CMB100XX Series

5G NR Red Cap, LTE Cat 4, Cat 1 bis and Cat M1

Product Description

The CMB100 series is Telit Cinterion's first generation of embedded modems integrating LTE and Red Cap modules.

These embedded modems provide the ability to add reliable cellular connectivity to products while reducing:

- Development costs
- Certification costs
- Cellular product development risks
- Respins and recertifications for radio changes
- Time to market

Key Features

- Standard mini berg connector with 20 mm pitch
- Easy to integrate with peripherals and actuators using USB 2.0 HS, UART and user-definable GPIOs
- Wide power supply support range (1.8 V* to 5.5 V)
- Battery-friendly 1.8 V GPIO
- GPIO level translation for 3.3 V system
- Ideal platform for IoT applications, mobile data and ultracompact computing devices
- Internet-friendly with integrated TCP/IP and UDP/IP stacks
- Firmware over-the-air (FOTA) updates
- FCC/IC, PTCRB and RED certified
- Certified with major carriers
- GNSS for accurate location services
- Common footprint for multiple technologies

Family Concept

One mechanical and electrical form factor supports Telit Cinterion's present and future LTE and 5G technologies. Designers looking to add LTE capabilities to commercial and industrial devices benefit from the uniform form factor. The CMB100 eliminates the complexities and challenges of radio frequency (RF) design. Developers don't need a deep understanding of RF principles and specifications.

IoT Connectivity Ready

The CMB100 family supports Telit Cinterion's extensive value-added services suite:

Centralized device management

- Zero-touch onboarding
- Remote provisioning and configuration
- Monitoring and troubleshooting
- FOTA updates for modules and devices

Edge logic

- Define and build edge device logic
- Optimize behavior and resource usage
- Set control logic remotely
- Simplify edge life cycle management Embedded security
- Embedded security at manufacture
- Encrypted device-to-cloud communications

Connectivity and SIM management

- Simplified service profile and self-care subscription design and management
- Real-time diagnostics and controls for SIM and data plan monitoring and management

Enterprise integration

- Integrates with third-party business systems
- Delivers data to enterprise applications

Worldwide

CMB100XX Series

	CMB100A0-WW CAT 4	CMB100B0-WW CAT 1 BIS CMB100B1-WW CAT 1 BIS	CMB100C0-WW CAT M1	CMB100D0-WW Red Cap
Market	Worldwide	Worldwide	Worldwide	Worldwide
5G FR1	-	-	-	n1, n2, n3, n5, n7, n8, n12, n13, n14, n18, n20, n25, n26, n28, n30, n38, n40, n41, n48, n66, n70, n71, n77, n78, n79
4G FDD	B1, B2, B3, B4, B5, B7, B8, B9, B12, B13, B14, B18, B19, B20, B25, B26, B28	B1, B2, B3, B4, B5, B7, B8, B12, B13, B18, B19, B20, B25, B26, B28, B66, B34, B38, B39, B40, B41	B1, B2, B3, B4, B5, B8, B8_US*, B12, B13, B18, B19, B20, B25, B26, B27, B28, B66, B71, B85, B86*	B1, B2, B3, B4, B5, B7, B8, B12, B13, B14, B17, B18, B19, B20, B25, B26, B28, B30, B34, B38, B39, B40, B41, B42, B43, B48, B66, B71, B106
HSPA+1	B1, B2, B4, B5, B6, B8, B19	-	-	-
2G	B2, B3, B5, B8	-	B2, B3, B5, B8	-
NB IoT		-	B1, B2, B3, B4, BS, B8, B12, B13, B18, B19, B20, B2S, B26, B28, B66, B71, B8S	-
GNSS	Concurrent (L1)	Concurrent (L1) (Only available on the CMB100B1-WW)	Non-concurrent (L1)	Concurrent (L1/L5)
AppZone	Yes	-	Yes	Yes
Embedded Module	LE910C04-WWXD	LE910Q1-WW LE910Q1-WWG	ME910G1-WW	FE910C4-WWD

Product Features

- CMB100A0 Cat 4, 3GPP Rel10 compliant
- CMB100B0/B1 Cat 1 BIS, 3GPP Rel 14 Compliant
- CMB100C0 FDD Cat 1/Cat M1, 3GPP Rel 14 Compliant
- CMB100D0 Red Cap, 3GPP Rel 17 5G NR sub-6 compliant
- Rx diversity and MIMO DL 2 x 2
- Single Rx option
- SMS over IMS
- Built-in UDP/TCP/FTP/SMTP stack
- IPv4/IPv6 stack
- Control via AT commands according to 3GPP TS 27.005, 27.007 and Telit Cinterion custom AT commands
- SIM application Tool Kit 3GPP TS 51.014
- OMA-DM Telit Cinterion software management
- Simultaneous support of GPS, GLONASS, BeiDou, Galileo and QZSS

Hardware and Electrical Specifications

- Dimensions 36 x 30 x 11.0 mm (unmated)
- 20-pin THT interface
- 10 I/O ports, including multifunctional I/Os
- USB 2.0 HS/HSIC
- UART
- 1.8 V/3V SIM interface
- RX Main & diversity connectors
- GNSS connector
- Industrial temperature range: -40°C to +85°C[1]
- Compliant with REACH and RoHS
- Output power
  - Class 3 (0.2 W, 23 dBm) @ LTE
- Supply voltage range:
  - Nominal: 3.8 V dc
  - Range: 1.8-5.5 V dc, 1.8-2.5 V dc with limitations[2]

Data

Cat M1
- Uplink up to 1 Mbps
- Downlink up to 1 Mbps

Cat 1 Bis
- Uplink up to 5 Mbps
- Downlink up to 10 Mbps

Cat 4
- Uplink up to 50 Mbps
- Downlink up to 150 Mbps

5G NR FR1 (20 MHz)
- Uplink up to 100 Mbps
- Downlink up to 220 Mbps

DC-HSPA+ 42 Mbps
- Supported on variants with 3G fallback

Approvals

- FCC/IC (North America)
- RED/GCF (Europe)
- PTCRB

[1]End product integration of the CMB100 may impact the overall operating temperature range.
[2]2G Operating voltage range limited to 2.5 V dc to 5.5 V dc.

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