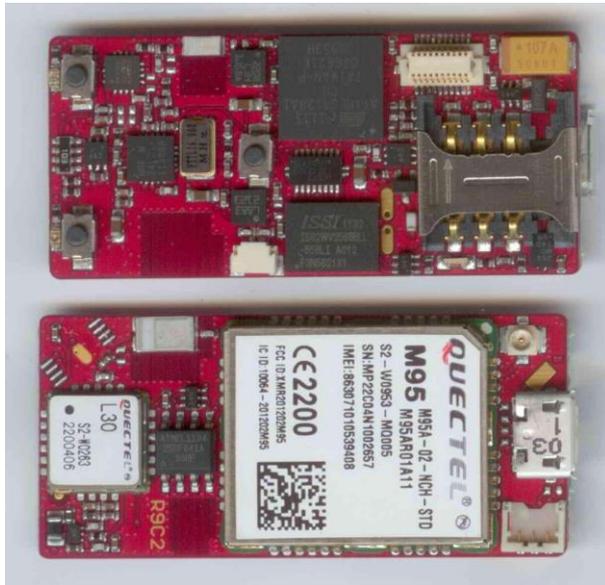


KCS TraceME TM-202 GPS / GPRS / SMS / RfID module, OEM Version



The KCS GPRS/GPS range of modules enable you to remotely track & trace peoples, animals and a variety of objects, e.g. cars, trucks, containers, (motor)cycles, lawnmowers, boats, etc. KCS TraceME TM-202 is targeted for personal use and any other application that need a minimum size, an extremely long battery life while maintaining the exact same options and server connection the full-size units have.

Key Features and options

- Quad-band GSM for worldwide coverage
- Very small, only 46 x 21 x 6.5 mm.
- Lightweight: 7 grams for the fully equipped PCB, 5 grams for a suitable 450mAh rechargeable battery.
- Ultra low power consumption, down to 3uA
- Serial, analog and digital interfaces
- 3 pushbuttons, 3 leds for user interaction
- 20 pin extension header
- Excellent GPS accuracy (onboard antenna), A-GPS options
- 2.4 GHz short range radio (+30 mtrs) for special functions and peripherals. Optional onboard RF amplifier for over 1 km range (line of sight).
- Onboard sensors: 3D magnetic compass, 3D accelerometer up to 16g.
- Wide operating range: -40 °C ... +85°C (using Primary Lithium Cell)

- Multiple watchdog levels for maximum stability
- Dual charge protection for voltages and temperature range.
- Remote configurable to fit any job (both firmware and configuration files can be updated over the air)
- Configuration can be both Server and Event driven, 300+ different events, over 4000 geozones.
- Runs local user scripts via .src files.
- Supports multi server configuration
- User definable SMS commands
- Audio with microphone and embedded class AB speaker amplifier
- Micro-sim and Sim-On-Chip options

Typical applications

- Vehicle and boat tracking
- Object protection, up to 10 years of standby on a single Lithium battery.
- Logistics
- M2M
- Animal tracking
- Security and surveillance
- Remote control and diagnostics
- Anti-theft
- Asset monitoring

Product Summary

Equipped with a state-of-the-art GPS receiver, the KCS TraceME TM-202 module provides reliable and accurate navigational data. All communication is handled effectively by a GPRS/GSM modem (QUAD band version) through GPRS or SMS. In areas without network coverage, position-data and events are stored in memory (up to 55,000 positions). As soon as communication is restored, all information can be transmitted.

A new feature that makes the TM-202 product even more unique is the 2.45 GHz short range radio. It enables localization inside buildings and special power saving features for applications like Alzheimer's disease or security people.

All of the necessary server-side scripts to process and store data from these units are available, free of charge. If you do not want to host data and maps yourself, you can use the hosting services of one of our partner companies.

