PRODUCT CHANGE NOTICE

Symmetricom bc635/637PCI-U Time & Frequency Processor Redesign

1. Supplier Information

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2. Product Change Notice #
0806-01-TTM

3. Issue Date
August 2008

4. Change Classification
N/A

5. Product Identity/Model	6. Product Code/Assembly	7. Older Product Codes
bc635PCI-U TFP	bc635PCI-U	BC12083-1000
bc637PCI-U GPS TFP	bc637PCI-U	BC12083-2000
bc635PCI-U TFP w/OVEN option	bc635PCI-U-OCXO	BC12083-1000/BC12083-3000
bc637PCI-U TFP w/OVEN option	bc637PCI-U-OCXO	BC12083-2000/BC12083-3000

8. New CLEI Code
N/A

9. Old CLEI Code
N/A

10. Drawing #
N/A

11. Associated Products or Changes Affected
N/A

12. Classification Substantiation
N/A

13. Reason for Change

The bc635/637PCI-U models have been upgraded to newer, more current technology. The replacement models are the bc635PCI-V2 and bc637PCI-V2. This upgraded hardware is 100% form and fit backward compatible. Some functions have changed or been added that make the replacement boards slightly different than the older models. See 14. Description of Changes for full details.

14. Description of Changes

There is a difference in the PCI base address register mapping between the bc635/637PCI-U and the bc635/637PCI-V2 cards. The base address registers (bars) are located in dwords 4-9 of the PCI configuration header space. Both the bc635/637PCI-U and the bc635/637PCI-V2 cards map both register and dpram areas into PCI memory spaces.

PCI bar mapping:

bc635/637PCI-U	bc635/637PCI-V2
bar0 = 32-bit register space	bar0 = reserved
bar1 = 8-bit dpram space	bar1 = reserved
	bar2 = 32-bit register space
	bar3 = 8-bit dpram space

Hardware differences:	bc635/637PCI-U	bc635/637PCI-V2
Standard oscillator	VCXO	TCXO (better holdover)
1PPS duty cycle	63 uS	60 uS
Heartbeat (periodic) duty cycle	adjustable	square wave
Power	+5, +12, -12	+5, +12
Field programmable update	replace flash	serial port download
OCXO option	+12V	+5V
OCXO option	sine wave	square wave
Time at power-on	elapsed	RTC
Time code input level (AM)	.5V to 5V P-P	1V to 8V P-P
Time code output level (AM)	4V P-P 50 ohm	3V P-P 50 ohm
NV (Restored at Power-on)	not supported	many parameters restored
Strobe output timing	1 uS late	on time
GPS receiver (bc637PCI-V2)	Trimble Ace III	Trimble SKII
Certifications		CE(RoHS) Compliant

Operational differences:	bc635/637PCI-U	bc635/637PCI-V2
RTC bug	Did not transition through end of year properly	Transitions properly through end of year
SET CLOCK Command	10 uSec Advance Retard	10 uSec Advance Retard is not implemented on V2 design
Leap Events	User required to enter UNIX seconds of Leap Event when manually entering Leap Seconds settings.	User no longer required to enter UNIX seconds of Leap Event when manually entering Leap Seconds settings. Card uses Year and Time of Year information to determine when Leap Event will occur. The Leap Event is calculated for the last day of the current month at UTC midnight.
YEAR AUTO INCREMENT FLAG - Packet 0x42	Auto Increment Enable cannot be disabled	Auto Increment Enable cannot be disabled
PCI Special Boot mode		Special Boot mode is not supported on the V2 design.
bc635 application software		Check box labeled LATCH EVENT TIME (found in Signals/Interrupts window) has been removed. The -U card did not support the function, and is not implemented on V2.

bc635/637PCI-V2 Additions:

- DDS circuit for rate outputs
- IRIG E, G, XR3 & 2137 Time Code Inputs
- IRIG A, G, E, NASA 36, XR3 & 2137 Time Code Outputs
- Battery disconnect jumper

Software Drivers:

Windows
The bc635/637PCI-V2 cards should be plug and play compatible for Windows users of the bc635/637PCI-U.

Linux and/or Solaris
Linux and Solaris users will need to update to the latest version the Symmetricom driver.

Other Operating Systems or Custom Drivers
Custom software interfaces to the bc635/637PCI-U card will need to make the above described base address register (bar) value change in the software.

15. Effect of Change
Many new features and improved product longevity.

16. Material Affected
N/A

17. Documentation Affected
N/A

18. Supplier Implementation Date
August 2008

19. Modification Expiration Date
N/A

20. Modification Location
New purchases.

21. Modification Cost
New purchases.

22. Location and Quantity of Equipment
N/A

23. Attachments
N/A

24. Comments