# Quad-Band GSM/GPRS Transmit Module

TriQuint Semiconductor's revolutionary Quad-Band GSM/GPRS Transmit Module is the smallest, most highly-integrated form factor (6 &#215 6 &#215 1.1 mm ) module currently available. It offers greater system integration and superior cost-effectiveness for next generation mobile cellular handset designs.

## Convergence

The TQM6M4001 leverages the discrete GSM850/900 and DCS1800/PCS1900 PA blocks and integrated power control found in current generation power amplifier modules. It adds the the low insertion loss quad-band pHEMT switch, TX harmonics filtering, integrated switch decoder, four receive ports, and full internal ESD protection necessary to implement full RF transmit/receive functionality.It requires no external matching and saves customers the need for any PA-to-switch design effort. This advancement was achieved in part by eliminating all surface mount devices (SMDs) inside the laminate-based module, resulting in clear size, cost, reliability and time-to-market advantages.
This module offers outstanding performance and integration while enabling custom phone designers to significantly simplify and reduce next-generation mobile design form factors. This is an advantage in RF partitioning and decreases time-to-market situations.
The module implements TriQuint's InGaP, GaAs HBT and GaAs PHEMT. This PA Module offers very compelling features in respect to RF performance in all four GSM frequency bands, reliability, ruggedness and performance under mismatch conditions.

## Specifications

&#149 GSM850/900 system PAE: 45% &#149 DCS/PCS output power: +31.5 dBm typical &#149 DCS/PCS system PAE: 42%&#149 0 to 6 dBm drive level; 75 dB dynamic range &#149 Rx-insertion loss: 0.8 dB in GSM band; 1.0 dB in DCS/PCS band. &#149 50 W input and output impedance; no external matching required &#149 GPRS class 12 compatible &#149 No external reference voltage needed &#149 ESD protection circuitry with 8 KV ESD protection (IEC 61400-4-2) at antenna port &#149 Pin-out aligned to today's most popular GSM GPRS transceivers

## The Solution

The TQM6M4001 transmit module complements TriQuint`s product family of GSM GPRS power amplifier stand-alone modules (e.g. TQM7M4014 [7 &#215 10 mm] and TQM7M4022 [7 &#215 7 mm]) and offers an RF transmit turn-key solution by eliminating the need for a separate, front-end switch module, power control

circuitry and matching components for the PA and front-end design.
***The TQM6M4001 offers outstanding performance and integration while enabling custom phone designers to simplify and reduce next-generation mobile design form factors.***

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