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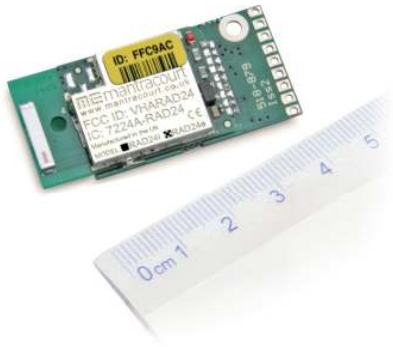
Preliminary *T24-TA*

Wireless Telemetry Temperature Acquisition Module

Features



- Miniature acquisition module for temperature related measurement
- Exceptionally low power for long battery life
- Transmits on license free 2.4GHz
- Remote ‘on’ and ‘off’ to preserve battery life
- 100 / 200m range depending on Antenna
- Simple configuration and calibration via PC using free Telemetry Toolkit Software
- Can be calibrated to provide any standard engineering unit output for given input

Introduction

The T24-TA temperature acquisition module is a high performance PCB designed for the collection and processing of temperature related measurements. The wireless acquisition module requires an external platinum temperature sensor (Pt100).

The module measures temperature and periodically transmits it. Between transmissions the device is optionally put in a power saving sleep mode to conserve batteries.

Miniature in size, the device transmits on license-free 2.4Ghz, avoiding local radio interference to ensure data integrity and security.

Data is provided in real time at variable speeds with a direct line of sight range of 100 or 200 meters dependant on integral or external antenna type which can be extended further with the use of high gain antenna’s and repeaters.

The module transmits to a range of receivers including handheld indicators, digital displays, analogue and serial outputs, PC display and wireless printer (please see separate sheets) and has various powering options.

Also available in IP rated enclosures.
See T24-ACM, T24-ACMi and T24-ACMm.

Specifications

General Radio

	Min	Typical	Max	Units
Licence		Licence Exempt		
Modulation method		MS (QPSK)		
Radio type		Transceiver (2 way)		
Data rate		250		K bits/sec
Radio Frequency	2.4000		2.4835	GHz
Power		1		mw
Range RAD24i (Integrated antenna)			100 (400)	Metres (feet) *
Range RAD24e (External antenna)			200 (650)	Metres (feet) *
Channels (DSSS)		16		

*Maximum range achieved in open field site with the T24 acquisition module at a height of 3 metres (9.8 feet) above ground and T24-HS held at chest height pointing towards the acquisition module. Specification at 3V supply at 25°C

T24-TA - Embedded Temperature Acquisition Module

Measurement	Min	Typical	Max	Units
Temperature Range	-200		500	˚C
Accuracy (-20 to +40 ˚C)		0.1	0.2	˚C
Accuracy (-40 to +85 ˚C)		0.2	0.35	˚C
Internal Resolution		16,000,000/ 24		Resolution/Bits
Noise Free where Sample Time < 5mS		13,000 / 13.5		Resolution/Bits
Noise Free where Sample Time < 10mS		17,000 / 14		Resolution/Bits
Noise Free where Sample Time < 100mS		62,000 / 16		Resolution/Bits
Noise Free where Sample Time > 1000mS		158,000 / 17		Resolution/Bits
Electrical	**Min**	**Typical**	**Max**	**Units**
Power Supply Voltage	2.1	3.0	3.6	VDC
Power Supply Ripple			50	mV ac pk-pk
Power Supply current	**Min**	**Typical**	**Max**	**Units**
Normal Mode (Non Low Power Mode)		55	60	mA
Standby / Sleeping		5	20	uA
Environmental	**Min**	**Typical**	**Max**	**Units**
Operating Temperature Range	-40		+85	˚C
Storage Temperature	-40		+85	˚C
Humidity	0		95	%RH
Physical				
PCB Dimensions	16.8 x 37.5 x 6.5mm			

Module Transmits & Receives giving:

1. Full error detection and correction
2. Ability to switch to low power modes
3. Calibration & configuration via radio telemetry
4. Ability to be switched from sleep to operating mode via radio
5. Calibration stored within the module
6. Remote battery check

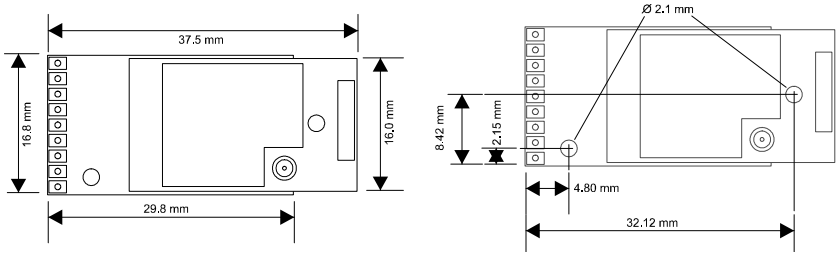
Product Order Codes

T24-TAi Wireless Temperature Acquisition PCB with internal antenna.
T24-TAe Wireless Temperature Acquisition PCB with fitting for external antenna.

For more up to date information visit our website
www.mantracourt.co.uk/products/wireless-telemetry

Mechanical Dimensions

T24-TA - PCB Module



Approvals

CE, Complies with EMC directive. 2004/108/EC
The Radio Equipment and Telecommunications Terminal Equipment (R&TTE) Directive, 1999/5/EC.

Industry Canada Industrie Canada

ISO 9001 REGISTERED FIRM

Designed, Manufactured & Supported in the UK

In the interests of continued product development, Mantracourt Electronics Limited reserves the right to alter product specifications without prior notice.