

# Titan Multi Mode 3G Cell Modem

## Features:

- \* Supports both CDMA and GSM/HSPA+ technologies
- \* Integrated TCP/IP stack and AT Commands
- \* Serial and USB 2.0 communications Interfaces
- \* Multi SIM, Multi Carrier operation
- \* Remote Dual SIM option for easier Host integration
- \* Embedded SIM option for rugged M2M applications
- \* Autonomous and Assisted GPS operation
- \* Supports interface for active antenna integration
- \* Designed especially for battery powered host systems
- \* Connects to host via USB cable, a custom serial/USB cable or plugs directly on the host PCB.
- \* Plug in Titan Processor Module available to run protocol stacks and applications.
- \* Same footprint as forthcoming 4G LTE Modem



The Titan III (T3) Multi Mode 3G Cellular modem for machine to machine (M2M) applications offers a smart solution for cellular connectivity today and in the future. The T3 supports both CDMA and GSM / HSPA+ technologies in a single device eliminating the need for multiple designs for worldwide deployment and quick integration with your host systems. The T3 supports both low and high level AT commands for configuration and internet connectivity. This enables compatibility to legacy host systems requiring upgrade to 3G cellular technologies. Using USB interface enables high speed communications with the host. Speeds up to 1Mbps are possible over serial interface.

The T3 has an onboard SIM Socket. For M2M applications requiring extra ruggedness and security, the T3 is available with an Embedded SIM option. Up to two additional SIM sockets or Embedded SIM can be added as plug-in either directly on the module or via a short cable for greater flexibility in host system integration. In mobile applications, use of multiple SIMs enable the T3 to operate in more than one home network thus avoiding expensive roaming charges.

Accurate location is available using Autonomous as well as Assisted GPS capability via a dedicated connector to which either an active or a passive GPS antenna is connected. For additional security Antenna open and short detection capability has been integrated.

The T3 facilitates integration of an active cellular antenna using a dedicated control interface thus allowing for dynamic antenna tuning. This capability enables applications that demand highest cellular performance or where the cellular antenna can get detuned due changing placements or surroundings.

The GSM/GPRS mode requires short current bursts of up to 2.5 Amps. Most battery powered and small systems cannot provide such high current. T3 proprietary design reduces this demand to around 0.8A @5V. This has a significant impact on extending operating life of the host battery on a single charge.

The T3 provides multiple options for host connection. It can directly connect using a standard USB cable<sup>1</sup> or using a custom cable that provides serial interface as well as USB interface. Alternatively, the T3 can be directly plugged into a host PCB if it designed with a mating SMT connector.

Custom applications and communication stacks can either run on the host system or the Titan add on Processor module available with a Linux based platform. Host connection can be serial or USB.

### Cellular Technology:

GSM or CDMA (dynamically configurable)  
3G: HSPA+ or 1xEVDO  
2G (Fallback): GPRS/EDGE, 1xRTT, 1xAdvanced

### Frequency and Bands

HSPA+: 800/850/900/1900/2100 MHz  
GPRS/EDGE: 850/900/1800/1900 MHz  
CDMA 2000 1x, EV-DO A: BC0/BC1, BC10

Data Rates:	Uplink <sup>2</sup>	Downlink <sup>2</sup>
HSPA	5.76 Mbps	14.4Mbps
WCDMA	384 Kbps	384 Kbps
EDGE	118.4 Kbps	236.8 Kbps
GPRS	42.8 Kbps	86.6 Kbps
1xEVDO	1.8 Mbps	3.1 Mbps
1xAdvanced	307.2 Kbps	307.2 Kbps
1xRTT	153.6 Kbps	153.6 Kbps

### GNSS

- Autonomous GPS and GLONASS
- AGPS : stand alone, XTRA, CP E911
- Protocol: NMEA-0183 V2.3
- Tracking Sensitivity: better than -158dBm

### Antenna Connectors

- U.FL for Primary TX/RX
- U.FL for RX Diversity
- U.FL for Passive or Active GPS

### Antenna Requirements

Cellular:

- Omni directional, 50 Ohm
- Gain: <3dBi, VSWR: <2.5

GPS (active):

- RHCP, 50 Ohm
- Gain 17~25 dB, VSWR <1.5, NF <1.5

### LED Indicators

- Cellular Activity
- Signal Quality (none, poor, fair, good)

### Onboard SIM (primary)

- Push-in, Push-out SIM Card Socket
- Embedded SIM (optional)

### Add-on SIM OPTION (attached OR remote)

- 2 x Push-in, Push-out SIM Card Sockets or
- 2x Embedded SIM (optional) or
- 1 x Push-in, Push-out SIM Card Socket and 1 x Embedded SIM (optional)

### Voltage Requirements:

- Supply voltage: 3.8VDC ~5.5VDC
- Signal levels: 3.3V complaint

### Temperature

- Operating : -30°C to +70°C
- Storage: -40°C to +85°C

### Humidity

- 20% to 90% Non-condensing

**Dimensions:** 70mm x 40mm x 8mm

### Internet Communications

- AT commands (TS 27.007, TS 27.005)
- UDP Client – 1 concurrent socket
- Non-Transparent or Transparent TCP Client – 2 concurrent sockets

### Connectors

- 50 Position 0.5mm pitch SMT (serial, USB, GPIO)
- microUSB2 (USB 2.0 High/Full Speed)
- 8 Position 0.5mm flex cable for active antenna

### Compliance

#### Regulatory (FCC, IC and CE)

- FCC Part 15 Subpart B Class B
- FCC Part 22H,24E,27
- IC ICES-003 Issue 4 Class B
- IC RSS 102, 132, 133, GEN
- ETSI EN 301 489-1,-3,-7,-24
- ETSI EN 301 511, 908-1 & -2
- EN 300 440-2
- EN 62311, EN 60950

**Association:** PTCRB, GCF

#### Operator<sup>3</sup>

- AT&T, T-Mobile, Verizon, Sprint
- Rogers, Bell, Telus

#### Environment:

- RoHS: Directive 2002/95/EC
- REACH: 1907/2006/EC
- WEEE Directive 2002/96/EC

### Ordering Part Number

**T3G15202-001**

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