36 always, regardless of what is actually installed.

5.1.8.2.12 MANUALTYPE

MANUALTYPE will reflect the media type loaded in the manual feed port of the printer. Refer to the variable MEDIATYPE for possible values.

5.1.8.2.13 MANUALMEDIA

This command should be used in place of the MANUALTYPE command starting with AccXES V7.5.

MANUALMEDIA will reflect the media type loaded in the manual feed port of the printer.

The valid strings that may be returned from this command may be found using the @PJL INFO XESMEDIA command.

5.1.8.2.14 MANUALSTAT

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This collection of variables encodes whether the roll is defined in the manual feed port of the printer, and if so, whether it is present and contains media, present but running low on media, or present but empty. The possible values are: {NONE, FULL, LOW, EMPTY}.

5.1.8.3 Configuration Group

This parameter group stores values that describe the configuration of the printer. There are variables recording the presence of mass storage devices, communication options, memory configurations, etc. All of the variables in this group are read only.

5.1.8.3.1 CDROMPRESENT

This variable is TRUE when there is a CD ROM drive attached and available to the printer controller.

5.1.8.3.2 ESSSWREV

This string variable will store the current software revision of the printer controller.

5.1.8.3.3 FDDPRESENT

This variable is TRUE when a floppy drive attached and available to the printer controller.

5.1.8.3.4 FINISHERTYPE

This variable stores the type of finishing device currently attached and available to the printer. The value is NONE if there is not a finisher device.

5.1.8.3.5 HDDPRESENT

This variable is TRUE when a hard disk drive is attached and available to the printer controller.

5.1.8.3.6 IOTSWREV

This string variable will store the current software revision of the marking engine firmware (which is distinct from the printer controller software).

5.1.8.3.7 MODEMPRESENT

This variable is TRUE when there is a telephone modem attached and available to the printer controller.

5.1.8.3.8 NICHWADDR

This string variable will contain the Ethernet or Token ring hardware address of the network interface card if one is present. The variable NICTYPE can be queried to determine the presence of a network interface card.

5.1.8.3.9 NICSWREV

This string variable will store the current software revision of the network interface card if one is present.

5.1.8.3.10 NICTYPE

This variable will indicate which, if any, network interface card is currently attached and available to the printer controller.

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5.1.8.3.11 PRINTERNAME

This string variable is used as the commercial identification of the printer model. This value is used in the INFO ID response, on printer test prints, and in many other interfaces to the printer.

5.1.8.3.12 RAMSIZE

This variable holds the number of bytes of RAM that the printer controller is currently configured with.

5.1.8.3.13 SCANNERTYPE

This variable indicates which, if any, scanner is currently attached and available to the printer controller.

5.1.8.4 ESS Group

This group contains read only variables which detail the state of the printer controller itself.

5.1.8.4.1 PJL Status

This state variable has no PJL environment variable associated with it. It holds the current value of the six digit HP-PJL status code. HP-PJL USTATUS DEVICE responses will be sent with this code every time this status changes on all ports for which USTATUS DEVICE is enabled.

5.1.8.4.2 ESSSTATE

This state variable holds the processing state of the ESS. Possible states include:

- IDLE

- PROCESSING

- PRINTING

- ERROR

- INIT

- OPINTERVENTION

- PAUSED

When there is no activity in the ESS, the ESS is in the IDLE state. When the printing begins downloading a job and the user job is scheduled and begins processing, the state moves to PROCESSING. And clearly, when the first page of the job begins printing, the state should move to PRINTING. If there are multiple jobs in the system, the most "mature" state takes precedence. For example, if a job is processing and another is printing, the ESS State is PRINTING.

The ERROR state is entered when the ESS is currently experiencing an error which prevents it from processing jobs. Such errors might include a firmware error, a hardware error, or non-communication with the printer engine. The INIT state is used as the printer and ESS are booting. The OPINTERVENTION state is entered when the printer requires operator intervention to proceed, such as when manual feed media needs to be loaded, when a media mismatch condition occurs, or when a response is required from the user to proceed in processing a job.

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The PAUSED state is entered when further printing is restricted. This state may be entered as a result of a printer front panel interaction, or in response to a HP-PJL OPMSG command. Pressing a "continue" or "on-line" key on the front panel will usually allow a transition out of this state.

6 INFO Command Responses

The AccXES printer supports all categories of the standard HP-PJL INFO command and several AccXES extensions. The sections below detail the exact response structure to each of the INFO categories.

6.1 ID

This ID category provides a way to identify the printer. The response defined for AccXES printers is:

@PJL INFO ID

"<printer name> <release #>"

<FF>

In the above, <printer name> is the official product name of the AccXES printer, and <release #> corresponds to a software release number.

6.2 CONFIG

This category returns a listing of the printer's current configuration. Only variables which have real features associated with them will appear in a specific printers INFO CONFIG response. The generic response is detailed below:

@PJL INFO CONFIG

IN TRAYS [N ENUMERATED]

      INTRAY1

      ...

IN ROLLS [N ENUMERATED]

      INROLL1

      ...

PAPERS [N ENUMERATED]

      A0

      E

      ...

LANGUAGES [N ENUMERATED]

      HPGL2

      TIFF 6

      POSTSCRIPT

      ...

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USTATUS [3 ENUMERATED]

DEVICE

JOB

PAGE

MEMORY=<decimal number of bytes total RAM>

DISPLAY LINES=2

DISPLAY CHARACTER SIZE=40

MASS STORAGE [3 ENUMERATED]

HARD DISK 1.6GB

CD ROM

FLOPPY DRIVE

SCANNER TYPE={NONE, TYPENAME}

FOLDER TYPE={NONE, TYPENAME}

MODEM={NONE, PRESENT}

<FF>

6.3 FILESYS

The INFO FILESYS command returns the following information for each volume initialized one the PJL file system:

Total Capacity

Free Space

Location

Volume Label

Volume Read/Write status

The response for systems without a defined file system accessible by PJL or one without a mass storage device is:

@PJL INFO FILESYS

"?"

<FF>

For those printers with a defined file system accessible by HP-PJL, the response is:

@PJL INFO FILESYS [2 TABLE]

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VOLUME	TOTAL SIZE	FREE SPACE	LOCATION	LABEL	STATUS
0:	2147483648	1123123123	\<HorzTab\>	"FONT"	READ-WRITE

\<FF\>

6.4 MEMORY

This command details the amount of RAM loaded into the printer. The response is:

@PJL INFO MEMORY

TOTAL=\<decimal number of bytes total RAM\>

LARGEST=\<TBD\>

\<FF\>

TOTAL indicates the total amount of DRAM in the system. LARGEST is currently set to be identical in value to TOTAL.

6.5 PAGECOUNT

This category yields the media usage of the printer since it was manufactured. The response may come in one of two forms, roll-fed or page-based. For roll fed printers, the printer returns the number of linear feet and the area usage. The response defined for this case is shown below.

@PJL INFO PAGECOUNT

LINEARFEET=\<Linear feet of printed media\>

SQUARE METERS=\<Number of square meters of printed media\>

\<FF\>

 The response defined for this INFO PAGECOUNT command in page-based printers is:

@PJL INFO PAGECOUNT

PAGECOUNT=\<Number of pages printed\>

\<FF\>

6.6 STATUS

This category will return the current PJL Status code of the finisher, IOT, and Controller, a textual message corresponding to the status, and the on-line status. The Status code variable is in the Printer State Class/ESS Group of the AccXES environment variables. It corresponds directly with the 5 digit status codes supported by the standard HP-PJL language. Many additional status codes for AccXES printers are also defined. See the Status Codes section for a listing of the supported status codes. The defined response for this command is:

@PJL INFO STATUS

CODE=10001

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DISPLAY="IDLE"

ONLINE=TRUE

<FF>

6.7 VARIABLES

This INFO command returns a list of the environment variables available in the AccXES printer, along with their current settings and possible values. The proper response is:

@PJL INFO VARIABLES

<Variable Name>=<current value> [<num items> <item types> <read only?>]

  <value 1>

  <value 2>

  ...

<FF>

See page 7-27 in [HP96] for an example response.

6.8 USTATUS

The USTATUS command's supported modes are reported with the INFO USTATUS command. Note that TIMED is not currently supported by AccXES printers. Further, this info category itself is not supported in printers which do not support USTATUS. An example response to an INFO USTATUS command is:

@PJL INFO USTATUS

DEVICE=OFF [3 ENUMERATED]

  OFF

  ON

  VERBOSE

JOB=OFF [2 ENUMERATED]

  OFF

  ON

PAGE=OFF [2 ENUMERATED]

  OFF

  ON

<FF>

6.9 XESACCOUNTING

This category is a custom AccXES extension to report job accounting information.

6.9.1 Command Syntax (pre 6.2)

The syntax for the XESACCOUNTING command is:

@PJL INFO XESACCOUNTING [ACCTNUM=<account #> SUBACCTNUM=<subaccount #>]
[UNITS=<units>]

The optional fields ACCTNUM and SUBACCTNUM specify an account to be reported.

If the specified SUBACCTNUM is zero, then the report will contain the accounting information on all
the subaccounts for the parent account specified in ACCTNUM. This request must be accompanied by a
valid password.

If the optional ACCTNUM and SUBACCTNUM fields are not present in the command, then the report
will contain the accounting information on all the accounts in the system. This request must be
accompanied by a valid password.

The optional UNITS field may be specified as either 'FT' or 'DM' for report values in square feet or
decimeters respectively.

6.9.2 Returned Status (pre 6.2)

After parsing the XESACCOUNTING command, the controller will echo the command, a listing of the
accounts and media values, and a form-feed back on the sending channel as shown below:

@PJL INFO XESACCOUNTING ACCTNUM=<account #> SUBACCTNUM=<subaccount #>
UNITS=<units>

ACCOUNT#	SUB-ACCOUNT#	BOND	VELLUM	FILM	SCAN
<acct #>	<subacct #>	<area #>	<area #>	<area #>	<area #>

<FF>

 If the command generates an error, the controller will echo the command, the appropriate status, and a
form-feed as shown below:

@PJL INFO XESACCOUNTING ACCTNUM=<account #> SUBACCTNUM=<subaccount #>

STATUS=<status>

<FF>

Possible status values are:

- STATUS = No Hard Disk - Accounting Disabled

- STATUS = invalid Password

- STATUS = invalid ACTION

- STATUS = invalid Account/SubAccount Num.

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- STATUS = invalid UNITS

- STATUS = error parsing ACTION

- STATUS = error parsing ACCTNUM

- STATUS = error parsing SUBACCTNUM

- STATUS = error parsing BOND

- STATUS = error parsing VELLUM

- STATUS = error parsing FILM

- STATUS = error parsing SCAN

- STATUS = UNITS error, Using default units, DM.

- STATUS = error parsing UNITS

- STATUS = Account(s) reset

- STATUS = RESET error

- STATUS = Account(s) deleted

- STATUS = CREATE error

- STATUS = Account created

- STATUS = DELETE error

- STATUS = Account(s) deleted

- STATUS = RESTORE error

- STATUS = Account(s) restored

- STATUS = Accounting Disabled

- STATUS = UNITS required for restore

- STATUS = Max Accts exceeded

- STATUS = Max Subaccts exceeded

- STATUS = pjlErr in procXesAccounting

- STATUS = INFO error

6.9.3 Release 6.2 Returned Status

This command is no longer supported in Release 6.2. In response to this command, the controller will send the following legacy error message back on the sending channel:

Accounting is Disabled.

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6.10 Job Accounting Status

The following PJL command can be used to obtain the status for the Job Accounting feature.

