

MiDAS Microcontroller Family 8bit Turbo 80C52 Core



MiDAS3.0 Family

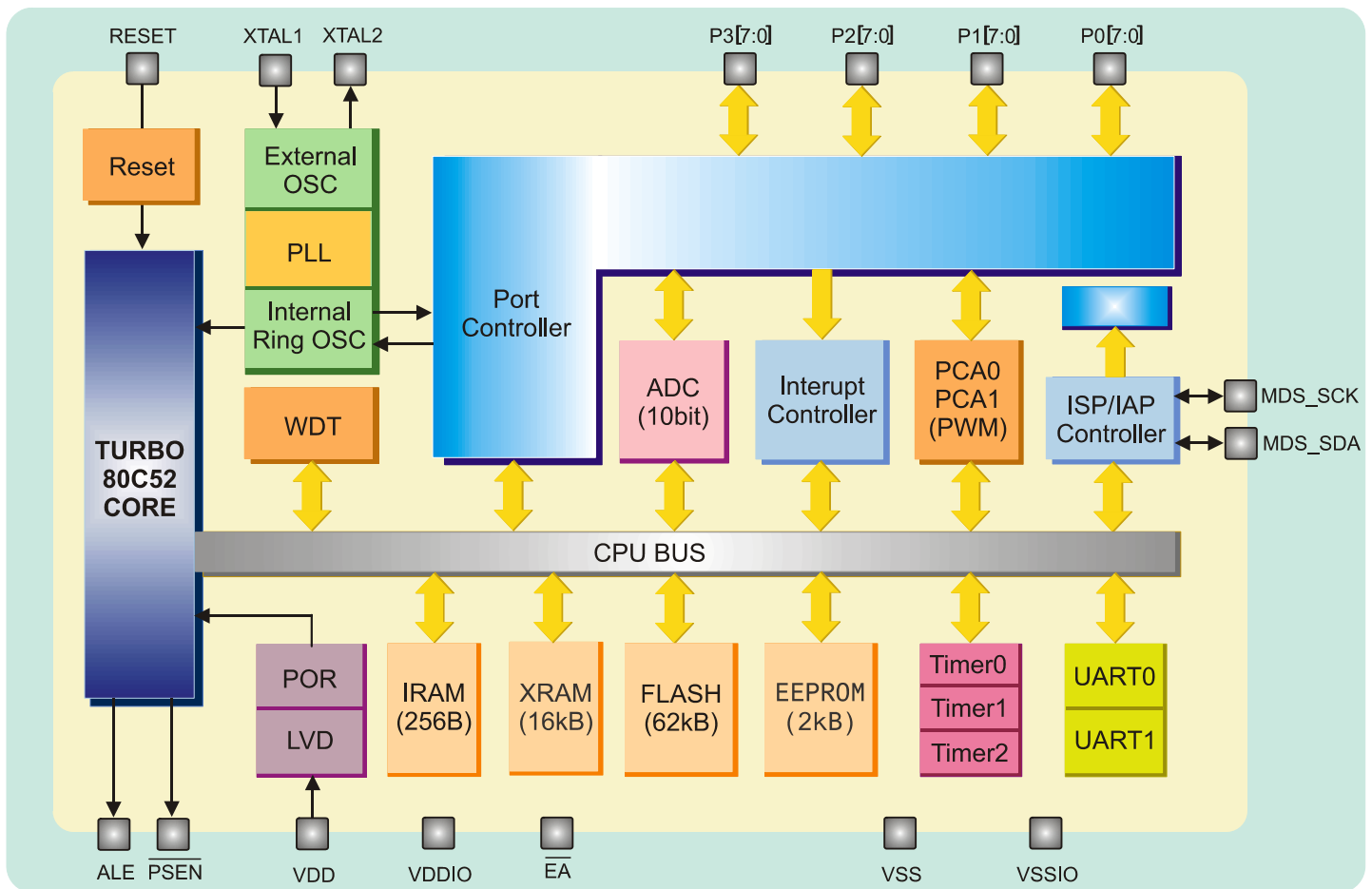
- ◆ **CPU:**
 - 8-bit turbo 80C52 architecture
 - 4 clock cycles/1 machine cycle
 - Pin/instruction level compatible with Intel 80C52
- ◆ **On-Chip FLASH ROM:** 16kB, 32kB, 64kB
 - 2kB EEPROM for Data
- ◆ **On-Chip Mask ROM:** 16kB, 32kB, 64kB
- ◆ **16kB On-Chip RAM:**
 - 256 bytes IRAM
 - 16,384 bytes XRAM
- ◆ **ISP:** In System Programming of FLASH
- ◆ **IAP:** In Application Programming of EEPROM
- ◆ **32 programmable I/O Pins:** 44-pin variant
 - Open drain, push-pull output
 - Input / Output and pull-up control
 - TTL and CMOS compatible logic levels
- ◆ **Operating Voltage:**
 - Core: 1.62V ~ 1.98V
 - I/O: 3.0 ~ 3.6V
- ◆ **Power Consumption:**
 - Stop mode : 10µA typ. @ 1.8V
 - Normal mode : 50mA typ. @1.8V, 100MHz
- ◆ **Operating Frequency & Temperature:**
 - Max. 100MHz @ -20°C ~ 85°C
- ◆ **UART:** Two Full-Duplex ports
- ◆ **I2C Slave Logic:** Support 1.2MHz @ 100MHz clock
- ◆ **Oscillator:**
 - Crystal reference oscillator: 2MHz ~ 40MHz
 - PLL Synthesizer: 70MHz ~ 130MHz
 - RC Ring Oscillator: 32kHz and 12MHz
- ◆ **Timer/Counters:** 3 x 16-bit
- ◆ **Watchdog Timer:** 27-bit programmable
- ◆ **Two Programmable Counter Arrays (PCA):**
 - 12 Channels 8-bit/16-bit dynamic PWM
 - 12-Channels 16-bit Compare/Capture counter
 - 12 Channels High Speed Output
- ◆ **Reset Sources:**
 - Power-on (POR), Low Voltage Detector (LVD) reset
 - External reset Pin
 - Watchdog timer reset
- ◆ **16 Interrupt Sources:**
 - Timer0/1/2, UART0/1, PCA0/1, WDT, ADC, I2C,
 - 6 External Source
 - Four/Two-level interrupt priority
- ◆ **32-Channel 10-bit ADC:**
 - max. 104ksps (@FADC= 10MHz)
 - Programmable input clock frequency
- ◆ **E.S.D. Protection:** 2kV
- ◆ **Latch-up Protection:**
 - up to ±200mA
- ◆ **Packages:** 44-MQFP/PQFP/LQFP, 32-MLF



