

### KEY FEATURES:

- » Selectable MIL-STD-1553B or MIL-STD-1760 operation
- » Stand alone remote terminal with memory
- » Low power +5 volt operation
- » Dual redundant operation
- » CMOS Bus Transceivers and Protocol
- » Simple processor interface
- » Selectable autonomous wraparound
- » Hardware checksum generation
- » Optional internal memory
- » Available as PGA or Flat-pack
- » ITAR free - UK design and manufacture

The RTS/RTM 1760 CMOS Remote Terminal is a compact integrated module compatible with MIL-STD-1553B and McAir protocols. The all CMOS Multi-Chip Module (MCM) technology provides low standby power dissipation together with a compact footprint in PGA or surface mount (quad-flat-pack) packages. This RTU provides a stand-alone interface between the MIL-STD-1760 or MIL-STD-1553 Bus and the subsystem. The module is available with (RTM1760) or without (RTS1760) an internal 4k x 16 RAM.



## GENERAL DESCRIPTION

The RTS/RTM1760 is a complete dual redundant MIL-STD-1760 or MIL-STD-1553B Remote Terminal in a single small outline package. It is also capable of meeting the McAir response time requirements and the optional handling of modecode descriptor 31 as a normal subaddress. The mode of operation is selectable using two external pins. The RTS/RTM1760 contains two low-power monolithic transceivers capable of providing the output voltage required for MIL-STD-1760 (20V to 27V) together with a custom protocol chip and an optional 4K x 16 RAM for message storage. The custom transceiver chips are implemented in CMOS technology providing very low power consumption figures when not transmitting. The receiver sections of the transceivers fully meet the requirements of MIL-STD-1553B in terms of threshold, common mode rejection and bit error rate when used in conjunction with the custom protocol chip.

The custom protocol chip contains dual redundant encoder/decoders, RT protocol logic, 32 word message buffers, DMA controller, arbitration logic and control registers. The internal RAM is used to separately store messages to all valid receive, transmit and broadcast subaddresses as well as modecode data. The complete terminal requires only a single +5V supply.

In MIL-STD-1760 mode the RTS/RTM1760 provides selectable automatic checksum generation and validation together with header word/subaddress comparison on user selected messages. Other MIL-STD-1760 features include a latch on the RT address lines, checking to ensure that maximum

message length is 30 words and generation of the AIRPRES\* signal.

In MIL-STD-1553B mode the special MIL-STD-1760 features are turned off and the unit functions as a standard Remote Terminal capable of performing all specified message formats. In both modes of operation the RTS/RTM1760 supports all 13 dual redundant modecodes. Illegalisation of any number of receive, transmit or broadcast subaddresses can be programmed using the 32 word Interface Control Block. This block can also be used to select modecode illegalisation and program interrupt generation on different subaddress or modecode combinations. It can also be used to select automatic checksum generation or validation if the terminal is operating in MIL-STD-1760 mode. With the addition of external circuitry (eg. a single PLD) any combination of subaddress, T/R bit, word count/modecode field can be declared illegal. The RTS/RTM 1760 can be easily interfaced to 8 and 16 bit processor architectures and in 8 bit mode all multiplexing is performed internally allowing 8 and 16 bit transfers to be mixed.

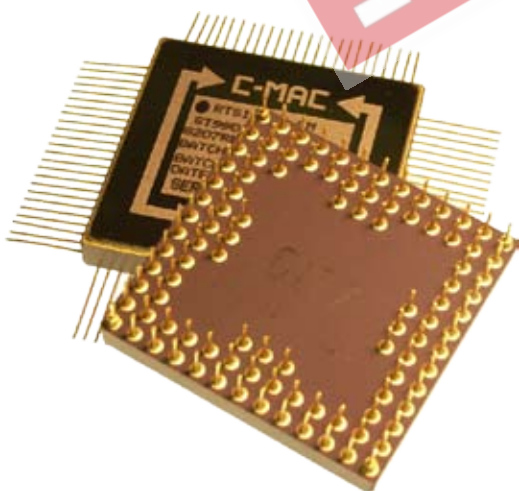
In McAir mode the response time meets the required 7.0µs maximum. In addition subaddress 31 is allocated as a normal subaddress rather than a modecode. It should be noted that the databus drivers used in the RTS/RTM1760 conform to the requirements of MIL-STD-1553B and MIL-STD-1760 and not to those of McAir.

## RECOMMENDED OPERATING CONDITIONS

PARAMETER	MIN	MAX	UNIT
Supply voltage ( $V_{CCA}$ , $V_{CCB}$ , $V_{CCC}$ , $V_{CCD}$ )	4.5	5.5	$V_{DC}$
High level input voltage $V_{ih}$	2.2		V
Low level input voltage $V_{il}$		0.7	V
High level output voltage $V_{oh}$		$V_{CCC}$	V
Low level output current $I_{ol}$		4	mA
Operating Case Temperature Range	-55	125	Deg. C

## POWER SUPPLY CURRENTS

PARAMETER	MIN	MAX	UNIT
$I_{CCA}$ or $I_{CCB}$			
Transmit 25% duty cycle	150	250	mA
Transmitter quiescent	20	60	mA
$I_{CCC}$	5	50	mA
$I_{CCD}$	50	1000	µA



RT 1760 Package Options

**For further information contact us at:**

**C-MAC MicroTechnology**

South Denes, Great Yarmouth,  
Norfolk, NR30 3PX, UK

Tel: +44 (0) 1493 743 100

Email: info@cmac.com



MicroTechnology

January 2008