@PJL INFO JOB_ACCOUNTING

After parsing this command the controller will echo the command, output the reply to the command, followed by a form-feed, on the back channel as shown below:

@PJL INFO JOB_ACCOUNTING

JBA_ACCT_VERSION=ESS SW REV=6.2.00:100

JBA_RECORD_LIMIT=[1 – 15000]

JBA_ACCT_MODE=[ENABLED, DISABLED,OPTIONAL]

JBA_ACCT_DISABLE_SERVER_LOG_FULL=[FALSE,TRUE]

JBA_ACCT_INFO=[FALSE,TRUE]

JBA_DEVICE_NAME=[FALSE,TRUE]

JBA_COMPLETION_TIME=[FLASE,TRUE]

JBA_JOB_NAME=[FALSE,TRUE]

JBA_FINISHING=[FALSE,TRUE]

JBA_COMPLETED_REASON=[FALSE,TRUE]

JBA_JOB_COPIES_COMPLETED=[FALSE,TRUE]

JBA_MEDIA_SHEETS_COMPLETED=[FALSE,TRUE]

JBA_MEDIA_BLOCK_1=[FALSE,TRUE]

JBA_MEDIA_BLOCK_2=[FALSE,TRUE]

JBA_MEDIA_BLOCK_3=[FALSE,TRUE]

JBA_MEDIA_BLOCK_4=[FALSE,TRUE]

JBA_MEDIA_BLOCK_5=[FALSE,TRUE]

JBA_MEDIA_BLOCK_6=[FALSE,TRUE]

JBA_MEDIA_BLOCK_7=[FALSE,TRUE]

JBA_MEDIA_BLOCK_8=[FALSE,TRUE]

JBA_MEDIA_BLOCK_9=[FALSE,TRUE]

JBA_MEDIA_BLOCK_10=[FALSE,TRUE]

JBA_MEDIA_BLOCK_N=[FALSE,TRUE]

AccXES PJL Interface

JBA_TOAL_SIMPLEX_SHEETS=[FALSE,TRUE]

JBA_IMAGE_BLOCK_1=[FALSE,TRUE]

JBA_IMAGE_BLOCK_2=[FALSE,TRUE]

JBA_IMAGE_BLOCK_3=[FALSE,TRUE]

JBA_IMAGE_BLOCK_4=[FALSE,TRUE]

JBA_IMAGE_BLOCK_5=[FALSE,TRUE]

JBA_IMAGE_BLOCK_6=[FALSE,TRUE]

JBA_IMAGE_BLOCK_7=[FALSE,TRUE]

JBA_IMAGE_BLOCK_8=[FALSE,TRUE]

JBA_IMAGE_BLOCK_9=[FALSE,TRUE]

JBA_IMAGE_BLOCK_10=[FALSE,TRUE]

JBA_IMAGE_BLOCK_N=[FALSE,TRUE]

JBA_NET_DEST_1=[FALSE,TRUE]

JBA_NET_DEST_2=[FALSE,TRUE]

JBA_NET_DEST_3=[FALSE,TRUE]

JBA_NET_DEST_4=[FALSE,TRUE]

JBA_NET_DEST_5=[FALSE,TRUE]

JBA_NET_DEST_6=[FALSE,TRUE]

JBA_NET_DEST_7=[FALSE,TRUE]

JBA_NET_DEST_8=[FALSE,TRUE]

JBA_NET_DEST_9=[FALSE,TRUE]

JBA_NET_DEST_10=[FALSE,TRUE]

JBA_NET_DEST_N=[FALSE,TRUE]

JBA_JOB_TYPE[=[FALSE,TRUE]

JBA_JOB_IDENTIFIER=[FALSE,TRUE]

JBA_TOTAL_IMAGES_FILED=[FALSE,TRUE]

JBA_MACHINE_NAME=XX-XX-XX-XX-XX-XX

JBA_EAS_LINKED=[NO,YES]

JBA_ERROR_STATUS=[NONE,DISK_FULL,RECORD_LIMIT_REACHED]

AccXES PJL Interface

JBA_RECORD_COUNT=[0 – 15000]

JBA_DISK_USED=[0 – 100]%

JBA_FEATURE_KEY_STATUS=[N/A,STANDARD,NOT_PRESENT, PRESENT]

<FF>

Where,

The values or ranges listed in the [ ] indicate possible values or range of values for the indicated parameter.

The JBA_ACCT_VERSION parameter value represents an example string value based on the AccXES controller firmware version and build number, 6.2.00:100. Note that the actual JBA_ACCT_VERSION parameter string value displayed may be different due to different controller firmware version and build numbers.

The JBA_MACHINE_NAME, XX-XX-XX-XX-XX-XX, is the 20-character JBA machine name which defaults to the Advanced Network Card MAC address.

NOTE: The JBA_ACCT_VERSION string is based on the installed firmware, and while this example is representative of the string, the actual string values may be different.

NOTE: Parameters in the groups JBA_MEDIA_BLOCK, JBA_IMAGE_BLOCK, *and* JBA_NET_DEST *are treated as single groups. If the state of one of the parameters in one of the three groups is modified, all parameters in the group are changed to the new state.*

6.11 XESFONTS

This category is a custom AccXES extension to report the names, sizes, and permissions of all font printer objects currently resident in the printer. The defined response is:

@PJL INFO XESFONTS

R/W	DELETE	SIZE	OBJECT NAME	FONT NAME
{TRUE│FALSE}	{TRUE│FALSE}	byteCount1	FontObjName1	FontName1
{TRUE│FALSE}	{TRUE│FALSE}	byteCount2	FontObjName2	FontName2
...				
{TRUE│FALSE}	{TRUE│FALSE}	byteCountN	FontObjNameN	FontNameN

<FF>

FontObjNameN is the name of the Nth font object. FontNameN, the name of the font inside the Nth font object, is specified in the FONT NAME field. The R/W field is TRUE when this object is readable and writeable. It is FALSE when the object is read only. The DELETE field is TRUE if the object can be deleted from the system entirely. It is FALSE if not. Note that an object can be writeable, but not deleteable.

The byteCountN field describes how many bytes the object consumes in the printer's memory. When uploaded, the object may be converted into another format which may result in changing the number of bytes required.

AccXES PJL Interface

6.12 XESPALETTES

This category is a custom AccXES extension to report the names, sizes, and permissions of all palette printer objects currently resident in the printer. The defined response is:

@PJL INFO XESPALETTES

R/W	DELETE	SIZE	OBJECT NAME
{TRUE|FALSE}	{TRUE|FALSE}	byteCount1	PaletteName1
{TRUE|FALSE}	{TRUE|FALSE}	byteCount2	PaletteName2
...			
{TRUE|FALSE}	{TRUE|FALSE}	byteCountN	PaletteNameN

<FF>

PaletteNameN is the name of the Nth palette object. This is the name used to reference this palette in various environment variables such as HPGLPALETTE. The R/W field is TRUE when this object is readable and writeable. It is FALSE when the object is read only. The DELETE field is TRUE if the object can be deleted from the system entirely. It is FALSE if not. Note that an object can be writeable, but not deleteable.

The byteCountN field describes how many bytes the object consumes in the printer's memory. When uploaded, the object may be converted into another format which may result in changing the number of bytes required.

6.13 XESPATTERNS

This category is a custom AccXES extension to report the names, sizes, and permissions of all pattern printer objects currently resident in the printer. The defined response is:

@PJL INFO XESPATTERNS

R/W	DELETE	SIZE	OBJECT NAME
{TRUE|FALSE}	{TRUE|FALSE}	byteCount1	PatternName1
{TRUE|FALSE}	{TRUE|FALSE}	byteCount2	PatternName2
...			
{TRUE|FALSE}	{TRUE|FALSE}	byteCountN	PatternNameN

<FF>

PatternNameN is the name of the Nth pattern object. This is the name referenced in a palette's name field when a pattern is used. The R/W field is TRUE when this object is readable and writeable. It is FALSE when the object is read only. The DELETE field is TRUE if the object can be deleted from the system entirely. It is FALSE if not. Note that an object can be writeable, but not deleteable.

The byteCountN field describes how many bytes the object consumes in the printer's memory. When uploaded, the object may be converted into another format which may result in changing the number of bytes required.

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6.14 XESPENPALETTE (obsolete)

This category is a custom AccXES extension to report on the content of each of the pen palettes in the printer. Future implementations of this command may allow an option after the keyword XESPENPALETTE to specify the name of the pen palette for the report. In the current implementation, ALL pen palettes will be reported. The defined response is:

@PJL INFO XESPENPALETTE

NAME="<Pen Palette Name>"

       NUMPENS=<# pens in palette> [2 RANGE]

           <# of first pen>

           <# of last pen>

       <width>,<color>,<pattern#>

       <width>,<color>,<pattern#>

       ...

NAME="<Pen Palette Name>"

       NUMPENS==<# pens in palette> [2 RANGE]

           <# of first pen>

           <# of last pen>

       <width>,<color>,<pattern#>

       <width>,<color>,<pattern#>

       ...

<FF>

The "<Pen Palette Name>" option in the response specifies the name of the palette as a string for the data following. The NUMPENS statement and the following two lines detail the number of pens in the current palette and the number of the first and last pen. For example, a 256 entry pen palette with pen numbers ranging from 0 to 255 would be reported as:

       NUMPENS=256 [2 RANGE]

           0

           0

For each pen in the current palette, a triplet is reported. The first number specifies the width of the pen in a floating point number with dimensions of mm. The second number in the triplet specifies the pen color with three color components ranging in value from 0 to 255 which determine the Red, Green, and Blue values of the color, respectively. The formula for the color is:

<color> = (<red> * (2^{16})) + (<green> * (2^{8})) + <blue>

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The last number in the triplet specifies the index of the printer resident pattern assigned to the pen in the form of an integer.

6.15 XESRASTERSTAMPS

This category is a custom AccXES extension to report the names, sizes, and permissions of all raster stamp printer objects currently resident in the printer. The defined response is:

@PJL INFO XESRASTERSTAMPS<CR><LF>

R/W	DELETE	SIZE	OBJECT NAME
{TRUE|FALSE}	{TRUE|FALSE}	byteCount1	StampName1
{TRUE|FALSE}	{TRUE|FALSE}	byteCount2	StampName2
...			
{TRUE|FALSE}	{TRUE|FALSE}	byteCountN	StampNameN

<FF>

StampNameN is the name of the Nth raster stamp object. The stamp may be referenced using this name when specifying the stamp for a job. The R/W field is TRUE when this object is readable and writeable. It is FALSE when the object is read only. The DELETE field is TRUE if the object can be deleted from the system entirely. It is FALSE if not. Note that an object can be writeable, but not deleteable.

The byteCountN field describes how many bytes the object consumes in the printer's memory. When uploaded, the object may be converted into another format which may result in changing the number of bytes required.

6.16 XESQUEUE

This category is a custom AccXES extension to the standard HP-PJL set of INFO categories. It reports on the job queue inside the AccXES printer. The defined response is:

```
@PJL INFO XESQUEUE
USERJOBID=<User Job ID number>
        NAME="<JOB Name>"
        STATE="<Job Processing State>"
        PRIORITY=<Job Priority>
        DATAFORMAT="<Data format Name>"
        SIZE=<Current Job Size in bytes>
        PORT="<Port Name>"
        OWNER="<Owner Name>"
USERJOBID=<Next User Job ID number>
        ...
<FF>
```

The job's user ID is an integer number assigned by the AccXES printer when it first receives the user job over one of its host ports. The number is guaranteed to be unique to that printing system for at least as long as the job is being queued, processed, or printed in the printer.

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The NAME variable is the value of the JOB NAME parameter if one was given. If not, then the string is a null string. The STATE variable encodes the state of the job. Possible states are listed below:

- DONE

- ACTIVE

- SUBMITTING (6030 and 6050 only)

- SUBMITTED (6030 and 6050 only)

- CANCELLED

- CANCELLING

- MISMATCHQUEUED

- MISMATCHBLOCKED

PRIORITY is an integer number representing the scheduling priority of the job. Higher numbers indicate higher scheduling priority. DATAFORMAT is the data format of the job. See the environment variable PERSONALITY for the list of possible values. SIZE is the size of the job in bytes. This number may not be accurate until the job has completely downloaded.

PORT is one of the following values representing the host interface over which the job was transmitted.

- SERIAL

- PARALLEL

- VPI

- SCSI

- ETHERNET

NETWORK indicates the Milan NIC plug-in network card; ETHERNET indicates the on-board Ethernet port. UNKNOWN indicates an error in identification

- UNKNOWN

- INTERNAL

- SCANNER

The owner is the string value of the OWNER environment variable associated with the job. It is intended to reflect a string identifying who sent the job.

- NETWORK

Jobs are listed in the order in which they will print. The job currently printing is listed first.

6.17 XES_SYS_STAT

AccXES PJL Interface

This category reports on the generic system state of the ESS and print engine. It details the currently printing job (if any) and the overall system state. The response defined for this INFO XES_SYS_STAT command is:

@PJL INFO XES_SYS_STAT

USERJOBID=<User Job ID>

NAME="<JOB Name>"

PAGE=<Page Number>

COPY=<Copy Number>

STATE=<State>

<FF>

The USERJOBID and NAME fields denote the user job ID and name field (if available from the JOB command) of the currently printing job, if any. PAGE displays the page number of the page currently printing and COPY is the copy number. Note that if electronic collation is on, PAGE increments faster than COPY. If collation is off, then COPY increments faster than page. If no job is currently printing, then USERJOBID, NAME, PAGE, and COPY fields are empty. In the case of Plot Nesting with Exclusive Mode, or Plot Nesting a multi-copy collated job, PAGE displays the number of the "NEST PAGE" (physical page) currently printing. In all other Plot Nesting cases, PAGE and COPY will display 0.

The STATE field is a snapshot of the ESSSTATE Environment variable in the ESS Group. Its valid values are {IDLE, PROCESSING, PRINTING, ERROR, OPINTERVENTION, INIT, PAUSED}. Note that OPINTERVENTION is displayed during media mismatch or manual feed operations.

