



January 31, 2000

Dear Customer:

UTMC Microelectronic Systems Inc. (UTMC) appreciates [Customer's] interest and use of our products, specifically the RadHard SμMMIT™ Family of products. The purpose of this letter is to inform [Customer] that UTMC's migration of the RadHard SμMMIT protocol handler design to a new wafer fabrication facility is on schedule and first silicon has been received and completed characterization. The migration affects the RadHard SμMMIT E (SMD 5962*92118) and RadHard SμMMIT LXE/DXE (SMD 5962*94663). The migrated versions of the RadHard SμMMIT E and RadHard SμMMIT LXE/DXE protocol handlers are expected to be a direct package replacement to the existing protocol handlers currently in production. At this point in the migration, UTMC reports one AC difference, Memory Read Cycle Data Setup Delay (t_E 14ns from 12ns).

Table 1 is a summary of the radiation performance difference between the old and new wafer foundries.

Table 1. Radiation Hardness Changes

Parameter	Old	New
Total Dose	1M rad(Si)	100K and 300K rad(Si)
Single Event Latchup	Immune (128MeV-cm ² /mg)	Immune (128MeV-cm ² /mg)
Single Event Upset LET	77MeV-cm ² /mg	25MeV-cm ² /mg
Single Event Cross Section	2.0E-6cm ² /bit	7.3E-7cm ² /bit
Single Event Upset Rate ¹	7.0E-6 errors/device-day	1.0E-4 errors/device-day
Memory Read Cycle Data Setup Delay (t_E)	12ns	14ns

Note:

1. These errors are for the Adam's 90% Geosynchronous Orbit. Since this component is essentially immune to proton upsets the upset rate will improve significantly for lower Earth orbits.

For the RadHard ΣμMMIT LXE (15-volt transceiver) and RadHard ΣμMMIT DXE (5-volt transceiver) the internal bus transceivers are not affected by the migration.

A note for die customers - Due to a change in the substrate starting material, the migrated RadHard ΣμMMIT die is not electrically backward compatible for multi-chip module or hybrid applications. Additionally, die pad locations, with respect to the edge of the die, may change slightly.

Based on current run rates, UTMC projects the current production RadHard ΣμMMIT die inventory to last through the second quarter of 2000. The inventory of existing RadHard ΣμMMIT die is being offered to customers on a “first-come-basis” until the replacement product is qualified. UTMC plans to cease shipping the older device revision once qualification of the migrated version is complete. The purpose of this letter is to afford [Customer] an opportunity to secure additional units of the current production revision, and does not constitute a last time buy notification. UTMC plans to supply the RadHard ΣμMMIT Family for the foreseeable future. Due to the lack of demand for through-hole packaging options, UTMC will offer the RadHard ΣμMMIT and RadHard ΣμMMIT LXE/DXE in surface mount packages only. The RadHard ΣμMMIT E will be offered in an 84-lead flatpack, the RadHard ΣμMMIT LXE/DXE will be offered in the 100-lead flatpack.

This letter is the third of five correspondences you will receive from UTMC regarding the RadHard ΣμMMIT migration. A fourth letter will outline any product differences and will occur after completion of QML qualification. A final letter will notify [Customer] that UTMC has completed qualification and inventory of the old product is no longer available. These letters will also be posted on UTMC’s website (www.utmc.com – under Databus products). If you have any questions please contact me at (719) 594-8252.

Regards,

Anthony F. Jordan

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