Bt878/879

Programming an EEPROM for the Bt878/879 Application Note

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Programming an EEPROM for the Bt878/879

The Fusion (Bt878/879) series integrated circuit can retrieve Subsystem Identification and Subsystem Vendor Identification (SSID/SSVID) numbers from an external, serial EEPROM. This capability complies with the Peripheral Component Interconnect (PCI) specification, PC 98, and meets the requirements of Windows Hardware Quality Lab (WHQL). The EEPROM is used to load the SSVID into registers in the Bt878/879's configuration space. The operating system, the BIOS, and drivers read these registers every time the Fusion device is reset via software or hardware (PCI reset). This application note explains these identification numbers and how to work with them.

The SSID is a 16-bit, vendor specific number that can be pre-defined by a manufacturer of a video capture card. It is located at address 0x2E in the PCI configuration space. The LSB of the ID corresponds to the LSB of its starting address. This ID can be any informative number the manufacturer wishes to store. For example, some companies use this number as the serial number of the card. Others use it for the revision number of the card. There is no standard for choosing the SSID.

The SSVID, a company's unique ID number, is assigned to a company by the PCI Special Interest Group (SIG) when the company has completed the proper procedures. To get an SSVID, the vendor must join the PCI SIG, a registration group. This number is stored at address 0x2C in the PCI configuration space. The LSB of the ID corresponds to the LSB of its starting address. The computer uses this number to identify the vendor of the add-in board or subsystem when it is placed in the computer. The PCI SIG can be contacted via the World Wide Web at: www.pcisig.com.

Once an SSID is determined and the SSVID is obtained, they are programmed into a serial, I^2C compatible EEPROM. These numbers have to be in a specific location in the EEPROM (starting at address 0xFC). Thus, 256 bytes is the minimum size for the EEPROM. However, no manufacturers currently make serial EEPROMs less than 1 k bytes in size. Please refer to Table 1 for details and Table 2 for recommended vendor information.

Table 1. EEPROM Addresses

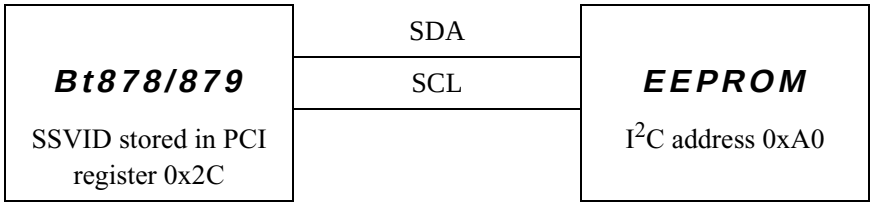
Address	0xFC	0xFD	0xFE	0xFF
Data	SSID		SSVID	

Table 2. Recommended Vendor/Device

Vendor	**Device**
ATMEL	AT24C01A/2/4/8/16

The EEPROM itself has a specific I^2C address of 0xA0. Please refer to Figure 1. Once the system has performed either a software or hardware reset, register 0x2E on the Bt878/879 will contain the SSID and register 0x2C will contain the SSVID. The rest of the EEPROM can be used to store any other data that the board manufacturer desires. Rockwell provides a software utility called EEPROM.EXE to program an EEPROM populated on a board. This program requires a user to enter the Chip Address (0xA0) and the Chip Data (4 hex bytes containing both the subsystem and system ID).

Figure 1. Bt878/879 Register and EEPROM Address



Minimum EEPROM size: 512 bytes

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