



Title	Vendor Specific Function
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1. Function Description

Four Vendor functions are included in this specification. The first two functions are providing you an interface to access the USB to IDE GPIO control and data register. The next two functions provide you a way to access the External Serial EEPROM using GPIO[4..7].

2. Vendor Specific Function

Table 2.1 Request Codes

Brequest	Value
V_GET_IO	0
V_SET_IO	1
V_RE_SEEROM	2
V_WR_SEEROM	3

Table 2.2 IO_INDEX

Brequest	Value
GPIO_L	0x17
GPIOCTL_L	0x18

Table 2.3 IO_INDEX

Brequest	Value
GPIOH	0x19
GPIOCTL_H	0x1A

2.1 V_GET_IO

- To access the GPIO control register is using the 8 bytes USB request packet provided by USB to IDE interface.

bmRequestType	BRequest	wValue	wIndex	wLenth	Data
11000001b	V_GET_IO	0x0000	IO_INDEX (H) 00h(L)	0x0001	Register Value

- The wIndex field specifies the Interface in low byte and IO_INDEX in high byte. The IO_INDEX value is listed in table 2.2 & 2.3.
- This function will return one byte data if the request success.

2.2 V_SET_IO

- To access the GPIO control register is using the 8 bytes USB request packet provided by USB to IDE interface.

bmRequestType	BRequest	wValue	wIndex	wLenth	Data
01000001b	V_SET_IO	IO_DATA	IO_INDEX (H) 00h(L)	0x00	None

- The wIndex field specifis the Interface in low byte and IO_INDEX in high byte. The IO_INDEX value is listed in table 2.3.
- The wValue field specifis byte data to be written in low byte. 0 should be written in high byte.

2.3 V_RE_SEEROM

- To read the external serial EEPROM 93C46 is using the 8 bytes USB request packet provided by USB to IDE interface.

bmRequestType	BRequest	wValue	wIndex	wLenth	Data
11000001b	V_RE_SEEPROM	0x0000	BINDEX (H) 00h (L)	0x0002	WORD

- The wIndex field specifis the Interface in low byte and offset bINDEX in high byte.
- The wValue should be 0.
- The returned data is in WORD length stored in Serial EEROM offset bINDEX.

2.4 V_WR_SEEROM

- To program the GPIO control register is using the 8 bytes USB request packet provided by USB to IDE interface.

bmRequestType	BRequest	wValue	wIndex	wLenth	Data
01000001b	V_WR_SEEROM	Word Data	bINDEX (H) 00h(L)	0x00	None

- The wIndex field specifis the Interface in low byte and offset bINDEX in high byte.
- The returned data is in WORD length stored in Serial EEROM offset bINDEX.
- Approximately 15ms delay for data written.

3. Serial EEROM Data Structure

3.1 Data Structure

Offset	Data
0	wVendorID
1	WProductID
2	Initial HD delay Time (LB) MaxPower (HB)
3	Configuration Byte-2(LB) ATAPI PIDL (HB)
4	Vendor String Descriptor offset (LB) Product String Descriptor offset (HB)
5	Serial Number String Descriptor offset (LB) Interface String Descriptor offset (HB)
6	Configuration Byte(LB) Checksum(HB)
7 . . 127	String Descriptpor

3.1.1 Vendor, Product ID

The first word is the VendorID in hex, The Second Word is Product ID. The low byte is the low byte of the product ID of ATA device. If the device is the ATAPI then the low byte of the product ID is stored in the 'ATAPI PIDL'.

3.1.2 Initial HD Delay Time

Delay time to enalbe the HD. 0-255, 108ms/unit.

3.1.3 Maxmium Power

The Maxmium Power, 0-255. Resolution 2ma.

3.1.4 ATAPI PIDL

The low byte of product ID of ATAPI device.

3.1.5 Vendor String Descriptor Offset

Vendor String Descriptor offset in the SEEROM, Word size.

3.1.6 Product String Descriptor Offset

Vendor String Descriptor offset in the SEEROM, Word size.

3.1.7 Serial Number String Descriptor Offset

Serial-Number String Descriptor offset in the SEEROM, Word size.

3.1.8 Interface String Descriptor String Offset

Interface String Descriptor offset in the SEEROM, Word size.

3.1.9 Configuration Byte & Checksum

The checksum rule is:

Checksum = Byte0 (L) + Byte0 (H)
 + Byte1 (L) + Byte1 (H)
 + Byte2 (L) + Byte2 (H)
 + Byte3 (L) + Byte3 (H)
 + Byte4 (L) + Byte4 (H)
 + Byte5 (L) + Byte5 (H)
 + Byte6 (L) + AAh (hex)

3.2 Configuration Byte - 1

Configuration Byte:

Bit 0: Master/Slave

Master	0
Slave	1

Bit 1: Bus/Self Power

Bus Power	0
Self Power	1

Bit 2:UDMA MODE 4 enable

Default	0
UDMA mode 4 supported	1

Note: If this bit is not enabled , we will support up to UDMA mode 3.

Bit 3: Support Harddisk Suspend

Default	0
Suspend	1

Bit 4: Gpio1 power detect supported

Default	0
Supported	1

Bit 5: ATA UDMA supported

Default	0
Supported	1

Bit 6: ATAPI UDMA supported

Default	0
Supported	1

Bit 7: ATAPI startup delay supported

Default	0
Supported	1

Note: If ATAPI startup delay is enable , the startup delay time is the same as “Initial HD delay time”, since ATA and ATAPI devices don’t exist in the same time.



3.3 Configuration Byte - 2

Bit 0 - Loss packet control

Disable	0
Enable	1

Bit 1-Subclass code for ATAPI device – see USB storage class specification overview. (Page 7). Default value is 06h.

06h-SCSI transparent command set	0
02h-SFF8020I	1