Specifications KCS TraceME TM-202

Data communication

GPRS Modem	QUECTEL M95 QUAD band, global certifications and R&TTE directives.
Power supply	Supply voltage: 3.2V - 4.6V
Power saving	Typical power consumption in sleep mode: 1.3mA @ DRX=5 1.2mA @ DRX=9
Frequency bands	<ul style="list-style-type: none"> • Quad-band GSM850, GSM900, DCS1800, PCS1900 • Frequency bands can be set by AT command • Compliant with GSM Phase 2/2+
GSM Class	Small MS
Transmitting power	<ul style="list-style-type: none"> • Class 4 (2W) at GSM850 and GSM900 • Class 1 (1W) at DCS1800 and PCS1900
GPRS connectivity	<ul style="list-style-type: none"> • GPRS multi-slot class 12 (default) • GPRS multi-slot class 1~12 (configurable) • GPRS mobile station class B

RF Communication

Radio chip	Nordic nRF24L01+		
Frequency	Worldwide 2.45 GHz ISM band, 126 channels, GFSK modulation		
Amplifier	RFaxis RFX2401C		
		Without amplifier	With amplifier
RF Tx Power		0, -6, -12, -18 dBm	+20, +14, +8, +2 dBm
RF Rx Sensitivity	2Mbps	-82dBm (typical)	-90dBm (typical)
	1Mbps	-85dBm (typical)	-93dBm (typical)
	250Kbps	-94dBm (typical)	-102dBm (typical)
Ultra low power		13uA average current use, at 1 RX/TX per second	90uA average current use, at 1 RX/TX per second, +20dBm Tx.

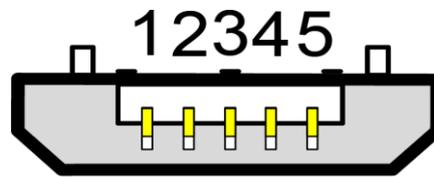
Navigation

GPS Receiver	Sirf-IV GSD4e	
Frequency	GPS L1 1575.42Mhz C/A Code, 48 search channels	
Sensitivity	Cold start (Autonomous)	-145dBm
	Reacquisition and Navigation	-159dBm
	Hot start	-159dBm
	Tracking	-160dBm
Horizontal Position Accuracy	<2.5m CEP	

Electrical

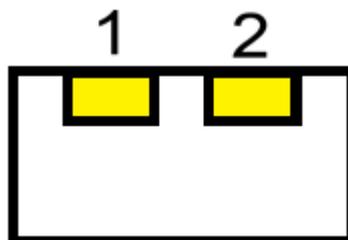
Power supply	5VDC±10%. Max power consumption via micro-usb: 600 mA
Charging Current (LiPolymer)	450 mA. Observing 0...+45 °C safety range for LiPolymer.
Typical Power Consumption	30 mA, GPS full power tracking, open GPRS session
	8 mA, GPS trickle power tracking (one position update per 4 seconds), open GPRS session
	3 uA, GPS/GPRS/sensors powerdown, 4 inputs and 1 timer active

External connections: MICRO-USB



Pin	Signal	Type	Description
1	USB VCC	VCC	+4.5...+5.5 VDC Charge input, max 600 mA
2	Serial IN	I	Serial input or digital input (2..31V for active high), ~ 50K pulldown
3	Serial OUT	O	Serial or digital output, open collector (max 31V / 10 mA / 100mW)
4	Optional	I/O	Optional: Analog Input or digital I/O
5	GND	GND	GND for charge and I/O

External connections: Audio



Pin	Signal	Type	Description
1	N	Speaker Output	Class AB, max 800 mW, negative speaker output
2	P	Speaker Output	Class AB, max 800 mW, positive speaker output

About KCS BV

KCS BV, founded in The Netherlands in 1984, develops and manufactures electronics in-house for industrial applications, medical purposes, broad-casting solutions, etc.

Support

Please visit our support page at <http://www.trace.me>

Final notes & certification

We certify that Kolff Computer Supplies BV, Dordrecht, The Netherlands does not make any hardware or IMEI modifications to the QUECTEL devices as used in the TraceME track&trace device. All software modifications are restricted to official firmware upgrades as provided by Quectel Wireless Solutions Co., Ltd..

KCS is ISO 9001-2008 and ISO-14001 certified since 1999.

WARNING:

- The device should be turned off in vicinity of petrol pumps, chemical, flammable or hazardous environments where ignition of flammable atmospheres is possible.
- The GSM unit and antenna shall be operated at a distance greater than 20 cm from the human body.
- The device is to be operated in accordance with the user instructions or manufactured recommendations.

Disclaimer:

KCS BV reserves the right to make changes without further notice to any products herein to improve reliability, function or design. KCS BV does not assume any liability arising out of the application or use of any product or circuit described herein; neither does it convey any license under its patent rights, nor the rights of others.

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