

# UMTS | HSPA 5.76/7.2



## HE863 Family Embedded



- GPS Receiver
- Telit Unified AT Command Set
- BGA Package
- Multi Band
- Dual Band HSPA
- Quad Band Edge
- Quad Band GPRS
- RoHS Compliant
- SIM Access Profile
- USB 2.0 High Speed Compatible
- Extended RF Sensitivity
- Embedded TCP/IP Stack



The HE863 modules are small, lightweight, low power consumption and RoHS compliant devices which combines the access to digital communication services in GSM, GPRS, EDGE and HSPA networks with BGA form factor.

The Ball-Grid-Array (BGA) package provides for a very low profile in the integrated solution while at the same time enhancing the performance of mechanical resistance to shock and reducing cost in high-volume applications, saving space and weight in portable devices.

The HE863 family includes features like HSDPA 7.2 Mbps (Cat 8), HSUPA 5.8 Mbps (Cat 6), EGPRS Class 12, Voice, Circuit Switched Data Transfer, FAX, Phonebook and SMS support, embedded TCP/IP protocol stack and custom Telit AT commands).

Some variants of HE863 family are also provided with integrated high sensitivity A-GPS functionality for indoor fixes and simultaneous GPS with voice and data.

Several HE863 variants are available for each regional coverage: Standard variant (voice & data), GPS variant (voice, data & GPS) and Data Only variant (data).

As a part of Telit's corporate policy of environmental protection, all Telit products comply to the RoHS (Restriction of Hazardous Substances) directive of the European Union (EU Directive 2002/95/EG).

Several variants are available for each regional coverage

### Variants for European/Asian market

- HE863-EUG: 4 B GSM/GPRS/EGPRS + HSPA in 900/2100 MHz + GPS
- HE863-EUR: 4 B GSM/GPRS/EGPRS + HSPA in 900/2100 MHz
- HE863-EUD: 4 B GSM/GPRS/EGPRS + HSPA data only in 900/2100 MHz

### Variants for Australian market

- HE863-AUG: 4 B GSM/GPRS/EGPRS + HSPA in 850/2100 MHz + GPS
- HE863-AUR: 4 B GSM/GPRS/EGPRS + HSPA in 850/2100 MHz
- HE863-AUD: 4 B GSM/GPRS/EGPRS + HSPA data only in 850/2100 MHz

### Variants for North American market

- HE863-NAG: 4 B GSM/GPRS/EGPRS + HSPA in 850/1900 MHz + GPS
- HE863-NAD: 4 B GSM/GPRS/EGPRS + HSPA data only in 850/1900 MHz
- HE863-AWG: 4 B GSM/GPRS/EGPRS + HSPA in AWS band + GPS

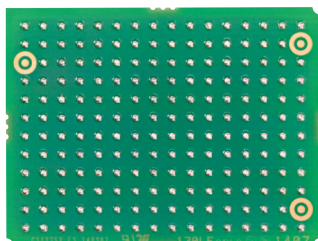
### Product features

- HSPA data up to 7.2 Mbps DL/ 5.8 Mbps UL
- Optional GPS
- Quad Band GPRS and EDGE class 12
- Small dimensions 31.4 x 41.4 x 3.0 mm
- Extended temperature range -30°C to +85°C [Operational] -40°C to +85°C [Storage]
- SIM Access Profile
- GSM/GPRS protocol stack 3GPP release 6 compliant
- Control via AT commands according to 3GPP TS27.005, 27.007 and customized AT commands
- Serial port multiplexer 3GPP TS27.010
- SIM application Tool Kits 3GPP TS 51.014
- TCP/IP stack access via AT commands

**Making machines talk.®**

# HE 863-Family

Embedded



actual size

### Optional GPS receiver

- GPS power consumption:
  - 9 mW in tracking
  - 7 mW in stand-by
- High sensitivity for indoor reception, up to -165 dBm (with active antenna)
- Accuracy < 2 m
- Extremely fast TTFF's at low signal levels
- Hot start autonomous < 1 s
- Warm start autonomous < 32 s
- Cold start autonomous < 40 s
- Supports multi-channel GPS, L1 1575.42 MHz
- GPS NMEA 0183 output format
- Date WGS-84
- Dedicated GPS AT commands
- Low power consumption

### Interfaces

- 18 I/O ports maximum including multi-functional I/Os
- Buzzer output
- Status LED output
- Analog audio (Balanced type)
- I2S for digital audio interface
- 3 A/D converters, 1 D/A converter (PWM output)
- Full RS232-C CMOS UART, fixed baud up to 230 kbps
- USB 2.0 HS OTG
- 1.8 V/3 V SIM interface
- Solder pads on PCB for antenna connection

### Data

- HSPA category 6 in Uplink and Category 8 in downlink
  - Downlink up to 7.2 Mbps
  - Uplink up to 5.76 Mbps
- WCDMA
  - Downlink/Uplink up to 384 kbps
- EDGE
  - Downlink up to 236.8 kbps
  - Uplink up to 118 kbps
- GPRS
  - Downlink up to 85.6 kbps
  - Uplink up to 42.8 kbps
  - PBCCH support
- CSD
  - Downlink/uplink up to 14.4 kbps

### Approvals

- RoHS Compliant
- CE, GCF (Europe)
- FCC, PTCRB, IC (North America)

### Electrical

- Output power
  - Class 4 (2 W, 33 dBm) @ GSM 850 / 900
  - Class 1 (1 W, 30 dBm) @ GSM 1800 / 1900
  - Class 3 (0.25 W, 24 dBm) @ UMTS
  - Class E2 (0.5 W, 27 dBm) @ EDGE 850/900
  - Class E2 (0.4 W, 26 dBm) @ EDGE 1800/1900
- Sensitivity
  - -108.2 dBm @ WCDMA
  - -107 dBm @ GSM 850 / 900 MHz
  - -106 dBm @ DCS1800 / PCS1900 MHz
- Supply voltage
  - Nominal: 3.8 VDC
  - Range: 3.4 - 4.2 VDC
- Power consumption
  - TBD

### Additional features

- Voice and SMS
- TCP stack with IP and UDP protocols
- Standard and extended AT command set
- Minimal power consumption

### Order-No.

Please contact your Telit representative for order codes and all further information

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