MiDAS Product List

MiDAS Family	FLASH [byte]	OTP-ROM [byte]	Mask ROM [byte]	EEPROM [byte]	RAM [byte]	Volt [V]	Frequ. [MHz]	Timer Counter [16bits]	ADC [bitxch.]	PWM [bitxch.]	Serial I/O	Package Leads	Features
MiDAS1.0	X	8k	8k	X	256	2.7~5.5	40 (20)	3	9x4	8x2	1 UART	44/40/28	WDT, LVD, POR
MiDAS1.1	X	4k	2k, 4k	X	128	2.4~5.5	20 (10)	2	10x12 10x8 10x2(3)	8x1	1 UART	20/16/8	WDT, LVD, POR, Ring Osc.
MiDAS2.0	16k, 32k, 64k	X	16k, 32k, 64k	2k	2k	3.0~3.6	40	3	10x8	8x12	2 UART	100/64/44	WDT, LVD, POR
MiDAS2.1	4k, 8k	X	4k, 8k	1k	512	2.2~5.5	20 (12)	2	10x28 10x2	8x1	1 UART I2C	32/28	WDT, LVD, POR
MiDAS2.2	1k, 2k, 4k	X	1k, 2k, 4k	128	128	1.8~5.5	23 (12)	1	10x16 10x12 10x4	8x1	1 UART I2C	20/16/8	WDT, LVD, POR, Ring Osc.
MiDAS3.0	16k, 32k, 64k	X	16k, 32k, 64k	2k	16k/256	1.6~2.0 Core 3.0~3.6 I/O	100 (80)	3	10x32 10x21	8x12(6) 16x6(3)	2 UART I2C	40/32	WDT, LVD, POR, Ring Osc.

Block Diagram MiDAS3.0 44-pin Variant



Development Tools

◆ Development Environment:

- IDE with Assembler
- C-Compiler & Debugger

Evaluation Board



Programmer & In Circuit Debugger