

**parallel**

**COLLABORATORS**

	<i>TITLE :</i> parallel		
<i>ACTION</i>	<i>NAME</i>	<i>DATE</i>	<i>SIGNATURE</i>
WRITTEN BY		March 14, 2022	

**REVISION HISTORY**

NUMBER	DATE	DESCRIPTION	NAME

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# Chapter 1

## parallel

### 1.1 parallel.doc

```
CMD_CLEAR
CMD_FLUSH
CMD_READ
CMD_RESET
CMD_START
CMD_STOP
CMD_WRITE
OpenDevice()
PDCMD_QUERY
PDCMD_SETPARAMS
```

### 1.2 parallel.device/CMD\_CLEAR

#### NAME

Clear -- clear the parallel port buffer

#### FUNCTION

This command just RTS's (no buffer to clear)

#### IO REQUEST

```
io_Message      mn_ReplyPort initialized
io_Device       set by OpenDevice
io_Unit         set by OpenDevice
io_Command      CMD_CLEAR (05)
```

### 1.3 parallel.device/CMD\_FLUSH

#### NAME

Flush -- clear all queued I/O requests for the parallel port

#### FUNCTION

This command purges the read and write request queues for the parallel device. The currently active request is not purged.

#### IO REQUEST

io_Message	mn_ReplyPort initialized
io_Device	set by OpenDevice
io_Unit	set by OpenDevice
io_Command	CMD_FLUSH (08)

### 1.4 parallel.device/CMD\_READ

#### NAME

Read -- read input from parallel port

#### FUNCTION

This command causes a stream of characters to be read from the parallel I/O register. The number of characters is specified in `io_Length`. The EOF and EOL modes are supported, but be warned that using these modes can result in a buffer overflow if the proper EOL or EOF character is not received in time. These modes should be used only when the sender and receiver have been designed to cooperate. A safety guard can be implemented to EOF by setting `io_Length` to a maximum allowed value. That cannot be done with EOL since the EOL mode is identified by `io_Length=-1`.

The parallel.device has no internal buffer; if no read request has been made, pending input (i.e. handshake request) is not acknowledged.

#### IO REQUEST

io_Message	mn_ReplyPort initialized
io_Device	set by OpenDevice
io_Unit	set by OpenDevice
io_Command	CMD_READ (02)
io_Flags	If IOF_QUICK is set, driver will attempt Quick IO
io_Length	number of characters to receive.
io_Data	pointer where to put the data.

#### RESULTS

`io_Error` -- if the Read succeeded, then `io_Error` will be null.  
If the Read failed, then `io_Error` will contain an error code.

#### SEE ALSO

parallel.device/PDCMD\_SETPARAMS

## 1.5 parallel.device/CMD\_RESET

### NAME

Reset -- reinitializes the parallel device

### FUNCTION

This command resets the parallel device to its freshly initialized condition. It aborts all I/O requests both queued and current and sets the devices's flags and parameters to their boot-up time default values. At boot-up time the PTermArray is random, and it will be so also here.

### IO REQUEST

io_Message	mn_ReplyPort initialized
io_Device	set by OpenDevice
io_Unit	set by OpenDevice
io_Command	CMD_RESET (01)

### RESULTS

Error -- if the Reset succeeded, then io\_Error will be null.  
if the Reset failed, then the io\_Error will be non-zero.

## 1.6 parallel.device/CMD\_START

### NAME

Start -- restart paused I/O over the parallel port

### FUNCTION

This command restarts the current I/O activity on the parallel port by reactivating the handshaking sequence.

### IO REQUEST

io_Message	mn_ReplyPort initialized
io_Device	set by OpenDevice
io_Unit	set by OpenDevice
io_Command	CMD_START (07)

### SEE ALSO

parallel.device/CMD\_STOP

## 1.7 parallel.device/CMD\_STOP

### NAME

Stop -- pause current activity on the parallel device

### FUNCTION

This command halts the current I/O activity on the parallel device by discontinuing the handshaking sequence. The stop and start commands may not be nested.

---

```

IO REQUEST
io_Message      mn_ReplyPort initialized
io_Device       set by OpenDevice
io_Unit         set by OpenDevice
io_Command      CMD_STOP (06)

```

SEE ALSO

parallel.device/CMD\_START

## 1.8 parallel.device/CMD\_WRITE

NAME

Write -- send output to parallel port

FUNCTION

This command causes a stream of characters to be written to the parallel output register. The number of characters is specified in `io_Length`, unless `-1` is used, in which case output is sent until a zero byte occurs in the data. This is independent of, and may be used simultaneously with setting the `EOFMODE` in `io_ParFlags` and using the `PTermArray` to terminate the read or write.

```

IO REQUEST
io_Message      mn_ReplyPort initialized
io_Device       set by OpenDevice
io_Unit         set by OpenDevice
io_Command      CMD_WRITE (03)
io_Flags        If IOF_QUICK is set, driver will attempt Quick IO
io_Length       number of characters to transmit, or if set
                to -1 send until zero byte encountered
io_Data         pointer to block of data to transmit

```

RESULTS

`io_Error` -- If the Write succeeded, then `io_Error` will be null.  
 If the Write failed, then `io_Error` will contain an error code.

