

Model: TMB-4G-2G**Telecommunication Network (grid) Control System Board****Product Type:** Central Control System Board for Multi-Standard Radio Networks**Application:**

LTE + GSM network control platforms / multi-band radio communication systems (Band 3 & Band 8) / Distributed and centralized telecom processing environments / Private, enterprise, and public wireless communication systems

Description:

The Network Control System Board is the primary coordination and processing module within a telecommunication grid system. It manages system-wide control, synchronization, message handling, and communication between processing, fronthaul, and radio modules.

Designed for LTE + GSM operation in Band 3 and Band 8, the board ensures reliable multi-standard performance, efficient resource management, and seamless inter-module connectivity in modern radio access systems.

**Part No.: TMB-4G-2G****Key Features**

- Multi-standard control engine supporting LTE + GSM
- Optimized for Band 3 (1800 MHz) and Band 8 (900 MHz)
- High-performance multicore processor for system management and signaling
- Integrated hardware engine for real-time scheduling and protocol handling
- Support for high-speed transport interfaces (CPRI, Ethernet)
- IEEE 1588v2 and SyncE synchronization support
- Intelligent diagnostics and health monitoring
- Secure boot and integrity verification
- Low-power design with advanced thermal efficiency
- Modular architecture supporting expansion and future upgrades
- Fully compliant with telecom-grade environmental and reliability standards

Functional Description

The system board can support essential network control and coordination, including:

Processing & Control Layer

- Centralized call processing and signaling
- Protocol stack management for LTE + GSM
- Real-time control loop for radio and transport elements

Synchronization & Timing Layer

- High-stability clock generation
- Support for IEEE 1588v2 PTP, SyncE, and GPS-based synchronization
- System-wide timing distribution to subordinate modules

Communication Interfaces

- High-speed fronthaul and backhaul connections
- Multi-port Ethernet/optical interfaces
- Interface management for transport protocols and system messaging

System Management & Monitoring

- Built-in sensors for voltage, temperature, and status telemetry
- Fault detection and automatic recovery mechanisms
- Remote software update and configuration support

Mechanical & Electrical Specifications

| Parameter | Value |
|-------------------------|----------------------------------------------|
| Input Voltage | 12 VDC |
| Processing Architecture | Multicore CPU + hardware accelerators |
| Timing Support | IEEE 1588v2, SyncE |
| Communication Ports | Ethernet / Optical / High-speed serial |
| Dimensions | 200 × 260 mm |
| Cooling | Forced air or chassis conduction |
| Material | High-grade PCB with telecom-grade components |

Environmental Specifications

- Operating Temperature: -40°C to +85°C
- Humidity: ≤95% non-condensing
- Shock & Vibration: Telecom-grade (IEC 60068 series)
- Compliance: RoHS/REACH, EMC/EMI compliant