6.18 XESFEATURES

This category is a custom AccXES extension to report the status of software features as enabled or disabled. The defined response is:

@PJL INFO XESFEATURES

POSTSCRIPT=<Feature Status>

SCAN_TO_NET=<Feature Status>

JOB_ACCOUNTING=<Feature Status>

SCANNER_SPEED_ENHANCEMENT=<Feature Status>

SCANNER_COLOR=<Feature Status>

PRINTING=<Feature Status>

COPYING=<Feature Status>

VERSATEC_RASTER=<Feature Status>

VCGL=<Feature Status>

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CGM=<Feature Status>

SCAN_TO_PRINT=<Feature Status>

IOT_7D=<Feature Status>

IOT_10D=<Feature Status>

IOT_2DRAWER=<Feature Status>

IOT_3DRAWER=<Feature Status>

<FF>

The Feature Status contains the status of the feature: ENABLED, or DISABLED. An exception is SCANNER_SPEED_ENHANCEMENT which contains NORMAL, TURBO_II, TURBO_III, or DISABLED. The value DISABLED is displayed when the connected scanner device does not support the speed enhancement feature (ex. Vidar) or if there is no scanner attached at all. In order to be enabled a software license for the feature must be present (if required) and the minimum hardware configuration to support the feature must be present.

6.19 XESFINISHER

This category is a custom AccXES extension to report the capabilities of the currently attached finisher. The defined response is:

@PJL INFO XESFINISHER

MODEL = < GFI Model Number (string)>

VERSION = < GFI Interface Level (string) >

NUMPROGRAMS = < Number of GFI Finishing Programs (integer) >

NUMBINS = < Number of bins (integer) >

FANFOLDS = < This list is a superset of all possible values >

 OTHER

NONE

 FULL_FRONT_END_LEFT

 FULL_BACK_END_LEFT

 FULL_FRONT_AND_BACK_END_LEFT

 TOP_PANEL_BINDING

 MIN_COMP_HALF_BACK

 MIN_COMP_INTERNAL

 MIN_COMP_ENDLESS

AccXES PJL Interface

CROSSFOLDS = < This list is a superset of all possible values >

OTHER

NONE

Z_BACK_FROM_TOP

Z_FORWARD_FROM_TOP

Z_BACK_FROM_BOTTOM

Z_FORWARD_FROM_BOTTOM

C_BACK_FROM_TOP

C_FORWARD_FROM_TOP

C_BACK_FROM_BOTTOM

C_FORWARD_FROM_BOTTOM

WALLET

RESERVED

PUNCH = < This list is a superset of all possible values >

NONE

OTHER

PUNCH_2

PUNCH_3

PUNCH_4

TAB = < This list is a superset of all possible values >

NONE

OTHER

TABS

REINFORCEMENT_STRIP

MINMARGIN = < minimum margin length (mm) >

MAXMARGIN = < maximum margin length (mm) >

FINISHPROGRAMS [UP TO 20 DEFINED]

AccXES PJL Interface

NAME FANFOLD CROSSFOLD WIDTH LENGTH MARGIN PUNCH TAB BINS (cont'd below)

<name> <fanfold> <crossfold> <width> <length> <margin> <punch> <tab> <bins>(cont'd below)

MAXLENGTH SHEETDELIVERY TITLE EDGE

<maxlength> <sheetdelivery> <title> <edgepreference>

<FF>

Where the following are defined:

< GFI Model Number > is the model number string.

< GFI Interface Level > is a string specifying the version of GFI specification compliance that the attached finishing device supports.

< Number of GFI Finishing Programs > is the number of folder programs supported by the attached finisher. Range: 0 to 20

< Number of bins > is the number of bins that the finisher supports. Valid range is 1 to 13. Note that bin 0 is a "don't care" value that will use any available finisher bin, bin 14 is the fanfold output bin, and bin 15 is the bypass bin.

FANFOLDS defines which fan-fold styles are supported by the attached finisher.

CROSSFOLDS defines which cross-fold styles are supported by the attached finisher.

PUNCH defines which punch styles are supported by the attached finisher

TAB defines which tab styles are supported by the attached finisher

< minimum margin length > and < maximum margin length > specify the range of valid margin lengths that are supported by the finisher (in millimeters). A length of zero is always valid and should not be included in the definition of this range.

< name > is the GFI Program Description, which is a string of up to 32 characters (using the ISO Latin1 character set) containing the text string description of the folding program.

< fanfold > is the fanfold style for the program. It will be one of the enumerated values defined under FANFOLDS above.

< crossfold > is the crossfold style for the program. It will be one of the enumerated values defined under CROSSFOLDS above

< width > is the dimension of the finished package size across the fanfolds in millimeters. Range: 1-65,535

< length > is the dimension of the finished package size across the crossfolds in millimeters. Range: 1-65,535

< margin > is the width of the margin for the folding program in millimeters. Range: 0-255

< punch > is the hole punch style for the program. It will be one of the enumerated values defined under PUNCH above.

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< tab > is the tab style for the program. It will be one of the enumerated values defined under TAB above.

< bins > is an integer value that is bit-mapped based upon the supported output bin locations for this finishing program. Refer to "XES Generic Finishing Communications Protocol Specification" for information on the bit-map structure.

< maxlength > is an integer value that is used to pass the maximum length allowed for the specified finisher program, in millimeters. Range: 0 (means any length is allowed), and 1 - 65,535.

< sheetdelivery > tells how the sheet will be delivered into the bin. It will be one of the following enumerated values: { FACEUP, FACEDOWN }

< edgepreference > tells what orientation the finisher would like to get the sheet from the IOT. It will be one of the following enumerated values: {NOTSPECIFIED, SHORTEDGE, LONGEDGE}

< title > is an integer value that is bit-mapped based upon the supported title block locations for this finishing program. Refer to "XES Generic Finishing Communications Protocol Specification" for information on the bit-map structure.

Note that the parameters in the FINISHPROGRAMS section are tab-delimited.

6.20 XESMEDIA

This category is a custom AccXES extension to report the media types that are supported by the current printer. The defined response is:

@PJL INFO XESMEDIA
NAME=<media name><tab>
    MISMATCHMODE=<media mismatch mode><tab>
    GAMMACYAN=<cyan gamma value><tab>
    GAMMAMAGENTA=<magenta gamma value><tab>
    GAMMAYELLOW=<yellow gamma value><tab>
    GAMMABLACK=<black gamma value><tab>
    INKLIMITCYAN=<cyan ink limit value><tab>
    INKLIMITMAGENTA=<magenta ink limit value><tab>
    INKLIMITYELLOW=<yellow ink limit value><tab>
    INKLIMITBLACK=<black ink limit value><tab>
    FRENCHNAME=<media name in french><tab>
    ITALIANNAME=<media name in italian><tab>
    GERMANNAME=<media name in german><tab>
    SPANISHNAME=<media name in spanish><tab>
    PORTUGUESENAME=<media name in portuguese>
<NL/CR>
NAME=<media name><tab>
    MISMATCHMODE=<media mismatch mode><tab>
    GAMMACYAN=<cyan gamma value><tab>
    GAMMAMAGENTA=<magenta gamma value><tab>
    GAMMAYELLOW=<yellow gamma value><tab>
    GAMMABLACK=<black gamma value><tab>
    INKLIMITCYAN=<cyan ink limit value><tab>
    INKLIMITMAGENTA=<magenta ink limit value><tab>
    INKLIMITYELLOW=<yellow ink limit value><tab>
    INKLIMITBLACK=<black ink limit value><tab>

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       FRENCHNAME=<media name in french><tab>
       ITALIANNAME=<media name in italian><tab>
       GERMANNAME=<media name in german><tab>
       SPANISHNAME=<media name in spanish><tab>
       PORTUGUESENAME=<media name in portuguese>
<NL/CR>
... (repeats for each supported media)
<FF>

Where the following are defined:

<media name> field is a character string of at most 32 characters.

<media mismatch mode> is one of the following enumerated values: {BLOCK, SUBSTITUTE, SCALE}

<*color* gamma value> is a float from 0.5 to 2.0 that defines the gamma value for the color curve that is used during the printing process.

<*color* ink limit value> is an integer from 0% to 100% that defines the ink limit for the color curve that is used during the printing process.

<media name in *language*> is the <media name> translated to the given language. The character format is ISO-Latin-1.

AccXES PJL Interface

7 Printer Object Download/Upload Format

7.1 Palettes

The defined uploading and downloading format is:

zzzzzzFINESS-Download-Object

XESPALETTES

NAME="<Pen Palette Object Name>"

NUMPENS=<# pens in palette> [2N RANGE]

<# of first pen in first group>

<# of last pen in first group>

<# of first pen in second group>

<# of last pen in second group>

…

<width> {* | !},<color> {*, !}, "patternName" {*, !}

<width> {* | !},<color> {*, !}, "patternName" {*, !}

        ...

The "<Pen Palette Name>" option in the response specifies the name of the palette as a string for the data following. The NUMPENS statement and the following lines detail the number of pens in the current palette and which pens will receive the new data. Several contiguous groups within the palette may be specified to be updated. The number preceding the RANGE keyword on the NUMPENS line must be even and details the start and end pen numbers for each of the contiguous and inclusive ranges of pens to be updated. For example, a 256 entry pen palette with pen numbers ranging from 0 to 255 could specify three groups of pens to change – 1 through 5, 6, and 8 through 10 in the following manner:

        NUMPENS=256 [6 RANGE]

                1

                5

                6

                6

                8

                10

It is valid to allow the range of pens start and end anywhere within the full pen palette table. For example, a user may set the first and last pen to 10 and 20. There must then be exactly enough data supplied following the specifications of the pen ranges to fill these pen slots. In the example above, exactly 9 lines of pen data must be included in the download.

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For each pen in the current palette, a triplet is reported with a modifier for each element in the triplet. The first triplet in the list corresponds to the first pen in the palette and the remaining triplets follow in order.

The first element in the triplet specifies the width of the pen as a floating point number with dimensions of mm. The second number in the triplet specifies the pen color with three color components ranging in value from 0 to 255 which determine the Red, Green, and Blue values of the color, respectively. The formula for the color is:

$$<color> = (<red> * (2^{16})) + (<green> * (2^{8})) + <blue>$$

The last field in the triplet specifies the name of the printer resident pattern object assigned to the pen. Currently, pattern names will be restricted to numbers ranging from 1 to some maximum integer number. Typically, this number is 64. If this name is "0", then no pattern is applied, only the color. Otherwise, the pattern specified is applied in the color specified when this pen is used.

Each of the elements (width, color, and pattern index) has a modifier associated with it. This modifier is either and asterisk (*) or an exclamation point (!) which follows the element after one space character. When the modifier is an asterisk, then the corresponding element is used only to (optionally) initialize the printer's pen palette at the beginning of a job. Thereafter, the job data itself will control pens. It is implementation and data format dependent whether the element will actually initialize the pens with this modifier.

Alternately, the modifier can be an exclamation point which specifies that if the source of the palette is determined to be from this pen palette, then this element will not only initialize the pen's initial state, but control it's state throughout the job, even if it must override job data commands.

This mechanism allows the user to setup palettes which selectively control individual pens and pen features.

It is important to note that unlike some other printer objects, the printer will hold a specific number of pen palettes at all times which function as "bins." These bins will never change names and the number of palettes in the system will never change, but their contents may be modified by the XESOBJECTDOWNLOAD command in either the SET or DEFAULT modes as described in the XESOBJECTDOWNLOAD command. Currently, there are nine palettes. The first palette, "0" is read-only and may not be modified ever. This is the factory default palette. The remaining eight palettes are named "1" through "8" and their contents may be modified.

7.2 Patterns

It is important to note that unlike some other printer objects, the printer will hold a specific number of patterns at all times which function as "bins." These bins will never change names and the number of palettes in the system will never change, but their contents may be modified by the XESOBJECTDOWNLOAD command in either the SET or DEFAULT modes as described in the XESOBJECTDOWNLOAD command. Currently, there are 64 patterns. They are named "1" through "64" and their contents may be modified.

The format employed for downloading and uploading patterns is the SUN raster format. The header for this image file is detailed below:

struct rasterfile {

        int   ras_magic;   /* magic number */

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  int ras_width;   /* width (pixels) of image */

  int ras_height;   /* height (pixels) of image */

  int ras_depth;   /* depth (1, 8, or 24 bits) of pixel */

  int ras_length;   /* length (bytes) of image */

  int ras_type;   /* type of file; see RT_* below */

  int ras_maptype;   /* type of colormap; see RMT_* below */

  int ras_maplength;   /* length (bytes) of following map */

  /* color map follows for ras_maplength bytes, followed by image */

};

The fields are set as below:

Ras_magic = 0x59a66a95

Ras_width = ras_height = 32 (in the future, other dimensions may be allowed)

Ras_depth = 1 (in the future, other heights may be allowed)

Ras_length = (32 * 32)/8 = 128

Ras_type = 0x01 (RT_STANDARD)

Ras_maptype = 0 (RMT_NONE)

Ras_maplength = 0

The Sun raster image format header above and the 128 bytes of image data shall be preceded with the following:

zzzzzzFINESS-Download-Object

XESPATTERNS

NAME="<Pattern Object Name>"

ObjectSize = <nn>

Notice that the ObjectSize field above specifies the number of bytes <nn> remaining AFTER the carriage return/line feed of the ObjectSize line itself. This count is exclusive of the form feed character on an upload of a pattern object.

