

TB1000

CYBER SECURITY DIVISION

TETRA Modem Board



The TB1000 TETRA modem board is a complete voice and data module fully compatible with TETRA standard.

The module is designed to be embedded as a sub-system within other devices, that enables system integrators and/or developers to design their own application solutions while exploiting the security, reliability, voice and data transfer capabilities of the TETRA standard.

RELIABILITY AND PERFORMANCE FOR DATA APPLICATIONS

An integral part of PUMA T4 handheld family and based on standard Linux OS, TB1000 is an ultra-compact solution providing access to full TETRA services through an ETSI standard Peripheral Equipment Interface (PEI). IP based multi-slot Packet Data service is complemented by short data messaging capabilities, in addition, TB1000 supports voice services enabling operators on site to contact control rooms or users remotely located, in case of emergency or maintenance operations. Voice and data can be secured thanks to the adoption of Authentication, Air-Interface Encryption and End-to-End Encryption facilities provided by TB1000.

KEY FEATURES

- › Compact size
- › Voice communications
- › Short Data Service (SDS)
- › Packet Data service
- › Security: Air-Interface and End-to-End Encryptions (AES128)
- › PEI interface TETRA standard
- › RF power 3L class (1.8W nominal)
- › Serial and USB interfaces.

FLEXIBLE ENGINE

TB1000 supports both serial asynchronous and IP-based (TCP/UDP) data transfer protocols. Such flexibility enables the modem to fulfill the different requirements in terms of automation protocols that can be found across different geographical regions or environment of use: both polling or event driven monitoring policies can be then implemented.

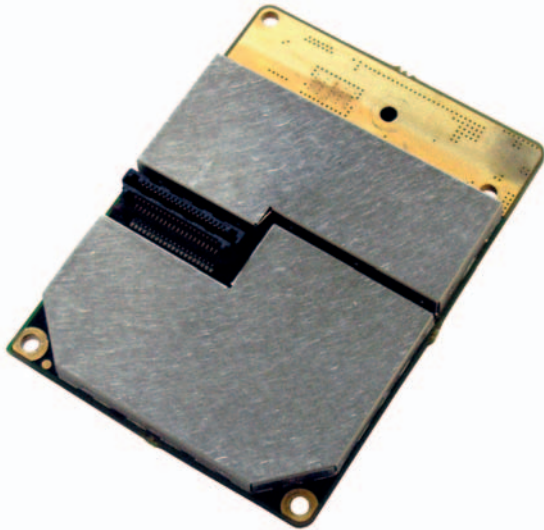
A 40-pin connector make it possible to control and use the TB1000 module, making available a series of interfaces (UART and USB) and signals (for audio, data Tx/Rx, radio ON/OFF, system boot, power supply, etc.).

Due to its fully customizable RF power output up to 1.8W, the module offers above average radio coverage for such a compact size module. The support of all the main UHF TETRA bands ensures usability in most countries and markets.

APPLICATIONS

Typical applications include:

- › SCADA PLC/RTU
- › Smart grid
- › Telemetry & diagnostic
- › Database access
- › Video monitoring
- › Unmanned Aerial Vehicles (UAV's)
- › TETRA radio terminals
- › Multi-technology radio devices.



TECHNICAL DATA

GENERAL

Frequency bands	380 MHz to 470 MHz
TETRA protocols	TMO, DMO, DMO via Repeater, DMO via Gateway
Output power	1.8W (3L TETRA class)
Channel spacing	25 kHz
Security support	› Air-Interface Encryption (TEA 1, 2, 3) › End-to-End Encryption (AES128)
Nominal voltage	4V
Operating voltage range	3.5V to 4.2V
Absorption	› 800 mW - Rx/Idle › 2W - Tx on single slot at max power (3L class) › 8W - Tx on all 4 slots at max power (3L class)

MECHANICAL CHARACTERISTICS

Dimensions (HxWxD)	60x40x12 mm [2,36 x 1,57 x 0,47 in]
Weight	About 34 g [0,07 lb]

ENVIRONMENTAL CONDITIONS

Operating temperature	› -20°C to +55°C [-4°F to 131°F] (conformance tested) › -30°C to +60°C [-22°F to 140°F] (degraded)
Storage temperature	-40°C to +85°C [-40°F to 185°F]

OPERATING SYSTEM AND MEMORY

Operating System	Linux
RAM	4 GB
Internal storage	512 MB FLASH

CONNECTORS AND INTERFACES

Data and power supply	SAMTEC INC LSS-120-01-F-DV-A-TR
Control interfaces and signals	› UART serial link for data TX and RX (0V to 3.15V) › USB OTG link (only for recovery boot and power) › Digital audio interface › General purpose I/O signals › Boot signal (for software download) › Digital P. S. (Vmin=3.5V, Vmax=4.2V, Imax=1A peak) › Power supply for RF power amplifier › Ground
RF output	Radiall R222.941.300
DTE interface	TETRA standard Peripheral Equipment Interface (PEI) with AT commands

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For more information please email:
securityandinformation@leonardocompany.com

Leonardo S.p.a.
Via delle Officine Galileo, 1 - 50013 Campi Bisenzio (FI) - Italy
Tel. +39 055 89501
Fax +39 055 8950600

leonardocompany.com

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