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DJ-C40 MAC Address Programming

August 13, 2002

Document 300-0001-04

Contact Information

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Introduction

The purpose of this document is to explain the MAC address programming process of EEPROM IC's for use in the DJ-C40. This document also specifies the range of numbers reserved for this application. First article samples should be sent to Fullplay for final validation.

DJ-C40 Digital Audio Jukebox

The DJ-C40 is a networked, streaming digital audio jukebox and recorder with CD-ROM and HDD. The DJ-C40 plays MP3 and WMA music files from its 40GB (upgradeable) hard drive and CD-ROM drive. The DJ can encode standard audio from tapes, albums and compact disks to MP3 and copy and store this music on its hard drive (700 cd's on the 40GB drive). The DJ uses ethernet to connect to a pc allowing content management from a personal computer, music streaming from the pc to the Darwin Jukebox, internet radio streaming and other networking features.

The DJ-C40 is intended for the consumer electronics market as a stereo or entertainment systems component product, replacing mass storage compact disk players as well as adding many new features to the consumers experience.

Manufacturer/model/package of EEPROM to program

The microchip 93LC46B-SN, Fullplay p/n 920008, is recommended for this programming method. Once programmed, the new p/n is 300-0001-04. Programmed parts are to be tagged with a distinguishing mark. The p/n is preferred, but a red dot would also be acceptable.

REF DES	DESCRIPTION	Fullplay P/N	Manufacturer	Manufacturer P/N
U20	IC, Serial EEPROM,1K 2.7V, 64 x 16, 93LC46B, 8-SOIC	300-0001-04	Microchip	93LC46B-SN

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	07	**B4**	**A8**	20	00	00	03	00	**91**
0EA1		5821		0006		D407		**B4A8**		2000		0003		00**91**	
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 on how to calculate the checksum.

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Address Range

10,000 addresses have been reserved for this project. The following is the full range of addresses in hexadecimal format.

00:06:D4:07:B4:A8 to **00:06:D4:07:DB:B7**

The decimal translation is 29,327,078,568 to 29,327,088,567

Do not re-use MAC addresses.

How to compute checksum

Example Compute checksum for the following MAC address: 00:06:D4:07:B4:A8

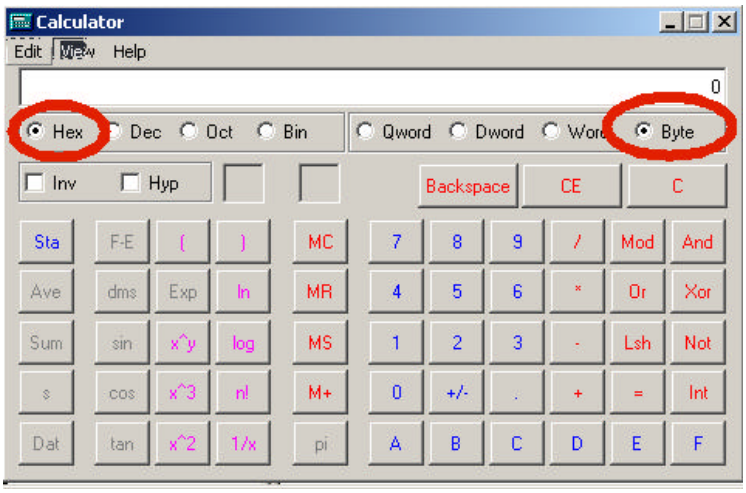
Here are the words associated with this MAC address:

0EA1	5821	0006	D407	**B4A8**	2000	0003	**Checksum** 00**18**
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)



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Step Three Add up each octet 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	07
8h	B4
9h	08
10h	20
11h	00
12h	00
13h	03

After adding the above bytes you should get a total of E8.

Step Four Hit CE and C button in calc.

Step Five Subtract E8 from zero and you should get 18, the checksum to put in the last byte of word 7.

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:
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