7.3 Fonts

Fonts have a proprietary download data format which is not described in this document. The printer system will have installed a selection of stick and outline fonts which are read-only. The user may also download other fonts using the XESOBJECTDOWNLOAD command. Currently, downloads of fonts are restricted to using the DEFAULT mode as described in the XESOBJECTDOWNLOAD command. The SET mode is disallowed.

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The printer system fonts are separate from the Postscript fonts. The Postscript fonts exist as system files and are loaded using the system file method (see the Postscript section).

7.4 Raster Stamps

The data format of a raster stamp is any data format supported by the printer. This list can be viewed by listing the set of supported values in the PERSONALITY environment variable. Any printable, single page job without extraneous HP-PJL or other job control command language is a candidate for being a raster stamp. Jobs which have multiple pages are rejected. Occasionally, jobs which are very complex (generate multiple display lists within the printer) are also rejected. In some of these cases, additional memory added to the printer may alleviate this problem.

If a raster stamp is downloaded with the same name as a previously downloaded stamp, then it will overwrite the old one. Raster stamps with no imageable data are ignored. A rasterstamp file which contains more than one page in the same file will result in the creation of a stamp made up of only the first page. Remaining pages are ignored.

A raster stamp downloaded with the PJL RENDERMODE environment variable set to GRAYSCALE cannot be printed in color. Conversely, a raster stamp downloaded with the PJL RENDERMODE set to color, can be printed in monochrome.

Currently, raster stamps may not be uploaded using XESOBJECTUPLOAD. They may, however, be listed with the @PJL INFO XESRASTERSTAMPS command. Also, downloads may occur only in DEFAULT mode in the XESOBJECTDOWNLOAD command.

8 Factory Installed Printer Objects

8.1 Fonts, Release 2.0

The complete set of fonts installed as printer objects in release 2.0 of the 8830 printer is listed below:

Table: Fonts Installed as Printer Objects

FontName	Font Type	Font Name Synonym	Font Object Name
HP Stick Font	Stick Font	-	HP Stick Font
HP2 Stick Font	Stick Font	-	HP2 Stick Font
HP Stick Set 99 Font	Stick Font	-	HP Stick Set 99 Font
HP2 Stick Font	Stick Font	-	HP2 Stick Font - Proportional
Test Print Stick Font *	Stick Font	-	Test Print Stick Font
CalComp Stick Font	Stick Font	-	CalComp Stick Font
CalComp Stick Font *	Stick Font	-	CalComp Stick Font - Proportional
VG-CalComp	Stick Font	-	VG-CalComp
VG-CalComp	Stick Font	-	VG-CalComp - Proportional
VG-Hershey-BoldItalic	Hershey Font (Edged fonts)	-	VG-Hershey-BoldItalic - Proportional
VG-Hershey-Italic	Hershey Font (Edged fonts)	-	VG-Hershey-Italic - Proportional
VG-Hershey-SanSerif	Hershey Font (Edged fonts)	-	VG-Hershey-SanSerif - Proportional
VG-Hershey-Serif	Hershey Font (Edged fonts)	-	VG-Hershey-Serif - Proportional
VG-Hershey-Serif-Bold	Hershey Font (Edged fonts)	-	VG-Hershey-Serif-Bold - Proportional
VG-CalCompOld/Norwegian/Swedish *	Stick Font	-	VG-CalCompOld/Norwegian/Swedish
VG-CalCompOld/Norwegian/Swedish *	Stick Font	-	VG-CalCompOld/Norwegian/Swedish - Proportional
VG-Energy-1 *	Stick Font	-	VG-Energy-1
VG-Energy-2 *	Stick Font	-	VG-Energy-2
VG-Energy-3 *	Stick Font	-	VG-Energy-3
VG-Energy-4 *	Stick Font	-	VG-Energy-4
VG-Energy-5 *	Stick Font	-	VG-Energy-5
VG-German	Stick Font	-	VG-German

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VG-German	Stick Font	-	VG-German - Proportional
VG-Simplex/French	Stick Font	-	VG-Simplex/French
VG-Simplex/French	Stick Font	-	VG-Simplex/French - Proportional
OCRB	Outline Type 1	-	OCRB
Courier	Outline Type 1	-	Courier
Courier-Bold	Outline Type 1	-	Courier-Bold
Courier-BoldItalic	Outline Type 1	-	Courier-BoldItalic
Courier-Italic	Outline Type 1	-	Courier-Italic
NeueClassic-Roman	Outline Type 1	Times-Roman	NeueClassic-Roman
NeueClassic-Bold	Outline Type 1	Times-Bold	NeueClassic-Bold
NeueClassic-BoldItalic	Outline Type 1	Times-BoldItalic	NeueClassic-BoldItalic
NeueClassic-Italic	Outline Type 1	Times-Italic	NeueClassic-Italic
NeueModern	Outline Type 1	Helvetica	NeueModern
NeueModern-Bold	Outline Type 1	Helvetica-Bold	NeueModern-Bold
NeueModern-BoldItalic	Outline Type 1	Helvetica-BoldItalic	NeueModern-BoldItalic
NeueModern-Italic	Outline Type 1	Helvetica-Italic	NeueModern-Italic
Symbol *	Outline Type 1	-	Symbol

* - These fonts have default character set encodings which are not compatible with the industry standard ASCII character encoding. Therefore, using these fonts with the label feature in AccXES may yield unpredictable results (LABELFONT or LABELFONTOBJ PJL variables).

The table above details the name of the font, the font type (stick, Hershey, or outline), an industry standard pseudo-name for the font if available, and the PJL font object name. If a job requests a font through its pseudo-name, the server will map this font name to the name listed in the leftmost column of the table.

8.2 Patterns, Release 2.0

There are 64 factory installed patterns in the 8830 which may be utilized in the pattern field of the AccXES palettes.

Patterns named "1" through "33" are shading patterns, starting from completely white (no toner) at pattern "1" and darkening to completely black at pattern "33". These patterns may not be deleted, nor may the user change their contents.

Patterns named "34" through "49" are "random patterns". "34" through "40" provide increasingly course dot patterns. "41" and "42" are vertical and horizontal stripes, respectively. "43" is a diagonal weave pattern. "44" is a pattern of circles. "45" is a pattern of crosses. "46" is a coarse diagonal weave pattern. "47" is a checkerboard pattern. "48" is a pattern of smelly faces, and "49" is a pattern of six pointed stars. These patterns may not be deleted, nor may the user change their contents.

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Patterns named "50" through "64" are use defined patterns which are initially white from the factory. The user may download any binary 32x32 bit raster pattern into these patterns, although the patterns themselves cannot be deleted.

Note that the pattern name "0" is reserved for specifying no pattern in palettes.

8.3 Palettes, Release 2.0

There are 9 palettes in the 8830 printer named "0" through "8." Palette "0" is a read-only factory defaults palette. All palettes have 256 pens.

The factory default palette is initialized as follows. All job override modifiers for each attribute on each pen are set to 0 to indicate that if the palette is applied, that attribute for that pen will take effect. All pen widths are set to 0.35mm. All colors are set to black except for pen 0 which is set to white. Pens 1 through 64, 114 through 128, 178 through 192, and 242 through 255 have no pattern assigned ("0") and let the color field determine the pen's appearance. Pens 65 through 113, 129 through 177, and 193 through 241 have patterns "1" through "49" assigned respectively. Palettes "1" through "8" may not be deleted; however, their content may be changed. From the factory, palettes "1" through "8" are set with the contents of the factory palette.8830 Raster stamps, Release 2.0

There are no factory installed raster stamps shipped with the printer.

9 Status Codes

The AccXES printers support the following 5 digit status codes. The same classification defined by the first two digits in the code that HP-PJL defines is supported in AccXES printers as well. Many of the same codes that standard HP-PJL defines are listed here as well as many new AccXES extensions.

9.1 Status Codes and Informational Messages [10xxx]

10001 - IDLE

10002 - OFFLINE

10003 - WARMING

10007 - INITIALIZING

10050 - PROCESSING*

10051 - PRINTING*

10052 - LOW INK BLACK*

10053 - LOW INK CYAN*

10054 - LOW INK MAGENTA*

10055 - LOW INK YELLOW*

50007 - ENGINE COMMUNICATION ERROR**

* Unique to AccXES

** Only applicable to 6030 and 6050 printer configurations. Displayed during LINK DOWN coditions..

9.2 Auto-Continuable conditions [30xxx]

This list specifies Auto-Continuable error codes. The HP-PJL Spec identifies the corresponding such that, if no action is taken, the device automatically continues.

35078 - POWER SAVER*

* (Unique to AccXES)

9.3 Operator Intervention Conditions [40xxx]

40021 - PRINTER DOOR OPEN

40022 - PAPER JAM

40038 - NO TONER

40051 - MISMATCH*

40052 - OUT OF INK BLACK

40053 - OUT OF INK CYAN

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40054 - OUT OF INK MAGENTA

40055 - OUT OF INK YELLOW

43000 - FOLDER ERROR

* Unique to AccXES

9.4 Hardware Errors [50xxx]

50000 - GENERAL HARDWARE FAILURE

9.5 STATUS Precedence

A printer could have multiple statuses to report at once such as DOOR OPEN and NO TONER. AccXES can only return one status item at a time. STATUS will be checked and returned in this order:

LINK DOWN ***

NO TONER*

FOLDER ERROR*

GENERAL HARDWARE FAILURE

PRINTER DOOR OPEN

PAPER JAM

OUT OF INK (BLACK, CYAN, MAGENTA, YELLOW)**

MISMATCH

POWER SAVER

WARMING

PRINTING

OFFLINE

LOW INK (BLACK, CYAN, MAGENTA, YELLOW)**

PROCESSING

IDLE

* Non-X2 Printers ONLY.

** X2 Printers ONLY.

*** Only applies to 6030 and 6050 Printers

10 Examples

This section provides a few examples of how to use the Xerox AccXES HP-PJL to form jobs and make printer status inquiries. In what follows, <UEL> is the UEL sequence. Generally, a carriage return or a carriage return/line feed sequence is assumed to be inserted between consecutive lines of HP-PJL as presented below.

10.1 Changing a Job's Priority and Canceling

This command sequence can be used to change a job's priority. The example below assumes that a job with the name "PRINTJOB1" has already been submitted by a client whose OWNER string is "HARRY".

This example provides both the printer password (assumed to be 5 in this example) and the owner string. In practice, one, not both, is necessary. The priority is changed from the current value to 3.

<UEL>@PJL

@PJL JOB PASSWORD=5

@PJL SET OWNER = "HARRY"

@PJL COMMENT XESJOBSET NAME="PRINTJOB1" PRIORITY=3

@PJL EOJ

<UEL>@PJL

One can substitute the line:

@PJL COMMENT XESCANCEL NAME="PRINTJOB1"

for the XESJOBSET command to cancel the job.

10.2 Listing and Uploading Printer Objects

This example shows two separate HP-PJL jobs which allow the user to retrieve the list of pen palettes in the printer and then view a pen palette. Of course, this example easily extends to the other uploadable objects, patterns.

This job returns the list of all the pen palettes in the printer:

<UEL>@PJL

@PJL INFO XESPALETTES

<UEL>@PJL

This next job uploads a particular pen palette:

<UEL>@PJL

@PJL COMMENT XESOBJECTUPLOAD TYPE = XESPALETTES NAME ="0"

<UEL>@PJL

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The response will be a repeat of the actual command the host sent requesting the upload immediately followed by the object data and terminated with a form feed.

10.3 Downloading a Printer Object into Non-volatile Memory

This example shows how to download a printer object into the printer's non-volatile memory. A pen palette is downloaded into the printer with the name "1." This palette has two pens. The system is assumed to have a printer password set to 5. As mentioned previously, a previously downloaded object with the same name and type will be overwritten.

<UEL>@PJL

@PJL JOB PASSWORD=5

@PJL COMMENT XESOBJECTDOWNLOAD TYPE = XESPALETTES NAME = "1" MODE = DEFAULT

@PJL ENTER LANGUAGE = DOWNLOAD

zzzzzzFINESS-Download-Object

XESPALETTES

NAME="1"

NUMPENS=2[2 RANGE]

0

1

0.35 *, 255 *, "5" *

0.70 *, 255 *, "7" *

<UEL>@PJL EOJ

<UEL>

Downloading a raster stamp is shown below:

<UEL>@PJL

@PJL JOB PASSWORD=5

@PJL COMMENT XESOBJECTDOWNLOAD TYPE = XESRASTERSTAMPS NAME = "Stamp1" MODE = DEFAULT

@PJL ENTER LANGUAGE = HPGL

<Data for HPGL job describing the stamp><UEL>@PJL

@PJL EOJ

<UEL>

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Note that in the case of raster stamps, the ENTER LANGUAGE statement may be omitted or AUTO may be used. The printer will then rely on its autoformat recognition capability.

