



# GTM378

- PCI Express MiniCard module with HSDPA 3.6/7.2 support
- Easy to integrate
- High speed: up to 7.2 Mbps
- Multimode HSDPA, UMTS, EDGE, GPRS and GSM
- Extended Feature set: GPS and Voice
- Flexible driver design for easy software integration
- Wide range of infrastructure testing and certifications



## About GTM378 (Models: MO 0201 / MO 0202 / MO 0203)

The GTM378 is the second generation of PCI Express MiniCard module designed by Option to be compatible with mobile operator infrastructure equipment capable of supporting HSDPA data rates of up to 7.2 Mbps. The GTM378 is the right solution for embedding HSDPA, 3G and EDGE connectivity technology into laptops and PDA devices.

The GTM378 includes Advanced Receiver Technology (ART) bringing the benefit of Receive Diversity and Receive Equalization. Both are essential for

maximizing the benefit of HSDPA 7.2. Initially supplied with HSDPA 3.6, the GTM378 is field upgradeable when the network is configured for HSDPA 7.2. Backward compatibility ensures HSDPA connections at lower data rates of 3.6 Mbps and 1.8 Mbps. The GTM378 has inherent support for 3G operation at 384 Kbps in conjunction with quad-band EDGE and GPRS. Even more use cases become possible with the GPS and voice capabilities of this module.

## Features

- Global connectivity with triple-band 3G and quad-band 2G
- A-GPS/S-GPS Positioning
- CS Voice support
- Advanced Receiver Technology incorporating Receiver Diversity and Equalization
- High-speed data with HSDPA and UMTS (up to 7.2 Mbps downlink and 384 Kbps uplink) and backward compatible with EDGE / GPRS / GSM data connectivity (up to 247 Kbps)
- Transparent hand-over between UMTS and GSM / EDGE networks
- Low power dissipation for easy embedding into devices
- Benefits from large Option experience in PC datacards
- Easy integration made possible thanks to:
  - Testing on infrastructures and networks worldwide
  - Flexible driver design providing both NDIS and modem modes for easy integration into dashboard applications
  - Future proofing through Flash Memory technology
  - Connectors for external antennas

## Specifications

- HSDPA/UMTS
  - . Multi-bands variants (bands with Rx diversity are underlined)
    - › MO 0201: 850 / 1900 / 2100 ( Rx diversity) MHz
    - › MO 0202: 850 (Rx Diversity) / 1900 (Rx Diversity) / 2100 MHz
    - › MO 0203: 800 (Rx Diversity) / 1700 / 2100 (Rx Diversity) MHz
  - . Power Class 3 (+24 dBm)
  - . HSDPA modes:
    - › HSDPA 1.8: Categories 1-4, 11 and 12
    - › HSDPA 3.6: Categories 5 and 6
    - › HSDPA 7.2: Category 7 and 8 (SW upgrade)
  - . Equalization
  - . Rx diversity
  - . UMTS: 384 Kbps operation in downlink, 384 Kbps in uplink
  - . Support UL and DL Compressed Modes
  - . Circuit-switched data: 64, 14.4 and 9.6 Kbps
- EDGE
  - . 850/900/1800/1900 MHz
  - . GSM Power Class 4 (2W) for 850/900 bands, GSM
  - . Power Class 1 (1W) for 1800/1900 bands
  - . EDGE class E2 (+27 dBm in 850/900 bands, +26 dBm in 1800/1900 bands)
  - . GPRS/EDGE Multislot Class 12 (4 slots Rx, 4 slots Tx)
  - . GPRS/EDGE Class B Type 1 MT
  - . GPRS CS1-CS4; EDGE MCS1-MCS9
  - . Circuit-switched data: 14.4 and 9.6 Kbps

## Assisted/Stand-alone GPS

- A-GPS and S-GPS modes, as described below:
  - . MS-based, MO or MT
  - . MS-assisted, MO or MT
  - . Stand-alone

## Voice features

- Circuit-switched voice calls over GSM/WCDMA air interfaces, MO and MT
- Controlled through AT commands
- Bi-directional PCM interface for audio streams (8-bits u-Law A-Law, 16-bits linear)
- Voice codecs: GSM/WCDMA AMR, FR, EFR, HR
- Echo Cancellation, Noise Suppression, TTY
- Tone detection / generation

- Emergency call support
- CLI Service, Alternate Line Service
- Fixed number dialling
- Supplementary services
- Circuit-switched video call:
  - . Video stream transport over WCDMA CSD bearers
  - . Transport layer control through AT commands
- Phonebook
- SMS Management

## Terminal Equipment Interfaces

- USB 2.0 signalling
- AT interface with standard modem emulation
- NDIS and Modem interface drivers
  - . NDIS for OS compliance and future proofing (Vista)
  - . Modem interface to allow 3rd party application support
- EAP-SIM/EAP-AKA support
- Operating Systems supported:
  - . Windows™ 2000 SP4 / XP Home / XP Professional / Vista
  - . Tablet XP Pro / Mac OS X Tiger
- PCM voice support on PCIE minicard interface

## Power Requirements

- Vcc 3.3V +/- 9%

## Hardware specifications

- Operating Temperature: -10 to +55°C
- Extended Operating Temperature: -25 to +75°C
- Storage Temperature: -40 to +85°C
- Humidity: 5 to 95% non-condensing

## Approvals & Certifications

- All applicable regulatory approvals, Operator and Infrastructure IOT
- Microsoft certified drivers
- R&TTE (900/1800/2100) and FCC (850/1900)
- PTCRB and GCF (900/1800/2100)
- Japanese Certification (800/1700/2100)
- RoHS Compliant



As part of their continual product improvement process, Option reserves the right to alter the specifications for the product detailed here.