Date: April 30, 2002
To: Avnet
CC:
From: Kenn Gordon
Re: MAC address programming of EEPROMS for the DJ35 and Sahara Projects

Manufacturer/model/package of EEPROM to program

INDEX	REF DES	QTY	DESCRIPTION	Fullplay P/N	Manufacturer	Manufacturer P/N
47	U20	150	IC Serial EEPROM 64 x 16	300-0001-03	Atmel	AT93C46A-10SI-2.7

Programming

Each chip must be programmed with a unique MAC address. Eight words are required to be programmed on to each chip. The table below illustrates what is to be programmed. **Boldfaced** items will be the data changed from chip to chip.

0h	1h	2h	3h	4h	5h	6h	7h	8h	9h	10h	11h	12h	13h	14h	15h
0E	A1	58	21	00	06	D4	FF	F8	53	20	00	00	03	00	91
0EA1		5821		0006		D4FF		**F853**		2000		0003		**0091**	
Word 0		Word 1		Word 2		Word 3		Word 4		Word 5		Word 6		Word 7	

Words 2, 3, 4 collectively make up the MAC address. Word 7 is a checksum. Words 4 and 7 will be different for each chip. Words 2 and 3 will stay the same. Words 0, 1, 5 and 6 must not change.

The last octet of word 7 is the checksum; the first octet of Word7 must be 00. Refer below for instructions for calculating the checksum.

Address Range

A single block of 100 addresses has been reserved for this project. No addresses should be reused. The range of addresses available for the DJ35 and Sahara units is:

00:06:D4:FF:F8:53 to **00:06:D4:FF:F8:E8**

Recommendations

- Retape and rereel EEPROMS
- put a red dot on each EEPROM to indicate it has been programmed
- Send first articles to the following address:
  - Contact Fullplay Media Systems, Inc.
    12600 SE 38th St, Suit 150
    Bellevue, WA 98006
    Attn: Kenn Gordon
    425.289.0302
    kenn@fullplaymedia.com

- Ship EEPROMs to the following address:
  - Fullplay Media Systems, Inc.
    12600 SE 38th St, Suit 150
    Bellevue, WA 98006
    Attn: Kenn Gordon
    425.289.0302
    kenn@fullplaymedia.com

How to compute checksum

Example Compute checksum for the following MAC address: `00:06:D4:FF:F8:53`

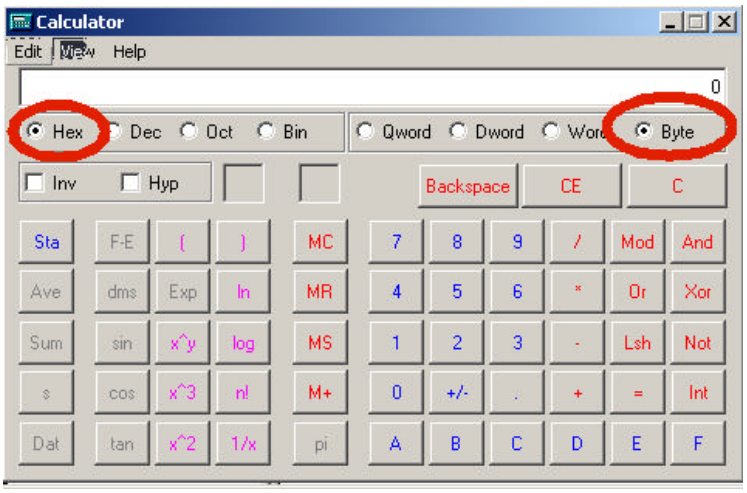
Here are the words associated with this MAC address:

0EA1	5821	0006	D4FF	**F853**	2000	0003	**Checksum** 0091
Word 0	Word 1	Word 2	Word 3	Word 4	Word 5	Word 6	Word 7

We need to compute the last byte of word 7.

Step One Open calculator in windows (i.e. type "calc" in Start→Run option on Windows Start Menu)

Step Two Select Hex and Byte options in calculator (see screen shot below)



Step Three Add up each octect by typing the following keystrokes into the calc application (no need to type leading zeros):

Octet	Value
0h	0E
1h	A1
2h	58
3h	21
4h	00
5h	06
6h	D4
7h	FF
8h	F8
9h	53
10h	20
11h	00
12h	00
13h	03

After adding the above bytes you should get a total of 6F.

Step Four Hit CE and C button in calc.

Step Five Subtract 6F from zero and you should get 91, the checksum to put in the last byte of word 7.