Downloading a pattern is shown below:

<UEL>@PJL

@PJL JOB PASSWORD=5

@PJL COMMENT XESOBJECTDOWNLOAD TYPE = XESPATTERNS NAME = "63" MODE = DEFAULT

zzzzzzFINESS-Download-Object

XESPATTERNS

NAME="63"

ObjectSize=160

<Sunraster header & raster data><UEL>@PJL

@PJL EOJ

10.4 <UEL>Using a Printer Object in a Job

This example shows how to reference a printer object in a job. It is assumed that the object has already been downloaded. In this example, a raster stamp with name "Stamp1" is applied to each of the pages in this job in a top center location. The HPGL job will also be controlled by the palette named "Palette1."

<UEL>@PJL

@PJL JOB NAME="UsingObjects"

@PJL SET OWNER="ChucksPC"

@PJL COMMENT Reference a palette and a raster stamp.

@PJL SET RASTERSTAMPID="Stamp1"

@PJL SET RASTERSTAMPLOCX = CENTER

@PJL SET RASTERSTAMPLOCY = TOP

@PJL SET HPGLPALETTE = "1"

@PJL SET HPGLPALETTESOURCE = PRINTER

@PJL ENTER LANGUAGE=TIFF6

<Data for TIFF job 1><UEL>@PJL

@PJL ENTER LANGUAGE=HPGL

<Data for HPGL job 2><UEL>@PJL

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@PJL COMMENT End of job delimiter

@PJL EOJ

<UEL>

10.5 Deleting a Printer Object

This example shows how to delete a printer object from the printer's system memory. This example assumes that the object has been previously downloaded and is of type read/write. Further, the object is a pen palette with name "PaletteTwo". Lastly, the example assumes that the printer's password is 5.

<UEL>@PJL

@PJL JOB PASSWORD=5

@PJL COMMENT XESOBJECTDELETE TYPE = XESRASTERSTAMPS NAME = "Stamp1"

@PJL EOJ

<UEL>

10.6 Job and Page Control Options in a Multifile Document

What follows is an example job that contains two files, a TIFF file and an HPGL file. It prints out two collated copies. The first prints on an A size paper and the second prints on E size vellum. The first file prints with 1:1 scaling and the second file is autoscaled to fit the E size media. The print job's name is ExampleJob and this name will appear in the status messages received with XESQUEUE and other PJL queries. The owner of the job has been designated ChucksPC.

<UEL>@PJL

@PJL JOB NAME="ExampleJob"

@PJL SET OWNER="ChucksPC"

@PJL COMMENT Set up the job parameters

@PJL SET MEDIASOURCE=AUTO

@PJL SET COPIES=2

@PJL SET COLLATIONENABLE=ON

@PJL COMMENT Set up params specific to file 1

@PJL SET PAPER=ANSI_A

@PJL SET MEDIATYPE=PAPER

@PJL SET PAGESCALING=100

@PJL ENTER LANGUAGE=TIFF6

<Data for TIFF job 1><UEL>@PJL

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@PJL COMMENT Set up params specific to file 2

@PJL SET PAPER=ANSI_E

@PJL SET MEDIATYPE=VELLUM

@PJL SET PAGESCALING=AUTO

@PJL ENTER LANGUAGE=HPGL

<Data for HPGL job 2><UEL>@PJL

@PJL COMMENT End of job delimiter

@PJL EOJ

<UEL>

Note that the end of actual job data is followed immediately with a <UEL> marker.

10.7 Page Composition Job

What follows is an example page composition job that contains two files, a TIFF file and an HPGL file. It prints out two copies of the resulting composition. The print job's name is ExampleJob and this name will appear in the status messages received with XESQUEUE and other PJL queries. The owner of the job has been designated ChucksPC.

In this composition, both constituent pages are autoscaled up to a D size sheet of paper, rotated 90 degrees and placed on the canvas non-overlapping. The Tiff job is placed on the left side of the canvas and the HPGL job on the right. The canvas is sized to ANSI E to exactly contain the two D sized pages.

<UEL>@PJL

@PJL JOB NAME="ExampleJob"

@PJL SET OWNER="ChucksPC"

@PJL COMMENT Setup the page composition canvas

@PJL SET PAGECOMPENABLE = ON

@PJL SET PAGECOMPPAPER = ANSI_E

@PJL SET PAGECOMPMEDIATYPE = PAPER

@PJL SET PAGECOMPMEDIASOURCE = AUTO

@PJL COMMENT Set up the job parameters

@PJL SET COPIES=2

@PJL SET COLLATIONENABLE=OFF

@PJL COMMENT Set up params specific to file 1

@PJL SET PAPER=ANSI_D

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@PJL SET PAGECOMPROTATE = 90

@PJL SET PAGECOMPPOSX = 0

@PJL SET PAGECOMPPOSY = 0

@PJL SET PAGESCALING=AUTO

@PJL ENTER LANGUAGE=TIFF6

<Data for TIFF job 1><UEL>@PJL

@PJL COMMENT Set up params specific to file 2

@PJL SET PAPER=ANSI_D

@PJL SET PAGESCALING=AUTO

@PJL SET PAGECOMPROTATE = 90

@PJL SET PAGECOMPPOSX = 22

@PJL SET PAGECOMPPOSY = 0

@PJL ENTER LANGUAGE=HPGL

<Data for HPGL job 2><UEL>@PJL

@PJL COMMENT End of job delimiter

@PJL EOJ

<UEL>

Note that the end of actual job data is followed immediately with a <UEL> marker.

10.8 Getting Job and Printer Status

This example demonstrates how to retrieve job queue status and printer/media status. The first HP-PJL job presented below will report on the status of all the jobs in the printer's job queue. In particular, the most recently completed jobs, the jobs in processing, and the jobs waiting in the queue are detailed. Information such as the job's name, owner, current processing state, priority, data format, size, and originating communication port is reported. The order in which the job fields are reported in the response details the ordering in the printer job queue.

<UEL>@PJL

@PJL INFO XESPENPALETTE

<UEL>@PJL

The following job returns the status of the printer and it's media, along with detailed status of the job currently being printed.

<UEL>@PJL

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@PJL COMMENT Return the state of the printer controller & current job

@PJL INFO XES_SYS_STAT

@PJL COMMENT Return the state of the 3 media rolls

@PJL INQUIRE INROLL1SIZE

@PJL INQUIRE INROLL1STAT

@PJL INQUIRE INROLL1TYPE

@PJL INQUIRE INROLL2SIZE

@PJL INQUIRE INROLL2STAT

@PJL INQUIRE INROLL2TYPE

@PJL INQUIRE INROLL3SIZE

@PJL INQUIRE INROLL3STAT

@PJL INQUIRE INROLL3TYPE

<UEL>

10.9 Setting Default Printer Parameters

This example shows how to set the serial port baud rate in the User Default parameter environment. This change will persist over power cycles. The example assumes that the printer's password is 5. The baud rate is set to 19200.

<UEL>@PJL

@PJL JOB PASSWORD=5

@PJL DEFAULT SERIALBAUD=19200

@PJL EOJ

<UEL>

10.10 Adding a Label to a Plot

This example shows how to apply a label to all the pages in an associated print job. In this case, the label is specified with a 45 degree rotation, font set to Times-Roman, a 50% shading level, a label size of 14 points, and location of top center. The label itself is the string "Label on Plot." There are two files in this example, a TIFF job and a HPGL job.

<UEL>@PJL

@PJL JOB NAME="ExampleLabel"

@PJL SET OWNER="ChucksPC"

@PJL COMMENT Set up the label

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@PJL SET LABELSTRING="Label on Plot"

@PJL SET LABELLOCX = CENTER

@PJL SET LABELLOCY = TOP

@PJL SET LABELSHADING = 50

@PJL SET LABELSIZE = 14

@PJL SET LABELROTATE = 45

@PJL SET LABELFONTOBJ = "HP2 Stick Font - Proportional"

@PJL ENTER LANGUAGE=TIFF6

<Data for TIFF job 1><UEL>@PJL

@PJL ENTER LANGUAGE=HPGL

<Data for HPGL job 2><UEL>@PJL

@PJL COMMENT End of job delimiter

@PJL EOJ

<UEL>

11 XES AccXES HP-PJL Support by Printer Model

The following table details which Xerox printers support each of the HP-PJL commands. Where appropriate, the list of supported parameters is provided for a given command. If a parameter is followed by a release number in parenthesis, then this parameter is supported in this release and all those following the specified release.

Table: Printer Support for HP-PJL Commands

PJL Command	Xerox 8855, 721P	Xerox 8830, 8825, 8850, 510DP	ColorGrafX X2 X2 Tech
COMMENT	Y	Y	Y
DEFAULT	Y	Y	Y
DINQUIRE	Y	Y	Y
ECHO	Y	Y	Y
ENTER	Y: {AUTO, CALCOMP, C4, CALS1, CAL2, CGM, FILENET, FLASH, VRASTER, HP-GL/2, HPGL2, HPGL758X, PCL, POSTSCRIPT, TIFF6, JPEG, VCGL, VDS}, JOB_ACCOUN	Y: {AUTO, CALCOMP, C4, CALS1, CAL2, CGM, FILENET, FLASH, VRASTER, HP-GL/2, HPGL2, HPGL758X, PCL, POSTSCRIPT, TIFF6, JPEG, VCGL, VDS}, JOB_ACCOUN	Y: {AUTO, CALCOMP, C4, CALS1, CAL2, CGM, FILENET, FLASH, VRASTER, HP-GL/2, HPGL2, HPGL758X, PCL, POSTSCRIPT, TIFF6, JPEG, VCGL, VDS, JOB_ACCOUN
EOJ	Y	Y	Y
FSAPPEND	N	N	N
FSDIRLIST	N	N	N
FSQUERY	N	N	N
FSUPLOAD	N	N	N
FSDELETE	N	N	N
FSDOWNLOAD	N	N	N
FSINIT	N	N	N
FSMKDIR	N	N	N
INFO	Y: CONFIG, ID, FILESYS, MEMORY, PAGECOUNT (linear only),	Y: CONFIG, ID, FILESYS, MEMORY, PAGECOUNT, STATUS,	Y: CONFIG, ID, FILESYS, MEMORY, PAGECOUNT (linear only),

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	STATUS, USTATUS, VARIABLES, XESACCOUNTING* (R4.0), XESFONTS (R1.5), XESPALETTES (R1.5), XESQUEUE, XESRASTERSTAMPS (R1.5), XES_SYS_STAT XESFINISHER JOB_ACCOUNTING (R6.2), XESMEDIA(R7.5 *obsolete in 6.2	USTATUS, VARIABLES, XESACCOUNTING* (R4.0), XESFONTS (R1.5), XESPALETTES (R1.5), XESQUEUE, XESRASTERSTAMPS (R1.5), XES_SYS_STAT, XESFINISHER (R6.0) JOB_ACCOUNTING (R6.2), XESMEDIA(R7.5)	STATUS, USTATUS, VARIABLES, XESFONTS (R1.5), XESPALETTES (R1.5), XESQUEUE, XESRASTERSTAMPS (R1.5), XES_SYS_STAT XESFINISHER JOB_ACCOUNTING (R6.2), XESMEDIA(R7.5)
INITIALIZE	Y	Y	Y
INQUIRE	Y	Y	Y
JOB	Y: {NAME, PASSWORD}	Y: {NAME, PASSWORD}	Y
OPMSG	N	N	N
PJL	Y	Y	Y
RDYMSG	N	N	N
RESET	Y	Y	Y
SET	Y	Y	Y
STMSG	N	N	N
UEL	Y	Y	Y
USTATUS	N	N	N
USTATUSOFF	N	N	N
XESACCOUNTING	Y	R4.0	Y
XESCANCEL	Y	Y	Y
XESCFG	R 6.2	R 6.2	Y
XESJOBSET	Y	Y	Y
XESMEDIASET	Y	Y	Y
XESMEDIADE	Y	Y	Y
XESOBJECTDELETE	Y	R1.5	Y

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XESOBJECTD OWNLOAD	Y	R1.5	Y
XESOBJECTU PLOAD	Y	R1.5	Y
XESPENPALE TTE	N	Obsolete in R1.5	N

The following table shows which HP-PJL environment variables are supported on which Xerox printers. Enumerated values for the variables are listed and their support in each printer is detailed individually. The default values are shown for each variable by enclosing the default value in parenthesis. When a release number is indicated in the printer column, this means that the variable or variable value is supported in this release and all later releases, but not in prior releases. Lastly, variables which reflect status of the printer such as those in the Configuration Group (example: CDROMPRESENT) may not have default values. They are read-only and take on the "real-time" value of the appropriate status condition.

