

DESCRIPTION

The UCM-93 industrial triband GSM/GPRS modem is a terminal for data transmission, fax and short message service (SMS) over the GSM/GPRS Network. The modem is designed for industrial telemetry applications. UCM-93 radio engine is fully type approved according to several international specifications and are therefor applicable to use all over the world.

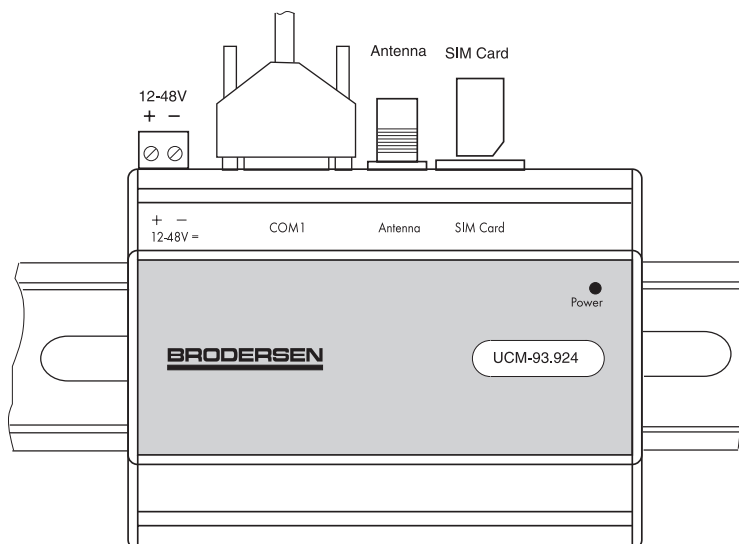
Serial RS232 interface with remote control by AT commands for dedicated applications.

GPRS (General Radio Packet Service) provide you with wireless networking facilities. Require PPP protocol handling on the serial interface.

The GSM/GPRS modem is designed in an aluminium housing for DIN rail mounting. Supply voltage is 12-48VDC. A LED on the front indicates the operating mode.

The SIM card slot and FME antenna connector is placed on the top of the module.

UCM-93.924

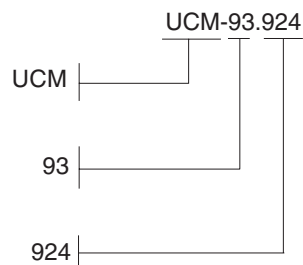


VERSIONS/ORDERING CODE

Type
Modem

Type no
GSM data and GPRS modem

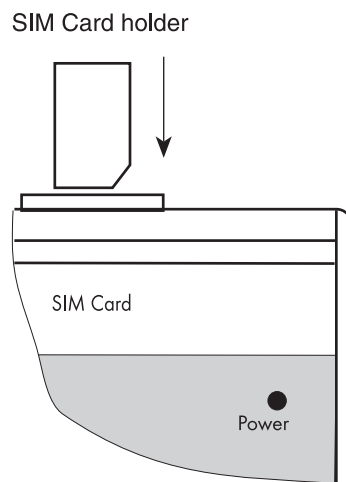
Power supply
12-48VDC



Note: Antenna has to be ordered separately.

GSM/GPRS Modem
UCM-93**Connecting and wiring the UCM-93**

Place your GSM or GPRS-enabled SIM card in the SIM card slot. See the figure of direction of the SIM card below. Press gently the SIM card down till you feel a small “click” and the SIM card is fixed. (The SIM card is removed again by pressing it down till it is released). Finally fit the antenna and connect the power.

**TECHNICAL DATA**

Frequency bands:	EGSM 900, GSM 1800, GSM 1900 Compliant to GSM Phase 2/2+
Transmit power:	Class 4 (2W) at EGSM 900 Class 1 (1W) at GSM 1800 and GSM 1900
GPRS connectivity:	GPRS multi-slot class 10 GPRS mobile station class B

DATA

GPRS:	GPRS data downlink transfer: max. 85.6 kbps GPRS data uplink transfer: max. 42.8 kbps Coding scheme: CS-1, CS-2, CS-3 and CS-4 supports the two protocols PAP (Password Authentication Protocol) and CHAP (Challenge Handshake Authentication Protocol) commonly used for PPP connections. Support of Packet Switched Broadcast Control Channel (PBCCH) allows you to benefit from enhanced GPRS performance when offered by the network operators.
CSD:	CSD transmission rates: 2.4, 4.8, 9.6, 14.4 kbps, non-transparent, V.110 Unstructured Supplementary Services Data (USSD) support
SMS:	MT, MO, CB, Text and PDU mode SMS storage: SIM card plus 25 SMS locations in the mobile equipment Transmission of SMS alternatively over CSD or GPRS. Preferred mode can be user-defined.
TCP/IP stack:	Internet services: TCP, UDP, HTTP, FTP, SMTP, POP3. Access by AT commands
FAX:	Group 3: Class 1, Class 2
SIM interface:	Supported SIM card: 3V SIM card mounted in top of module with push-pull function.

Serial Interface:

Signals: RS232 V.24/V.28,
Autobauding detects 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200,
230400 bps

Character framing: adjustable, default Data bits: 8
Parity: none
Stop bits: 1

Connector: 9 pole, sub-D, female, standard modem connection.

Hardware handshake: DCD, DTR, DSR, CTS, RES, RI
Supports hardware handshake and software XON/XOFF flow control

Real time clock: Implemented

Timer function: Programmable via AT command

Firmware upgrade: Firmware upgradable over serial interface and SIM interface

Antenna: External antenna via FME connector.

