Preliminary Data Sheet Supplement

Subject:	Version Change
Data Sheet Concerned:	MAS 3587F 6251-542-2PD, Edition Nov. 7, 2001
Supplement:	No. 4/ 6251-542-2PDS
Edition:	Nov. 7, 2001

Changes from the MAS 3587F Version B2 to the MAS 3587F Version C3B:

Note: All section or table numbers refer to the Preliminary Data Sheet, Edition: Nov. 7, 2001; 6251-542-2PD

Release Note: Revision bars indicate significant changes to the previous edition.

2.9.2. DC/DC Converters

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The DC/DC converters are designed to generate an output voltage between 2.0 V and 3.5 V which can be programmed separately for each converter via the I^2C interface (see Table 3–3 on page 20). Both converters are of the bootstrapped type which allow start up from a voltage down to 0.9 V for use with a single battery or NiCd/NiMH cell. The default output voltages are 3.3 V/2.5 V (DCDC1/DCDC2). Both converters are enabled with a high level at pin DCEN and enabled/disabled by the I^2C interface.

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If both DC/DC-converters are off, a high signal may be applied at pin DCEN. This will start the converters in their default mode. The PUP signal will change from low to high when both converters have reached their nominal output voltage and will return to low when both converter's output voltages have dropped 200 mV below their programmed output voltage. The signal at pin PUP can be used to control the reset of an external microcontroller (see Section 2.13.2. on page 16 for details on start up procedure).

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2.13.2. Power-Up of the DC/DC Converters and Reset

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As soon as the output voltage at VSENSn reaches the default voltage monitor reset level, the respective internal PUPn bit will be set. When both PUPn bits are set, the signal at pin PUP will go high and can be used to start and reset the microcontroller.

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The converter output voltage setting has been enhanced. Please see Table 3–3 for details.

Table 3–3: Direct Configuration Registers

I^2C Sub-address (hex)	Function	Name
76	**DCCF Register** (reset = 2868_{hex})	DCCF

DC/DC Converter 2

bit[14:11] Converter 2 output voltage with respect to VREF

Code	Nominal output volt.	set level of PUP2	reset level of PUP2
1111	3.5 V	3.4 V	3.3 V
1110	3.4 V	3.3 V	3.2 V
1101	3.3 V	3.2 V	3.1 V
1100	3.2 V	3.1 V	3.0 V
1011	3.1 V	3.0 V	2.9 V
1010	3.0 V	2.9 V	2.8 V
1001	2.9 V	2.8 V	2.7 V
1000	2.8 V	2.7 V	2.6 V
0111	2.7 V	2.6 V	2.5 V
0110	2.6 V	2.5 V	2.4 V
0101	2.5 V	2.4 V	2.3 V (reset)
0100[1)]	2.4 V	2.3 V	2.2 V
0011[1)]	2.3 V	2.2 V	2.1 V
0010[1)]	2.2 V	2.1 V	2.0 V
0001	3.7 V	3.6 V	3.5 V
0000	3.6 V	3.5 V	3.4 V

[1)] refer to Section 4.6.2. on page 57

DC/DC Converter 1

bit[6:3] Converter 1 output voltage at VSENS1 with respect to VREF

Code	Nominal output volt.	set level of PUP2	reset level of PUP2
1111	3.5 V	3.4 V	3.3 V
1110	3.4 V	3.3 V	3.2 V
1101	3.3 V	3.2 V	3.1 V (reset)
1100	3.2 V	3.1 V	3.0 V
1011	3.1 V	3.0 V	2.9 V
1010	3.0 V	2.9 V	2.8 V
1001	2.9 V	2.8 V	2.7 V
1000	2.8 V	2.7 V	2.6 V
0111	2.7 V	2.6 V	2.5 V
0110	2.6 V	2.5 V	2.4 V
0101	2.5 V	2.4 V	2.3 V
0100[1)]	2.4 V	2.3 V	2.2 V
0011[1)]	2.3 V	2.2 V	2.1 V
0010[1)]	2.2 V	2.1 V	2.0 V
0001	3.7 V	3.6 V	3.5 V
0000	3.6 V	3.5 V	3.4 V

[1)] refer to Section 4.6.2. on page 57