Table: Printer Support for HP-PJL Environment Variables

PJL Environment Variable	Variable Values	Xerox 8855/ 721P	Xerox 8830/ 8825 /8850 / 510D	Color GrafX X2/ X2 TECH	Xerox 6030, 6050
ACCTMODE This variable is unsupported in R4.0.	(DISABLED)	N	Unsup ported in	N	N
	ENABLED	N	Unsup ported in	N	N
	OPTIONAL	N	Unsup ported in	N	N
APPLETALKNAME	string <= 32 chars	N	Y	N	N
AREAMEDIAUSAGE	0 to 32768	N	Y	TBD	N
BANNERPAGEDIAGS	{ON, (OFF)}	Y	R1.5	Y	Y
BANNERPAGEENABLE	{ON, (OFF)}	Y	R1.5	Y	Y
BANNERPAGEPOS	(BEFORE)	Y	R1.5	Y	Y
	AFTER	Y	R1.5	Y	Y
COLORANT<1-4>ELEMEN TUSED	0-100	N	N	N	N
COLORANT<1-4>TYPE	CARTRIDGE_EMPTY	N	N	N	N
	CARTRIDGE_BLACK	N	N	N	N
	CARTRIDGE_CYAN	N	N	N	N
	CARTRIDGE_MAGEN TA	N	N	N	N
	CARTRIDGE_YELLO W	N	N	N	N

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COLORANT<1-4>USED	0-100	N	N	N	N
CCCHECKSUM	{(ON), OFF}	Y	Y	Y	Y
CCEOM	0 to 0x1F (0x0D)	Y	Y	Y	Y
CCNUMSYNC	1 to (2)	Y	Y	Y	Y
CCPALETTE	String <= 32 chars	Y	R1.5	Y	Y
CCPALETTESOURCE	(JOB)	Y	R1.5	Y	Y
	PRINTER	Y	R1.5	Y	Y
CCRESOLUTION	50 to 4064 (2032)	Y	R1.0F	Y	Y
CCSYNC	0 to 0x7F (0x16)	Y	Y	Y	Y
CCTERMEOP	1	Y	R1.0F	Y	Y
	2	Y	R1.0F	Y	Y
	NONE	Y	R1.0F	Y	Y
CCTERMFORCEPLOT	{(ON), OFF}	Y	R1.5	Y	Y
CCTERMMANUAL	{ON, (OFF)}	Y	R1.5	Y	Y
CCTERMNEWPLOT	{ON, (OFF)}	Y	R1.5	Y	Y
CCTERMPAUSE	{(ON), OFF}	Y	R1.0F	Y	Y
CCTERMSA	999	Y	R1.0F	Y	Y
	9999	Y	R1.0F	Y	Y
	(BOTH)	Y	R1.0F	Y	Y
	NONE	Y	R1.0F	Y	Y
CCTERMSTARTPLOT	{(ON), OFF}	Y	R1.5	Y	Y
CCTERMTOF	{(ON), OFF}	Y	R1.5	Y	Y
CGMBKGRNDCOLOR	(FILECONTROL)	Y	R1.5	Y	Y
	FORCEBLACKONWHITE	Y	R1.5	Y	Y
CGMDEFAULTPAPER	LETTER	Y	R1.5	Y	Y

	LEDGER	Y	R1.5	Y	Y
	ANSI_A through ANSI_E	Y	R1.5	Y	Y
	ARCH_A through ARCH_E	Y	R1.5	Y	Y
	ARCH_30	Y	R1.5	Y	Y
	ISO_A4 through ISO_A0	Y	R1.5	Y	Y
	ISO_B4 through ISO_B1	N	R1.5	Y	N
	JIS_B4 through JIS_B1	Y	N	Y	Y
CGMPALETTE	String <= 32 chars	Y	R1.5	Y	Y
CGMPALETTESOURCE	(JOB)	Y	R1.5	Y	Y

AccXES PJL Interface

	PRINTER	Y	R1.5	Y	Y
COLLATIONENABLE	(OFF)	Y	Y	Y	Y
	ON	Y	Y	Y	Y
	AUTO	Y	R1.5	Y	Y
	FORWARD	Y	R1.5	Y	Y
	REVERSE	Y	R1.5	Y	Y
CONTRASTADJ	(-10 to +10)	Y	Y	Y	Y
COPIES	(1) to 999	Y	Y	Y	Y
CDROMPRESENT	{TRUE, FALSE}	Y	Y	Y	Y
DATEFORMAT	(IMPERIAL)	R6.0.0 0A	R6.0.0 0A	Y	Y
DATEFORMAT	INTERNATIONAL	R6.0.0 0A	R6.0.0 0A	Y	Y
DENSITY	0 to 10 (5)	N(Y-721P)	Y	N	N
DOCUMENTTYPE	(AUTOSELECT)	Y	Y	Y	Y
	GRAPHICS	Y	Y	Y	Y
	PHOTO	Y	Y	Y	Y
	LINESANDTEXT	Y	Y	Y	Y
ENGINELANG<1-2>	CZECH	N	Y	N	N
	DUTCH	N	Y	N	N
	ENGLISH	Y	Y	Y	Y
	EURO_SPANISH	Y	Y	Y	Y
	FRENCH	Y	Y	Y	Y
	GERMAN	Y	Y	Y	Y
	ITALIAN	Y	Y	Y	Y
	RUSSIAN	N	Y	N	N
	SAMER_PORTUGESE	Y	Y	Y	Y
	SAMER_SPANISH	N	Y	N	N
	SWEDISH	N	Y	N	N
	TURKISH	N	Y	N	N
	UKENGLISH	N	Y	N	N
ENGINEMAXPLOTLENGTH	Integer	Y	N	N	Y
ENGINESTATE	IDLE	Y	Y	Y	Y
	PRINTING	Y	Y	Y	Y
	ERROR	Y	Y	Y	Y
	WARMING	Y	Y	Y	Y
	INIT	Y	Y	Y	Y

AccXES PJL Interface

	LINK DOWN	N	N	N	Y
ERRORPAGE	NONE	Y	Y	Y	Y
	(LEVEL1)	Y	Y	Y	Y
	LEVEL2	Y	Y	Y	Y
ESSSTATE	INIT	Y	Y	Y	Y
	IDLE	Y	Y	Y	Y
	PROCESSING	Y	Y	Y	Y
	PRINTING	Y	Y	Y	Y
	ERROR	Y	Y	Y	Y
	OPINTERVENTION	Y	Y	Y	Y
	PAUSED	Y	Y	Y	Y
ESSSWREV	string <= 32 chars	Y	Y	Y	Y
ETHERBEUIENABLE	{(ON), OFF}	Y	Y	Y	Y
ETHERBEUIGROUP	string <= 15 chars	Y	Y	Y	Y
ETHERBEUIMACHINENAME	string <= 15 chars	Y	Y	Y	Y
ETHERBEUIREMARK	string <= 48 chars	Y	Y	Y	Y
ETHERBEUISERVICE	string <= 48 chars	Y	Y	Y	Y
ETHERIPXCONTEXT	string <= 127 chars	Y	Y	Y	Y
ETHERIPXENABLE	{(ON), OFF}	Y	Y	Y	Y
ETHERIPXFRAME	802.3	Y	Y	Y	Y
	802.2	Y	Y	Y	Y
	SNAP	Y	Y	Y	Y
	ETHERNET2	Y	Y	Y	Y
	(AUTO)	Y	Y	Y	Y
ETHERIPXNDSENABLE	{(ON), OFF}	Y	Y	Y	Y
ETHERIPXNDSTREE	string <= 64 chars	Y	Y	Y	Y
ETHERIPXPRIMARYSERVER	string <= 48 chars	Y	Y	Y	Y
ETHERIPXQSCANRATE	(1) to 255	Y	Y	Y	Y
ETHERIPXSERVERNAME	string <= 47 chars	Y	Y	Y	Y
ETHERSTAT	DISABLED	Y	R2.5	Y	Y
	QUERYIPADDR	Y	R2.5	Y	Y
	READY	Y	R2.5	Y	Y
	SHUTDOWNPENDING	Y	R2.5	Y	Y
ETHERTALKENABLE	{ON, (OFF)}	Y	Y	Y	Y
ETHERTALKPHASE	PHASE1	Y	Y	Y	Y
	(PHASE2)	Y	Y	Y	Y

AccXES PJL Interface

ETHERTALKTYPE	string <= 32 chars	Y	Y	Y	Y
ETHERTALKZONE	string <= 32 chars	Y	Y	Y	Y
ETHERTCPDHCPENABLE	{(ON), OFF}	Y	Y	Y	Y
ETHERTCPIPADDR	string = 12 chars	Y	Y	Y	Y
ETHERTCPIPENABLE	OFF	Y	Y	Y	Y
	PRINTER	Y	R2.5	Y	Y
	ADVANCED	Y	R2.5	Y	Y
ETHERTCPIPGATEWAY	string = 12 chars	Y	Y	Y	Y
ETHERTCPIPNETMASK	string = 12 chars	Y	R2.0	Y	Y
ETHERTCPRARPENABLE	{ON, (OFF)}	Y	Y	Y	Y
FINELINEGRAYSCALERENDERING	CONTONE	Y	Y	Y	Y
	BLACK	Y	Y	Y	Y
FINELINEPIXELTHRESHOLD	{1 - 25}	Y	Y	Y	Y
FINISHERSTATE	READY	Y	R1.0G	N	Y
	ERROR	Y	R1.0G	N	Y
FINISHERTYPE	NONE	Y	Y	Y	Y
	GERA_ISO	N	R1.0G	N	N
	GERA_ANSI	N	R1.0G	N	N
	GERA_ANSI_SPECIA	N	R1.0G	N	N
	GFI_FINISHER	Y	R6.0	N	Y
FINISHBIN	DONTCARE	Y	R6.0	N	Y
	BIN1 through BIN13	Y	R6.0	N	Y
	FANFOLD	Y	R6.0	N	Y
	BYPASS	Y	R6.0	N	Y
FINISHCROSSFOLD	USEPROGRAM	Y	R6.0	N	Y
	CROSSFOLDOFF	Y	R6.0	N	Y
FINISHMARGINS	USEPROGRAM	Y	R6.0	N	Y
	MARGINSOFF	Y	R6.0	N	Y
FINISHPROGID	String <= 32 characters	Y	R6.0	N	Y
FINISHPROGRAM (Unsupported in 9.0)	Integer; Range 0 to 20	Unsupported in R9.0	R6.0; Unsupported in 9.0	N	N
FINISHPUNCH	USEPROGRAM	Y	R6.0	N	Y
	PUNCHON	Y	R6.0	N	Y
	PUNCHOFF	Y	R6.0	N	Y
FINISHTABS	USEPROGRAM	Y	R6.0	N	Y
	TABSON	Y	R6.0	N	Y

AccXES PJL Interface

	TABSOFF	Y	R6.0	N	Y
FINMAXLENGTH	Integer; 0 to 65,535	Y	R6.0	N	Y
FOLDER_GERA	(FOLD_BYPASS)	Y (Read only)	Y	N	Y
	FOLD_190	N	R1.0G	N	N
	FOLD_210	N	R1.0G	N	N
	FOLD_190_MARGIN	N	R1.0G	N	N
	FOLD_ANSI_A	N	R1.0G	N	N
	FOLD_ARCH_A	N	R1.0G	N	N
	FOLD_7HALFX11	N	R1.0G	N	N
	FOLD_7HALFX11_MARGIN	N	R1.0G	N	N
	FOLD_GFIPROGRAM	Y (Read only)	R6.0	N	Y
FOLDER_OVERLENGTH	(BYPASS)	Y	R2.5	N	Y
	ZFOLD	N	R2.5	N	N
FORMID	string <= 32 chars	N	N	N	N
HDDPRESENT	{TRUE, FALSE}	Y	Y	Y	Y
HPDEFAULTMC	{ON,(OFF)}	Y	Y	Y	Y
HPDEFAULTNP	{1-(8)-256}	R9.2	R9.2	R9.2	Y
HPGLMODE	HPGL2	Y	Y	Y	Y
	HP758X	Y	Y	Y	Y
HPGLPALETTE	String <= 32 chars	Y	R1.5	Y	Y
HPGLPALETTESOURCE	(JOB)	Y	R1.5	Y	Y
	PRINTER	Y	R1.5	Y	Y
HPIGNOREPS	{ON, (OFF)}	Y	Y	Y	Y
HPROUNDLINEENDS	{ON, (OFF)}	Y	Y	Y	Y
HPTERMAF	{(ON), OFF}	Y	R1.5	Y	Y
HPTERMAH	{(ON), OFF}	Y	R1.5	Y	Y
HPTERMFR	{(ON), OFF}	Y	R1.5	Y	Y
HPTERMNR	{ON, (OFF)}	Y	R1.5	Y	Y
HPTERMPG	{(ON), OFF}	Y	R1.5	Y	Y
HPTERMPLOTOFF	{(ON), OFF}	Y	R1.5	Y	Y
HPTERMRP	{(ON), OFF}	Y	R1.5	Y	Y
HPTERMSP	{ON, (OFF)}	Y	R1.5	Y	Y
IMAGESCALEMODE	(PHOTO)	Y	R1.0H2	Y	Y

