APPLICATION NOTE 1

Application note about SMT374 power consumption
and power down modes

SMT374

SUNDANCE MULTIPROCESSOR TECHNOLOGY LTD.

Date	Comments / Changes	Author	Revision
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Document Title	smt374 Power Down Modes.doc				
Date	23/10/96	Revision	1	Page	1 of 2

Equipment used

WG020 Multimeter, serial number 2K2X3280

EP603 Power Supply (PSU), serial number 231416272

SMT148, serial number SMTN1447

SMT374, serial number SL3374131

Test Setup

PSU set to 25.1V.

Multimeter (set to measure current using its 10A range), inserted into the positive supply to the SMT148.

SMT374 sited in TIM site 2.

Power Measurements

Module configuration	Power, Watts	Power Compared to Max, %
SHB test running on one DSPs (Max)	4.05	100
Idle	2.98	74
Power Down Mode, PD1	2.77	68
FPGA un-configured	2.35	58
FPGA un-configured, and PD1	2.02	50
Power Down Mode, PD2	1.92	47
FPGA un-configured, and PD2	1.28	32

All power values are assuming an SMT148 DC-DC converter efficiency of 85%, and an unpopulated SMT148 taking 0.27A.

Power down mode PD1 can be exited using an interrupt (timer etc).

PD1 needs further investigation as the DSP seemed to exit this mode without interrupt.

Power down mode PD2 can only be exited using a reset.

The SMT148 includes a micro-controller which can generate a reset to the TIM sites. Currently, it generates this reset signal to all TIM sites only during a power-up. Further development is required to enable the micro-controller to individually reset the TIMs, and under what situation a reset would occur (example scheme; the TIM would tell the micro-controller that it will enter power down and will require a reset some programmable time later).

Document Title		smt374 Power Down Modes.doc			
Date	23/10/96	Revision	1	Page	2 of 2