

Conversion of MU9C1485 Wideport LANCAM® to MU9C1485A/L Wideport LANCAMs®

Introduction

This Application Brief describes the ease with which a design may be moved from the MUSIC MU9C1485 WidePort LANCAM to the MUSIC MU9C1485A WidePort LANCAM. The enhanced features have been added in such a way that they do not affect the operation of nearly all existing applications.

The enhanced features are also available on the MU9C1485L, which may be used as a direct replacement when changing the system Vcc supply to 3.3 volts.

Pin Compatibility

The MU9C1485A and MU9C1485L Wideport LANCAMs are pin compatible with the MU9C1485 Wideport LANCAM. The MU9C1485A has extra ground pins on pins 1, 2, 20, 22, 41, 42, 60, 61, and 62, but these may be left unconnected in applications using the cycle timing of the -90 speed grade or slower.

Software (Routine) Compatibility

The MU9C1485A and MU9C1485L Wideport LANCAMs have a superset of the MU9C1485 Instruction set; no instructions have been deleted, only added.

All existing MU9C1485 routines will run on the MU9C1485A/L devices.

The only caveats to the above statement are:

1. Command Reads from the Persistent Source register, where the device ID of 145H is found on bits 15–4.
2. Command Reads of the Next Free Address register, where the Page address is found on bits 15–11.

These locations previously returned values of 0 (zero). Command Reads of the first case are typically only found in qualification and diagnostic routines, and therefore should not affect the actual application. The second case may be an issue if the system needs to know the Next Free address and looks at bits 15–11 when retrieving the Next Free address.

One CAM/RAM partition configuration has been eliminated, 0 CAM, 64 RAM. This configuration was replaced with more useful RAM/CAM configuration options.

MU9C1485A/L Enhancements

➤ Dual Configuration Register Set

The Control, Segment Control, Mask Register 1, Address register, Persistent Source register, and Persistent Destination register are duplicated in the background register set to provide rapid context switching between the foreground configuration and the background configuration.

➤ Shiftable Comparand and Mask Register 2

The ability to shift the Comparand register and Mask Register 2 is useful in proximate matching algorithms.

➤ Increased CAM/RAM Partition Flexibility

There are now seven possible CAM/RAM configurations. Previously there were five possible configurations.

➤ MU9C1485A 70ns (Compare Cycle) Speed Grade

Previously, the fastest speed grade available was 90ns. The faster speed grade enables faster system speeds.

Application Brief AB-N8

➤ Readable Device ID

A Command Read of the Persistent Source register will output the device ID of 145H on bits 15–4.

➤ Selectable Faster Operating Mode

Eliminates the need for a NOP after a no-match, improving routine execution time.

➤ Single Cycle Reset of Segment Control Register

This single cycle reset of the segment counters in the Segment Control register reduces routine execution time in the case of interruptible routines.

➤ Read of Next Free Address Register from Locked Daisy Chain

This allows the system to know the true Next Free address, including Page address, in a system of daisy-chained CAMs with one Command Read. Previously, each CAM in the chain had to be polled individually.

MUSIC Semiconductors Agent or Distributor:

MUSIC Semiconductors reserves the right to make changes to its products and specifications at any time in order to improve on performance, manufacturability, or reliability. Information furnished by MUSIC is believed to be accurate, but no responsibility is assumed by MUSIC Semiconductors for the use of said information, nor for any infringement of patents or of other third party rights which may result from said use. No license is granted by implication or otherwise under any patent or patent rights of any MUSIC company.
©Copyright 1998, MUSIC Semiconductors



<http://www.music-ic.com>
email: info@music-ic.com

USA Headquarters

MUSIC Semiconductors
254 B Mountain Avenue
Hackettstown, New Jersey 07840
USA

Tel: 908/979-1010

Fax: 908/979-1035

USA Only: 800/933-1550 Tech. Support
888/226-6874 Product Info.

Asian Headquarters

MUSIC Semiconductors
Special Export Processing Zone 1
Carmelray Industrial Park
Canlubang, Calamba, Laguna
Philippines

Tel: +63 49 549 1480

Fax: +63 49 549 1023

Sales Tel/Fax: +632 723 62 15

European Headquarters

MUSIC Semiconductors
Torenstraat 28
6471 JX Eygelshoven
Netherlands

Tel: +31 45 5462177

Fax: +31 45 5463663