AccXES PJL Interface

	LINE	Y	R1.0H 2	Y	Y
INROLL<1-4>SIZE * Note - X2 page sizes smaller than 24" are only supported on the 36" version of the printer, not on the 54" version.	ROLL_A0	Y	Y	Y	Y
	ROLL_A0+	N	Y	Y	N
	ROLL_A0++	Y	Y	Y	Y
	ROLL_A1	Y	Y	Y	Y
	ROLL_A1+	N	Y	Y	N
	ROLL_A2	Y	Y	Y	Y
	ROLL_A3	Y	Y	Y	Y
	ROLL_A4	N	N	N	N
	ROLL_B1	N	R1.5	Y	N
	ROLL_B2	N	R1.5	Y	N
	ROLL_B3	N	R1.5	Y	N
	ROLL_JIS_B1	Y	N	Y	Y
	ROLL_JIS_B2	Y	N	Y	Y
	ROLL_JIS_B3	Y	N	Y	Y
	ROLL_JIS_B4	N	N	Y *	N
	ROLL_750	N	Y	Y	N
	ROLL_891	Y	N	Y	Y
	ROLL_900	Y	Y	Y	Y
	ROLL_8_5	Y	N	N *	Y
	ROLL_11	Y	Y	Y *	Y
	ROLL_17	Y	Y	Y *	Y
	ROLL_22	Y	Y	Y *	Y
	ROLL_34	Y	Y	Y	Y
	ROLL_30	Y	Y	Y	Y
	ROLL_9	Y	N	Y *	Y
	ROLL_12	Y	Y	Y *	Y
	ROLL_18	Y	Y	Y *	Y
	ROLL_24	Y	Y	Y	Y
	ROLL_36	Y	Y	Y	Y
	ROLL_14	N	N	Y*	N
	ROLL_15	N	N	Y*	N
	ROLL_21	N	N	Y*	N
	ROLL_38	N	N	Y	N
	ROLL_42	N	N	Y	N

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	ROLL_44	N	N	Y	N
	ROLL_48	N	N	Y	N
	ROLL_50	N	N	Y	N
	ROLL_53	N	N	Y	N
	ROLL_54	N	N	Y	N
INROLL<1-4>STAT	NONE	Y	Y	Y	Y
	FULL	Y	Y	Y	Y
	LOW	Y	Y	Y	Y
	EMPTY	Y	Y	Y	Y
INROLL<1-4>TYPE (Prior to V7.5 Release)	PAPER	Y	Y	N	Y
	VELLUM	Y	Y	N	Y
	FILM	Y	Y	N	Y
	PHOTOFILM			N	N
	COATEDBOND			N	N
	INKJET			N	N
	TRANSPARANCY			N	N
	SPECIAL			N	N
INROLL<1-4>TYPE (7.5 and Later Release)	<string>	Y	Y	Y	Y
INTRAY<1-4>SIZE	LETTER	N	R2.0 (Unsupported)	N	N
	LEDGER	N	R2.0 (Unsupported)	N	N
	ANSI_A through ANSI_E	N	R2.0 (Unsupported)	N	N
	ARCH_A through ARCH_E	N	R2.0 (Unsupported)	N	N
	ARCH_30	N	R2.0 (Unsupported)	N	N
	ISO_A4 through ISO_A0	N	R2.0 (Unsupported)	N	N

AccXES PJL Interface

	ISO_B4 through ISO_B1	N	R2.0 (Unsupported)	N	N
INTRAY<1-4>STAT	NONE	N	R2.0 (Unsupported)	N	N
	FULL	N	R2.0 (Unsupported)	N	N
	LOW	N	R2.0 (Unsupported)	N	N
	EMPTY	N	R2.0 (Unsupported)	N	N
INTRAY<1-4>TYPE	PAPER	N	R2.0 (Unsupported)	N	N
	INKJETBOND	N	R2.0 (Unsupported)	N	N
	PRESENTATIONBOND	N	R2.0 (Unsupported)	N	N
	FILM	N	R2.0 (Unsupported)	N	N
	VELLUM	N	R2.0 (Unsupported)	N	N
INTRAY<1-4>TYPE (6.2 and Later Release)	BOND	Y	Y	N	Y
	VELLUM	Y	Y	N	Y
	FILM	Y	Y	N	Y
	PHOTOFILM	N	N	N	N

AccXES PJL Interface

	COATEDBOND	N	N	N	N
	INKJET	N	N	N	N
	TRANSPARANCY	N	N	N	N
	SPECIAL	N	N	N	N
IOTMEDIAFAMILY	METRIC	Y	Y	Y	Y
	ENGLISH	Y	Y	Y	Y
	BOTH	Y	Y	Y	Y
IOTSWREV	string <= 32 chars	N	Y	Y	Y
JBA_ACCT_MODE	(DISABLED)	6.2	6.2	Y	Y
	ENABLED	6.2	6.2	Y	Y
	OPTIONAL	6.2	6.2	Y	Y
JBA_USER_ID	string <= 32 chars	6.2	6.2	Y	Y
JBA_ACCT_ID	string <= 32 chars	6.2	6.2	Y	Y
JUSTIFYX	0 to 100	Y	Y	Y	Y
	(LEFT)	Y	Y	Y	Y
	CENTER	Y	Y	Y	Y
	RIGHT	Y	Y	Y	Y
JUSTIFYY	0 to 100	Y	Y	Y	Y
	TOP	Y	Y	Y	Y
	CENTER	Y	Y	Y	Y
	(BOTTOM)	Y	Y	Y	Y
LABELFONT	string <= 32 chars	Y	R1.5	Y	Y
LABELFONTOBJ	string <= 64 chars	Y	R1.5	Y	Y
LABELLOCX	0 to 1200	Y	R1.5	Y	Y
	LEFT	Y	R1.5	Y	Y
	CENTER	Y	R1.5	Y	Y
	RIGHT	Y	R1.5	Y	Y
	LEADING	Y	R1.5	Y	Y
	(TRAILING)	Y	R1.5	Y	Y
LABELLOCY	0 to 1200	Y	R1.5	Y	Y
	TOP	Y	R1.5	Y	Y
	CENTER	Y	R1.5	Y	Y
	(BOTTOM)	Y	R1.5	Y	Y
LABELROTATE	0 to 359 (90)	Y	R1.5	Y	Y
LABELSIZE	6 to 72 (18)	Y	R1.5	Y	Y
LABELSHADING	0 to (100)	Y	R1.5	Y	Y
LABELSTRING	string <= 4096 chars ("")	Y	R1.5	Y	Y
LANG	CZECH	N	N	N	N

AccXES PJL Interface

	DUTCH	N	N	N	N
	ENGLISH	Y	Y	Y	Y
	EURO_SPANISH	Y	Y	Y	Y
	FRENCH	Y	Y	Y	Y
	GERMAN	Y	Y	Y	Y
	ITALIAN	Y	Y	Y	Y
	RUSSIAN	N	N	N	N
	SAMER_PORTUGESE	Y	Y	Y	Y
	SAMER_SPANISH	N	N	N	N
	SWEDISH	N	N	N	N
	TURKISH	N	N	N	N
	UKENGLISH	N	N	N	N
LIGHTNESSADJ	(-10 to +10)	Y	Y	Y	Y
LINEARMEDIAUSAGE	0 to 32768	TBD	Y	TBD	TBD
LINESCALEMODE	{ON, (OFF)}	Y	Y	Y	Y
LOWTONER	{TRUE, FALSE}	Y	Y	Y	Y
LOWINK	{TRUE, FALSE}	N	N	Y	N
MANUALSIZE	ROLL_36	Y	R2.0	N	Y
MANUALSTAT	NONE	N	R2.0	N	N
	FULL	N	R2.0	N	N
	LOW	N	R2.0	N	N
	EMPTY	N	R2.0	N	N
MANUALTYPE (Prior to V8.0 Release)	BOND	Y	Y	N	Y
	VELLUM	Y	Y	N	Y
	FILM	Y	Y	N	Y
	PHOTOFILM	N	N	N	N
	COATEDBOND	N	N	N	N
	INKJET	N	N	N	N
	TRANSPARANCY	N	N	N	N
	SPECIAL	N	N	N	N
MANUALMEDIA (7.5 and Later Release - supercedes MANUALTYPE)	<string>	Y	Y	N	Y
MAXPLOTLEN	48 to (960)	Y	R1.0F	Y	Y
MARGINBOTTOM	0.0 to 100.0 (0.196)	Y	R1.5	Y	Y
MARGINLEFT	0.0 to 100.0 (0.196)	Y	R1.5	Y	Y
MARGINRIGHT	0.0 to 100.0 (0.196)	Y	R1.5	Y	Y
MARGINTOP	0.0 to 100.0 (0.196)	Y	R1.5	Y	Y

AccXES PJL Interface

MEDIASOURCE	(AUTO)	Y	Y	Y	Y
	MANUAL_FD	Y	Y	N	Y
	ROLL1	Y	Y	Y	Y
	ROLL2	Y	Y	Y	Y
	ROLL3	Y	Y	N	Y
	ROLL4	Y	N	N	Y
	TRAY1	N	N	N	N
	TRAY2	N	N	N	N
	TRAY3	N	N	N	N
MEDIATYPE (Prior to V7.5 Release)	PAPER	Maps to BOND	Maps to BOND	N	Maps to BOND
	BOND	Y	Y	N	Y
	VELLUM	Y	Y	N	Y
	FILM	Y	Y	N	Y
	PHOTOFILM	N	N	N	N
	COATEDBOND	N	N	N	N
	INKJET	N	N	N	N
	TRANSPARANCY	N	N	N	N
	SPECIAL	N	N	N	N
MEDIANAME (7.5 and Later Release - supercedes MEDIATYPE)	<string>	Y	Y	Y	Y
VECMINLINEWIDTH	1..10 (1)	R9.5	R9.5	R9.5	Y
MIRRORIMAGE	(MIRROR_OFF)	Y	Y	Y	Y
	MIRROR_X	Y	Y	Y	Y
	MIRROR_Y	Y	Y	Y	Y
	MIRROR_XY	Y	Y	Y	Y
MM_MODE_PAPER	{BLOCK, SCALE, SUBSTITUTE }	Maps to BOND	Maps to BOND	N	Maps to BOND
MM_MODE_VELLUM	{BLOCK, SCALE, SUBSTITUTE }	Y	Y	N	Y
MM_MODE_FILM	{BLOCK, SCALE, SUBSTITUTE }	Y	Y	N	Y
MM_QUEUING	{ON,(OFF)}	Y	R4.0	Y	Y
MODEMPRESENT	{TRUE, FALSE}	Y	Y	Y	Y
NESTINGEXCLUSIVE	{ON, (OFF)}	Y	R4.0	Y	Y
NESTINGLENGTH	8 to maxPlotLength (24)	Y	R4.0	Y	Y
NESTINGMARGIN	0 to 25 (0)	Y	R4.0	Y	Y

AccXES PJL Interface

NESTINGMODE	{ON, (OFF)}	Y	R4.0	Y	Y
NESTINGTIMEOUT	5 to 300 (5)	Y	R4.0	Y	Y
NICHWADDR	string = 17 chars	Y	Y	Y	Y
NICSWREV	string <= 32 chars	Y	Y	Y	Y
NICTYPE	NONE	Y	Y	Y	N
	ETHER10B	Y	Y	Y	N
	ETHER100B	N	N	N	N
	TOKENRING	N	N	N	N
OVERSIZEMARGIN	0 to 100 (1)	Y	R1.0F	Y	Y
OWNER	string <= 48 chars	Y	Y	Y	Y
PAGECOMPENABLE	{ON, (OFF)}	Y	R2.0	Y	Y
PAGECOMPMEDIASOURCE	(AUTO)	Y	R2.0	Y	Y
	MANUAL_FD	Y	R2.0	N	Y
	ROLL1	Y	R2.0	Y	Y
	ROLL2	Y	R2.0	Y	Y
	ROLL3	Y	R2.0	N	Y
	ROLL4	Y	N	N	Y
	TRAY1	N	N	N	N
	TRAY2	N	N	N	N
	TRAY3	N	N	N	N
PAGECOMPMEDIATYPE	(PAPER)	Y	R2.0	N	Y
	INKJETBOND	N	N	N	N
	PRESENTATIONBOND	N	N	N	N
	VELLUM	Y	R2.0	N	Y
	FILM	Y	R2.0	N	Y
	ANY	Y	R2.0	N	Y
PAGECOMPMEDIANAME (Release 7.5 and Later - supercedes PAGECOMPMEDIATYPE)	<string>	Y	Y	Y	Y
PAGECOMPPAPER	(ARCH_E)	Y	R2.0	Y	Y
	LETTER	Y	R2.0	Y	Y
	LEDGER	Y	R2.0	Y	Y
	ANSI_A through ANSI_E	Y	R2.0	Y	Y
	ARCH_A through ARCH_E	Y	R2.0	Y	Y
	ARCH_30	Y	R2.0	Y	Y