SEE ALSO

parallel.device/PDCMD\_SETPARAMS

## 1.9 parallel.device/OpenDevice

NAME

Open -- a request to open the parallel port

SYNOPSIS

```

error = OpenDevice("parallel.device", unit, ioExtPar, flags)
D0          A0          D0      A1          D1

```

## FUNCTION

This function allows the requestor software access to the parallel device. Unless the shared-access bit (bit 5 of `io_ParFlags`) is set, exclusive use is granted and no other access is allowed until the owner closes the device.

A `FAST_MODE`, can be specified (bit 3 of `io_Parflags`) to speed up transfers to high-speed printers. Rather than waiting for the printer to acknowledge a character using the `*ACK` interrupt, this mode will send out data as long as the `BUSY` signal is low. The printer must be able to raise the `BUSY` signal within 3 micro-seconds on A2630s, otherwise data will be lost. Should be used only in an exclusive-access `Open()`.

A `SLOWMODE` mode can be specified (bit 4 of `io_ParFlags`) when very slow printers are used. If the printer acknowledges data at less than 5000 bytes per second, then this mode will actually save CPU time, although it consumes much more with high-speed printers.

The `PTermArray` of the `ioExtPar` is initialized only if the `EOFMODE` bit (bit 1 of `io_ParFlags`) is set. The `PTermArray` can be further modified using the

```
PDCMD_SETPARAMS
command.
```

## INPUTS

`"parallel.device"` - a pointer to literal string `"parallel.device"`  
`unit` - Must be zero for future compatibility  
`ioExtPar` - pointer to an IO Request block of structure `IOExtPar` to be initialized by the `Open()` function. The `io_ParFlags` field must be set as desired.  
`flags` - Must be zero for future compatibility

## RESULTS

`d0` -- same as `io_Error`  
`io_Error` -- if the `Open` succeeded, then `io_Error` will be null.  
 If the `Open` failed, then `io_Error` will be non-zero.

## SEE ALSO

`exec/CloseDevice()`

## 1.10 parallel.device/PDCMD\_QUERY

## NAME

`Query` -- query parallel port/line status

## FUNCTION

This command return the status of the parallel port lines and registers.

## IO REQUEST

<code>io_Message</code>	must have <code>mn_ReplyPort</code> initialized
<code>io_Device</code>	set by <code>OpenDevice</code>
<code>io_Unit</code>	set by <code>OpenDevice</code>



io\_Command PDCMD\_QUERY (09)

#### RESULTS

io_Status	BIT	ACTIVE	FUNCTION
	0	high	printer busy toggle (offline)
	1	high	paper out
	2	high	printer selected on the A1000 printer selected & serial "Ring Indicator" on the A500/A2000 Use care when making cables.
	3	-	read=0,write=1
	4-7		reserved

#### BUGS

In a earlier version of this AutoDoc, BUSY and PSEL were reversed. The function has always been correct.

## 1.11 parallel.device/PDCMD\_SETPARAMS

#### NAME

SetParams -- change parameters for the parallel device

#### FUNCTION

This command allows the caller to change the EOFMODE parameter for the parallel port device. It will disallow changes if any reads or writes are active or queued.

The PARB\_EOFMODE bit of io\_ParFlags controls whether the io\_PTermArray is to be used as an additional termination criteria for reads and writes. It may be set directly without a call to SetParams, setting it here performs the additional service of copying the PTermArray into the device default array which is used as the initial array for subsequent device opens. The Shared bit can be changed here, and overrides the current device access mode set at OpenDevice time.

#### IO REQUEST

io_Message	mn_ReplyPort initialized
io_Device	preset by OpenDevice
io_Unit	preset by OpenDevice
io_Command	PDCMD_SETPARAMS (0A)
	NOTE that the following fields of your IORequest are filled by Open to reflect the parallel device's current configuration.
io_PExtFlags	must be set to zero, unless used
io_ParFlags	see definition in parallel.i or parallel.h NOTE that x00 yields exclusive access, PTermArray inactive.
io_PTermArray	ASCII descending-ordered 8-byte array of termination characters. If less than 8 chars used, fill out array w/lowest valid value. Terminators are used only if EOFMODE bit of io_Parflags is set. (e.g. x512F040303030303 ) This field is filled on OpenDevice only if the

EOFMODE bit is set.

RESULTS

io\_Error -- if the SetParams succeeded, then io\_Error will be null.  
          if the SetParams failed, then io\_Error will be non-zero.

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