Indicator: Red LED on front.
LED mode operating status:

Permanently off:	Power off
600ms on / 600ms off:	Limited Network Service: No SIM card inserted or no PIN entered, or network search in progress, or ongoing user authentication, or network login in progress.
75ms on / 3s off:	IDLE mode: The mobile is logged to the network monitoring control channels and user interactions). No call in progress.
75 ms on / 75 ms off / 75 ms on / 3 s off: 0.5 s on / off:	GPRS contexts activated. Depending on transmission activity Packet switched data transfer in progress. LED goes on within 1 second after data packets were exchanged.
Permanently on:	Connected to remote party or exchange of parameters while setting up or disconnecting a call.

Power supply:

Supply voltage: 12-48V DC (10,5-60VDC). **IMPORTANT NOTE 2**
The modem is protected against voltages above 60VDC.

Consumptions (12V): Input max. peak current: 1A
Input average current in com. mode: 0,25A
Input average current in idle mode: 20mA

Connector: Removable screw terminal.

Environmental conditions:

Ambient temperature: Operating conditions: -20 - +55°C
Storage conditions: -40 - +85°C

GSM/GPRS Modem
UCM-93

Type of test Conditions Standard

Vibration

Frequency range: 10-20 Hz; acceleration: 3.1mm amplitude

Frequency range: 20-500 Hz; acceleration: 5g

Duration: 2h per axis = 10 cycles; 3 axes

DIN IEC 68-2-6

Shock half-sinus

Acceleration: 500g

Shock duration: 1msec

1 shock per axis 6 positions ($\pm x$, y and z)

DIN IEC 68-2-27

Dry heat

Temperature: $+70 \pm 2^\circ\text{C}$

Test duration: 16 h

Humidity in the test chamber: $< 50\%$

EN 60068-2-2 Bb ETS 300019-2-7

Temperature change (shock)

Low temperature: $-40^\circ\text{C} \pm 2^\circ\text{C}$ High temperature: $+85^\circ\text{C} \pm 2^\circ\text{C}$ Changeover time: $< 30\text{s}$ (dual chamber system)

Test duration: 1 h

Number of repetitions: 100

DIN IEC 68-2-14 Na ETS 300019-2-7

Damp heat cyclic

High temperature: $+55^\circ\text{C} \pm 2^\circ\text{C}$ Low temperature: $+25^\circ\text{C} \pm 2^\circ\text{C}$ Humidity: $93\% \pm 3\%$

Number of repetitions: 6

Test duration: 12h + 12h

DIN IEC 68-2-30 Db ETS 300019-2-5

Cold (constant exposure)

Temperature: $-40 \pm 2^\circ\text{C}$

Test duration: 16 h

DIN IEC 68-2-1

Approvals

The Siemens MC55 GSM/GPRS engine used has been approved to comply with the directives and standards listed below.

European directives

99/05/EC "Directive of the European Parliament and of the Council of 9 March 1999 on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity", in short referred to as R&TTE Directive 1999/5/EC.

The product is labeled with the CE conformity mark.

89/336/EC Directive on electromagnetic compatibility.

73/23/EC Directive on electrical equipment designed for use within certain voltage limits (Low Voltage Directive)

2002/95/EC Directive of the European Parliament and of the Council of 27 January 2003 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS).

Standards of North American Type Approval

CFR Title 47 "Code of Federal Regulations, Part 22 and Part 24 (Telecommunications, PCS)"; US Equipment Authorization FCC.

UL 60 950 "Product Safety Certification" (Safety requirements).

NAPRD.03 "Overview of PCS Type certification review board Mobile Equipment Type Certification and IMEI control".

PCS Type Certification Review board (PTCRB), Version 3.4.1.

RSS133 (Issue2) Canadian Standard.

Standards of European Type Approval

3GPP TS 51.010-1 "Digital cellular telecommunications system (Phase 2); Mobile Station (MS) conformance specification".

EN 301 511 "V9.0.2 Global System for Mobile communications (GSM); Harmonized standard for mobile stations in the GSM 900 and DCS 1800 bands covering essential requirements under article 3.2 of the R&TTE directive (1999/5/EC).

GCF-CC "Global Certification Forum - Certification Criteria" V3.18.0.

EN 301 489-1 "V1.4.1 Candidate Harmonized European Standard (Telecommunications series) Electro Magnetic Compatibility and Radio spectrum Matters (ERM); Electro Magnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common Technical Requirements".

EN 301 489-07 "V1.2.1 Electro Magnetic Compatibility and Radio spectrum Matters (ERM); Electro Magnetic Compatibility (EMC) standard for radio equipment and services; Part 7: Specific conditions for mobile and portable radio and ancillary equipment of digital cellular radio telecommunications systems (GSM and DCS)".

EN 60 950 Safety of information technology equipment (2000).

Protection:	IP20
Mounting:	35mm DIN-rail, EN50022.
Housing:	Anodized aluminium with plastic ends. According to DIN 43880.
Dimensions:	HxWxD: 80 (+connectors)x108x62mm.

Controlling the modem / AT commands

The UCM-93 are controlled via an AT command set. Please consult the AT Command document (PDF format) and the Getting Started document supplied with the modem. 0

NOTES

- 1) Audio signal will not be available in UCM-93.
- 2) **IMPORTANT NOTE:** The power supply **MUST** be capable of deliver the peak current required by the GSM modem, otherwise you might have problems during power up or the communication will fail occasionally.