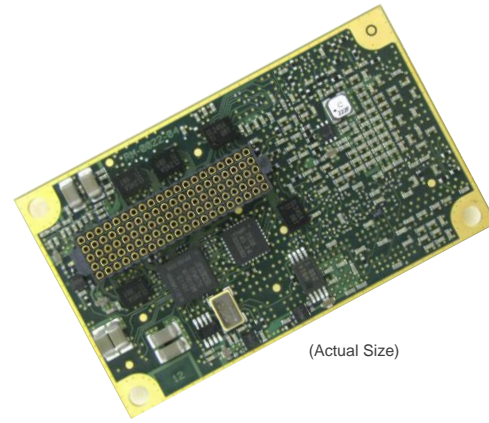


HF Modem

2G ALE

3G ALE

V/UHF Modem



(Actual Size)

### KEY FEATURES:

- Low cost installation (Hardware)
- Activation keys unlock software
- 96000 bps in 24 kHz channel
- 48000 bps in 12 kHz channel
- Interface for external ARQ (eg. S 5066)
- Low power consumption (1 w)
- Compact size (33 x 55 x 8 mm)
- Single 100-way connector
- Evaluation kit available

### HIGH DATA RATE MODEM

The TC4 is a very compact high-performance V/UHF high data rate (HDR) modem module. The module is intended for integration into V/UHF radios and suitable for mobile or line-of-sight applications.

For more than a decade, radio maker have used the TC4 in their radio design to provide data modem capabilities.

### ADAPTABLE CONFIGURATION

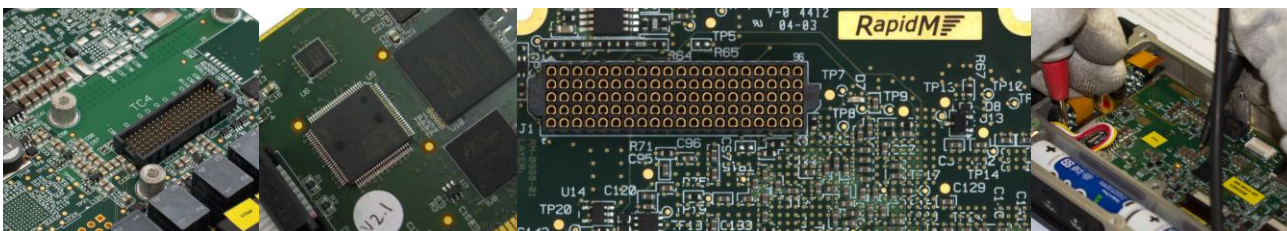
Modem bandwidth is configurable to best suite radio capabilities (24, 12, 9, 6 or 3 kHz).

The low data rates (PSK modulation) are suitable for radios with a non-linear power amplifier (PA). The very high rates use QAM and require a linear PA or can work with wideband FM or AM radios.

### MOBILE V/UHF

The TC4 V/UHF modem is suitable for high-speed mobile data communication applications.

High performance Doppler tacking allows operation at up to 250 km/h relative speed (at 80 MHz).



PRIMARY INTERFACES*	USE	DETAILS
UART 1	Data, Config & Control, or Raw Data (option)	Rate: 4800 to 230400 bps Electrical: 3.3V LVTTTL Flow Control (Raw data only): CTS/RTS, XON/XOFF
UART 2	Config & Control (when UART1 is Raw Data)	Rate: 4800 to 115200 bps Electrical: 3.3V LVTTTL Flow Control: None
CODEC	Baseband Audio (Analogue)	Tx (output): 40 $\Omega$ unbalanced 2.0 V p-p Rx (input): 10 k $\Omega$ unbalanced 1.5 V p-p
MCBSP	Data, Config, Control (option)	Synchronous serial I/F McBSP port
DISCRETE OUTPUT	Radio Keyline	Active high
DISCRETE INPUTS	Radio PTT Sense Reset / Power Down	Active low Active low
SPEED SELECT	Power Saving (Optional)	[3:0], Active low
POWER	Supply	3.3 V DC

BANDWIDTH	CODING	DATA RATES [BPS]	MODEM SOFTWARE OPTIONS	
			V1	V2
24 kHz	C	High Rate: 96000, 76800, 64000, 48000 Low Rate: 32000, 16000, 9600, 4800, 2400	•	-
12 kHz	C	High Rate: 48000, 38400, 32000, 24000 Low Rate: 16000, 8000, 4800, 2400, 1200	•	•
9 kHz	C	High Rate: 36000, 28800, 24000, 18000 Low Rate: 12000, 6000, 3600, 1800, 900	•	•
6 kHz	C	High Rate: 24000, 19200, 16000, 12000 Low Rate: 8000, 4000, 2400, 1200, 600	•	•
3 kHz	C	High Rate: 12000, 9600, 8000, 6000 Low Rate: 4000, 2000, 1200, 600, 300	•	•

INTERLEAVER LENGTH	INTERLEAVER PERIOD [MS]				
	24 kHz	12 kHz	9 kHz	6 kHz	3 kHz
SPEED SELECT	20	40	53.33	80	160
SPEED SELECT	160	320	426.67	640	1280
SPEED SELECT	2560	5120	6826.67	10240	20480

INSTALLATION	
SIZE	33 x 55 x 8mm (w x d x h)
POWER	3.3V DC, <= 1 W (typ.)

ENVIRONMENTAL	
TEMPERATURE	-40°C to +85°C (operating) -40°C to +90°C (storage)

ORDERING INFORMATION	STOCK NUMBER	DESCRIPTION
TC4 HARDWARE	TC4-05-M-M0-5.3	Module: M0 V5A (B/loader only) V5.3
HARDWARE ACTIVATION (REQUIRED)	TC4-05-HWAC-KEY	Key: H/W Activation (Required)
V/UHF MODEM V1 (24 kHz) SOFTWARE OPTION	TC4-SW-O-V1-5.3	SW MDL-V1 (VHF B≤24kHz ≤96000 bps) V5.3
V/UHF MODEM V2 (12 kHz) SOFTWARE OPTION	TC4-SW-O-V2-5.3	SW MDL-V2 (VHF B≤12kHz ≤48000 bps) V5.3

\* Contact RapidM for Datasheets

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