AccXES PJL Interface

	ISO_A4 through ISO_A0	Y	R2.0	Y	Y
	ISO_B4 through ISO_B1	N	R2.0	Y	N
	JIS_B4 through JIS_B1	Y	N	Y	Y
PAGECOMPPOSX	(0) to 1200 inches	Y	R2.0	Y	Y
PAGECOMPPOSY	(0) to 1200 inches	Y	R2.0	Y	Y
PAGECOMPROTATE	(0)	Y	R2.0	Y	Y
	90	Y	R2.0	Y	Y
	180	Y	R2.0	Y	Y
	270	Y	R2.0	Y	Y
PAGEROTATE	0	Y	Y	Y	Y
	90	Y	Y	Y	Y
	180	Y	Y	Y	Y
	270	Y	Y	Y	Y
	(AUTO)	Y	Y	Y	Y
PAGESCALING	0 to 999 (100)	Y	Y	Y	Y
	AUTO	Y	Y	Y	Y
PALETTEOVERRIDE	{(ON), OFF}	N	(obsolete in R1.5)	N	N
PAPER * Note - X2 page sizes smaller than 24" are only supported on the 36" version of the printer, not on the 54" version.	(ANY)	Y	Y	Y	Y
	ANY_ANSI	Y	R1.0F	Y	Y
	ANY_ARCH	Y	R1.0F	Y	Y
	ANY_ISO	Y	R1.0F	Y	Y
	ANY_ROLL	Y	R1.0F	Y	Y
	ANY_JIS	Y	N	Y	Y
	LETTER	Y	Y	Y	Y
	LEDGER	Y	R1.5	Y	Y
	ANSI_A through ANSI_E	Y	Y	Y*	Y
	ARCH_A through ARCH_E	Y	Y	Y*	Y
	ARCH_30	Y	Y	Y	Y
	ISO_A4 through ISO_A0	Y	Y	Y*	Y
	ISO_B4 through ISO_B1	N	R1.5	Y	N

AccXES PJL Interface

JIS_B4 through JIS_B1	Y	N	Y*	Y
ROLL_A0	Y	Y	Y	Y
ROLL_A0+	N	Y	Y	N
ROLL_A0++	Y	Y	Y	Y
ROLL_A1	Y	Y	Y	Y
ROLL_A1+	N	Y	Y	N
ROLL_A2	Y	Y	Y	Y
ROLL_A3	Y	Y	Y	Y
ROLL_A4	Y	N	N	Y
ROLL_B1	N	R1.5	Y	N
ROLL_B2	N	R1.5	Y	N
ROLL_B3	N	R1.5	Y	N
ROLL_JIS_B1	Y	N	Y	Y
ROLL_JIS_B2	Y	N	Y	Y
ROLL_JIS_B3	Y	N	Y	Y
ROLL_JIS_B4	Y	N	Y*	Y
ROLL_750	N	Y	Y	N
ROLL_891	Y	N	Y	Y
ROLL_900	Y	Y	Y	Y
ROLL_8_5	Y	N	N	Y
ROLL_11	Y	Y	Y*	Y
ROLL_17	Y	Y	Y*	Y
ROLL_22	Y	Y	Y*	Y
ROLL_34	Y	Y	Y	Y
ROLL_30	Y	Y	Y	Y
ROLL_9	Y	N	N*	Y
ROLL_12	Y	Y	Y*	Y
ROLL_18	Y	Y	Y*	Y
ROLL_24	Y	Y	Y	Y
ROLL_36	Y	Y	Y	Y
ROLL_14	N	N	Y*	N
ROLL_15	N	N	Y*	N
ROLL_21	N	N	Y*	N
ROLL_38	N	N	Y	N
ROLL_42	N	N	Y	N
ROLL_44	N	N	Y	N
ROLL_48	N	N	Y	N
ROLL_50	N	N	Y	N

AccXES PJL Interface

	ROLL_53	N	N	Y	N
	ROLL_54	N	N	Y	N
PARALLELENABLE	{(ON), OFF}	Y	Y	Y	Y
PASSWORD	(0) to 65535	Y	Y	Y	Y
PENPALETTE	string <= 32 chars ("")	Y	R1.5	Y	Y
PERSONALITY	(AUTO)	Y	Y	Y	Y
	ASCII	N	N	N	N
	CALCOMP	Y	Y	Y	Y
	CALS1	Y	Y	Y	Y
	CALS2	Y	Y	Y	Y
	CGM	N	N	N	N
	VRASTER	Y	Y	Y	Y
	HPGL	Y	Y	Y	Y
	HPGL2	Y	Y	Y	Y
	HPGL758X	Y	Y	Y	Y
	PCL	N	N	N	N
	POSTSCRIPT	N	N	N	N
	TIFF6	Y	Y	Y	Y
	JPEG	Y (R8.0)	Y (R8.0)	Y	Y
	FLASH	Y	Y	Y	Y
	HP-GL/2	Y	Y	Y	Y
	DOWNLOAD	Y	Y	Y	Y
	VDS	Y	Y	Y	Y
	VCGL	Y	Y	Y	Y
	C4	Y	Y	Y	Y
	FILENET	Y	Y	Y	Y
PMTREFRESH	5 to 3600 (10)	Y	Y	Y	Y
PRINTERNAME	string <= 64 chars	Y	Y	Y	Y
PRIORITY	1 to 10 (5)	Y	Y	Y	Y
PRTACCTMODE	(DISABLED)	Y	R4.0	Y	Y
	ENABLED	Y	R4.0	Y	Y
	OPTIONAL	Y	R4.0	Y	Y
PSDEFAULTPAPER	ANSI_A through ANSI_E	Y	Y	Y	Y
	ARCH_A through ARCH_E	Y	Y	Y	Y
	ARCH_30	Y	Y	Y	Y

AccXES PJL Interface

	ISO_A4 through ISO_A0	Y	Y	Y	Y
	ISO_B4 through ISO_B1	N	Y	Y	N
	JIS_B4 through JIS_B1	Y	N	Y	Y
PSHALFTONE	(SCREEN)	Y	Y	Y	Y
	ERRORDIFFUSION	Y	Y	Y	Y
EPS	(OFF)	Y	Y	Y	Y
	ON	Y	Y	Y	Y
USECIECOLOR	(OFF)	Y	Y	Y	Y
	ON	Y	Y	Y	Y
PDFOPTIMIZE	(ON)	Y	Y	Y	Y
	OFF	Y	Y	Y	Y
PWRSVRTORESTDLY	0 to 32768	Y	Y	Y	Y
QUALITYMODE	(FAST)	N	N	Y	N
	NORMAL	N	N	Y	N
	BEST	N	N	Y	N
RAMSIZE	0 to 2^{31}-1	Y	Y	Y	Y
RASTERHALFTONEOPT	(ERRORDIFFUSION)	Y	Y	Y	Y
	SCREEN	Y	Y	Y	
RASTERSTAMPID	string <= 32 chars ("")	N	N	N	N
RASTERSTAMPLOCX	0 to 1200	Y	R2.0	Y	Y
	LEFT	Y	R2.0	Y	Y
	(CENTER)	Y	R2.0	Y	Y
	RIGHT	Y	R2.0	Y	Y
RASTERSTAMPLOCY	0 to 1200	Y	R2.0	Y	Y
	BOTTOM	Y	R2.0	Y	Y
	(CENTER)	Y	R2.0	Y	Y
	TOP	Y	R2.0	Y	Y
RASTERSTAMPROTATE	{(0), 90, 180, 270}	Y	R2.0	Y	Y
RASTERSTAMPSCALEMODE	(RELATIVE)	Y	R2.0	Y	Y
	ABSOLUTE	Y	R2.0	Y	Y
RASTERSTAMPSCALING	{10 - 999} (100)	Y	R2.0	Y	Y
RDYTOPWSVRDLY	0 to 32768	Y	Y	Y	Y
RENDERMODE	COLOR	N	N	(Y)	N
	GRAYSCALE	N	N	Y	N
RESOLUTION	300 to 1200	Y (400)	Y (400)	Y (720)	Y(600)

AccXES PJL Interface

SCANNERPROD	String <= 32 chars	Y	R2.0	Y	Y
SCANNERREV	String <= 32 chars	Y	R2.0	Y	Y
SCANNERTYPE	(NONE)	Y	Y	Y	Y
	7356	Y	Y	N	Y
	7346	N	R4.0	N	N
	INTERCEPTOR	Y	Y	Y	Y
SCANNERVEND	String <= 32 chars	Y	R2.0	Y	Y
SCANNERID	String, formatted as follows: XX:XX:XX:XX:XX:XX	R6.0	R6.0	Y	Y
SCSITARGETID	0 to 7 (5)	Y	Y	Y	Y
SCSIENABLE	{(ON), OFF}	Y	Y	Y	Y
SCSITERMENABLE	{(ON), OFF}	Y	Y	Y	Y
SERIALBAUD	300 to 19200 (9600)	Y	Y	Y	Y
SERIALENABLE	{(ON), OFF}	Y	Y	Y	Y
SERIALFLOWCTL	XON_XOFF	Y	Y	Y	Y
	RTS_CTS	Y	Y	Y	Y
	BOTH	Y	Y	Y	Y
	(NONE)	Y	Y	Y	Y
SERIALPARITY	EVEN	Y	Y	Y	Y
	ODD	Y	Y	Y	Y
	(NONE)	Y	Y	Y	Y
SINGLEPGJOB	{(DISABLED), NABLED, <Any Roll Size>}	R9.5	R9.5	R9.5	Y
TIFF1BITPHOTO	(FILECONTROL)	Y	R1.5	Y	Y
	IGNOREMINISBLAC	Y	R1.5	Y	Y
TIMEOUT	(5) to 300	Y	Y	Y	Y
TITLEBLOCK	DONTCARE	R6.0	R6.0	N	Y
	UPPERLEFT	R6.0	R6.0	N	Y
	UPPERRIGHT	R6.0	R6.0	N	Y
	LOWERLEFT	R6.0	R6.0	N	Y
	LOWERRIGHT	R6.0	R6.0	N	Y
TOKENTALKENABLE	{ON, (OFF)}	N	N	N	N
TOKENTALKTYPE	string <= 32 chars	N	N	N	N
TOKENTALKZONE	string <= 32 chars	N	N	N	N
TOKENTCPIPADDR	string = 12 chars	N	N	N	N
TOKENTCPIPENABLE	{(ON), OFF}	N	N	N	N
UNDERSIZEMARGIN	0 to 100 (2)	Y	R1.0F	Y	Y

AccXES PJL Interface

USEMARKEDAREA	{ON, (OFF)}	Y	R1.0G. 02	Y	Y
VCGCOLOR	FILECONTROL	Y	R 5.0	Y	Y
	FORCEBLACKONWHITE	Y	R 5.0	Y	Y
VCGPALETTE	String <= 0-9 chars	Y	R 5.0	Y	Y
VCGPALETTESOURCE	PRINTER, JOB	Y	R 5.0	Y	Y
VCGLRESOLUTION	100	Y	R 5.0	Y	Y
	200	Y	R 5.0	Y	Y
	300	Y	R 5.0	Y	Y
	400	Y	R 5.0	Y	Y
VCHARSET	(ASCII)	Y	Y	Y	Y
	EBCDIC	Y	Y	Y	Y
VDSCHARSET	(ASCII)	Y	R1.5	Y	Y
	EBCDIC	Y	R1.5	Y	Y
VDEVLINEBYTES	10 to 3000 (128)	Y	R1.0F	Y	Y
VDEVLINECHARS	10 to 2000 (128)	Y	R1.0F	Y	Y
VDSPALETTE	String <= 32 chars	Y	R1.5	Y	Y
VDSPALETTESOURCE	(JOB)	Y	R1.5	Y	Y
	PRINTER	Y	R1.5	Y	Y
VECTORHALFTONEOPT	(AREAFILL)	Y	R2.0.01	Y	Y
	LINE	Y	R2.0.01	Y	Y
VRASTEREMUL	7222	Y	Y	Y	Y
	7224	Y	Y	Y	Y
	7225	Y	Y	Y	Y
	7236	Y	Y	Y	Y
	7422	Y	Y	Y	Y
	7424	Y	Y	Y	Y
	7425	Y	Y	Y	Y
	7436	Y	Y	Y	Y
	8222	Y	Y	Y	Y
	8224	Y	Y	Y	Y
	8236	Y	Y	Y	Y
	8524	Y	Y	Y	Y
	8524HRA	Y	Y	Y	Y
	8524HR1	Y	Y	Y	Y
	8510	Y	Y	Y	Y

AccXES PJL Interface

	8536	Y	Y	Y	Y
	8536HR	Y	Y	Y	Y
	8624A	Y	Y	Y	Y
	8624I	Y	Y	Y	Y
	8624HRA	Y	Y	Y	Y
	8624HRI	Y	Y	Y	Y
	8636	Y	Y	Y	Y
	8636HR	Y	Y	Y	Y
	8770_24	Y	Y	Y	Y
	8770_24I	Y	Y	Y	Y
	8770_36	Y	Y	Y	Y
	8830SERVEWARE	Y	R2.0	Y	Y
	(8830)	Y	Y	Y	Y
	8845	Y	Y	Y	Y
	CUSTOM	Y	R1.0F	Y	Y
VRESOLUTION	(100)	Y	R1.0F	TBD	Y
	200	Y	R1.0F	TBD	Y
	300	Y	R1.0F	TBD	Y
	400	Y	R1.0F	TBD	Y
VPIENABLE	{(ON), OFF}	Y	Y	Y	Y
VPITIMOUTENABLE	{ON, (OFF)}	Y	Y	Y	Y