Apple II
Technical Notes

$\square$

Developer Technical Support

SmartPort
#2:   SmartPort Calls Updated

Revised by: Llew   Roberts
          September 1989
Written by: Mike Askins   May
    1985

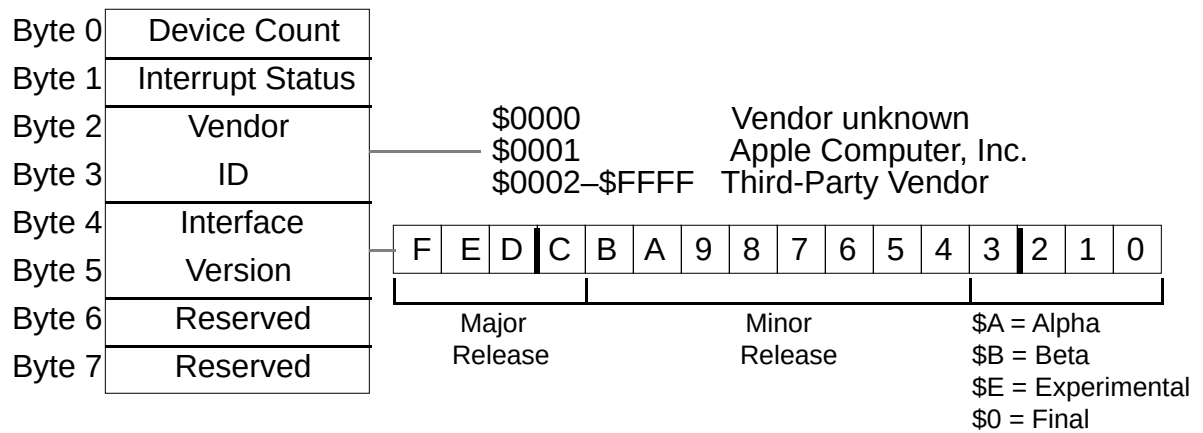This Technical Note documents SmartPort call information which is not found in the descriptions of SmartPort in the *Apple IIGS Firmware Reference* and the *Apple IIc Technical Reference Manual, Second Edition*. The device-specific information which had been included in this Note is now found in these manuals.

Changes since November 1988: Added diagram and information on vendor ID numbers.

STATUS Calls

A `STATUS` call with unit number = $00 and status code = $00 is a request to return the status of the SmartPort **host**, as opposed to unit numbers greater than zero which return the status of individual devices. The number of devices as well as the current interrupt status is returned. The format of the status list returned is illustrated in Figure 1.

Byte 0	Device Count
Byte 1	Interrupt Status
Byte 2	Vendor
Byte 3	ID
Byte 4	Interface
Byte 5	Version
Byte 6	Reserved
Byte 7	Reserved

$0000   Vendor unknown
$0001   Apple Computer, Inc.
$0002–$FFFF   Third-Party Vendor

F	E	D	C	B	A	9	8	7	6	5	4	3	2	1	0

Major Release   Minor Release $A = Alpha
$B = Beta
$E = Experimental
$0 = Final

Figure 1–Host General Status Return Information

```
Stat_list            byte 0   Number of devices
            byte 1      Interrupt Status (If bit 6 is set, then no interrupt)
            bytes 2-3   Driver manufacturer (were reserved prior to May 1988):
                        $0000            Undetermined
                        $0001            Apple
                        $0002–$FFFF      Third-party driver
            bytes 4-5   Interface Version
            bytes 6-7   Reserved (must be $0000)
```

The Number of devices byte tells the caller the total number of devices hooked to this slot or port.

The Interrupt Status byte is used by programs which try to determine if the SmartPort was the source of an interrupt. If bit 6 of this byte is clear, there is a device (or devices) in the chain that require interrupt service. You cannot use this value to determine which device in the chain is actually interrupting. Your interrupt handler, having determined that a SmartPort interrupt has occurred, must poll each device on the chain to find out which device requires service. The UniDisk 3.5 and Memory Expansion Card do not generate interrupts, so in these cases, this byte has bit 6 set.

The vendor ID number may be used to determine the manufacturer of a specific SmartPort peripheral interface card, a useful piece of information when dealing with device-specific calls. Contact Apple Developer Technical Support if you require a specific vendor ID number. The version word follows the SmartPort Interface Version definition described later in this Note.

CONTROL Codes

Before May 1988, control code $04 was defined as device-specific. It is now defined as `EJECT`, and all SmartPort devices which support removable media must support this call. If a device does not support removable media, it should simply return from this call without an error.

Note that the Apple II SCSI card firmware was revised in early 1988 to support this change.

INIT

An application should **never** make an `INIT` call (SmartPort code $05), since doing so is likely to destroy operating system integrity and may cause media damage as well.

If you are writing your own operating system (not encouraged) and need to reset all SmartPort devices, the `INIT` call with unit number = $00 will do just that. Note that SmartPort devices **cannot** be selectively reset, and `INIT` must **never** be made at all with any unit number other than $00.

SmartPort Interface Version Definition

The SmartPort Interface Version definition uses the most significant nibble of the word as the

major version number, the next two most significant nibbles as the minor version number, and the least significant nibble as a release indicator:

$0 = Final $A = Alpha $B = Beta $E = Experimental

Therefore, the interface version word for an experimental SmartPort interface 1.15 would be $115E while the interface version word for SmartPort interface 2.0 would be $2000. GS/OS driver version numbers also follow this definition.

Further Reference
- *Apple IIGS Firmware Reference*
- *Apple IIc Technical Reference Manual, Second Edition*
- *Apple IIGS Technical Note #25,* Apple IIGS Firmware Reference *Updates*