5.3 DFP Operation

Once DFP mode is enabled, four commands (**Request**, **Status**, **Read**, & **Write**) are used for communications. The procedure for a standard transaction is as follows.

1. A **Request** command is sent to the part seeking permission for the transaction.
2. The **Status** command is used to determine that the request is permitted.
3. Upon acceptance of the request, a **Read** or **Write** command is issued.

Each of these commands will be described below with examples in the next section.

Request (0x3C)

The request command is used to initiate and request permission for a transfer. It is a write with the following elements:

Addr - Pack address. In all the examples, this will be 0x0B and since this is a write, it will appear on the bus as 0x17. That is, the address shifted up is 0x16 and this becomes 0x17 with the addition of the write bit.

CMD - Command code. For the Request command, this will always be 0x3C

LEN- Length of request.

R/W - Read/Write flag. This will be a 0 for a read request and a 1 for write request

File - This is the internal file number.

Start – this is the starting element (chunk) number.

Count – this is the number of elements (chunks) to be read or written.

Transaction Format:

Byte	1	2	3	4	5	6	7	8	9
Contents	Addr	CMD	LEN	R/W	File		Start		Count

Status (0x3D)

The status command is used to determine the system status and to determine if a request has been granted. It is a write of the command followed by a read with the following elements

Addr - Pack address.

CMD - Command code. For the Status command, this will always be **0x3D**

Response – This is a 16 bit reply from the PL116. The possible meanings are shown in the table below. Non published response should be considered an error.

Status	Meaning
0x0000	OK – The access requested is granted. The last command passed
0x00FF	Busy – the system is busy with a prior command
0x0001	The access level must be 1 or higher to permit the request
0x0002	The access level must be 2 or higher to permit the request
0x0003	The access level must be 3 or higher to permit the request
0x0004	The file number requested does not exist
0x0005	The request cannot be performed
0x0006	The size of the request is too large
0x0007	Firmware download failed
0x0008	Firmware download successful
0x0009	The start address of the request is invalid
0x000A	An illegal command was received

Transaction Format:

Byte	1	2	3	4
Contents	Addr	CMD	Response	

Note: When a BUSY 0x00FF response is received, it indicates the part is busy processing the previous request. Continue to issue Status commands until a response of 0x0000 is received.

Write (0x3E)

The Write command is a write with the following elements:

Addr - Pack address.

CMD - Command code**. For the Status command, this will always be 0x3E**

Count- Length of data to follow in bytes.

Data – This is the data being sent to the system.

Transaction Format:

Byte	1	2	3	4…..N
Contents	Addr	CMD	Count	Data…

Read (0x3F)

The Read command is a write followed by a read with the following elements:

Addr - Pack address.

CMD - Command code **For the Status command, this will always be 0x3F**

Count – This is a byte count of the number of bytes to be read

Data – The data sent back from the system

Transaction Format:

Byte	1	2	3	4…..N
Contents	Addr	CMD	Count	Data…