

SIEMENS

EDGE up your
business

Wireless
Modules



Siemens presents its MC75, making it the first vendor to introduce a GSM/GPRS module with integrated EDGE technology. This module handles highly data-intensive multimedia applications – such as downloading and streaming of audio and video data, transmission of digital photos and instant messaging services – with exceptional speed and reliability. With Quad-Band capability, the MC75 can be used in all the existing GSM networks in America, Europe and Asia, guaranteeing seamless communication.

The MC75 is ideally suited for:

- Smart phones
- PDAs
- Notebooks
- Computing accessory cards
- And much more to enable wireless connectivity for your customers

Thanks to its integrated RIL/NDIS driver, the MC75 module is ideally suited for Smartphones and PDAs using software based on Microsoft® Windows® Mobile™ devices.

MC75

For contact and more information please visit
www.siemens.com/wm

MC75 with EDGE and Quad-Band – the high-speed module for worldwide wireless solutions

The module can be easily integrated into mobile communication solutions thanks to its extremely compact size of 34 x 45 x 3.5 mm, the single-sided PC-board and a minimal weight of less than 10 grams. The module is approved to North American and European standards such as FCC, PTCRB, R&TTE, UL, IC and GCF.



Wireless Modules Benefits and hard facts

Original size

General features:

- Quad-Band GSM
850/900/1800/1900 MHz
- EDGE (E-GPRS) Multislot class 10
- GPRS Multislot class 12
- GSM release 99
- Output power:
 - class 4 (2 W) for EGSM850
 - class 4 (2 W) for EGSM900
 - class 1 (1 W) for GSM1800
 - class 1 (1 W) for GSM1900
- AT commands Hayes GSM 07.05 and GSM 07.07
- AT commands for RIL compatibility (RIL/NDIS)
- TCP/IP stack access via AT commands
- SIM application toolkit (SAT Release 99)
- Supply voltage range 3.2 – 4.5 V
- Recommended supply voltage: 3.8 +/- 0.2 V
- Dimensions: 34 x 45 x 3.5 mm
- Weight: < 10 g
- Ambient temperature:
 - 30 °C ... +65 °C
- Auto switch-off at +75 °C

Drivers

- NDIS/RIL software for Microsoft® Windows® Mobile™ based devices

Specification for fax:

- Group 3, class 1

Specifications for data EDGE (E-GPRS):

- Multislot class 10
- Modulation and coding scheme MCS 1 – 9
- Mobile station class B

Specifications for data (GPRS):

- Multislot class 12
- Full PBCCH support
- Mobile station class B
- Coding scheme 1 – 4

Specifications for SMS:

- Via GSM or GPRS
- Point-to-point MO and MT
- Text and PDU mode
- SMS cell broadcast

Specifications for voice:

- Half rate (HR)
- Full rate (FR)
- Enhanced full rate (EFR)
- Adaptive multi rate (AMR)
- Basic handsfree operation:
 - Echo cancellation
 - Noise reduction

Approvals:

- R&TTE
- FCC
- UL
- IC
- GCF
- PTCRB
- Local approvals and network operator certifications

Interfaces:

- Molex 80-pin board-to-board connector
- Hirose U.FL 50 ohm antenna connector
- Antenna solder pad
- Audio: 2x analog, 1x digital
- 2 serial interfaces with the ITU-T V.24 protocol
- USB 2.0 full speed compatible
- SIM card interface
- I²C-Bus
- SD card interface

More about Wireless Modules at:
www.siemens.com/wm

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Subject to changes in technology,
design and availability

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Table 25: Current consumption during Tx burst for GSM 850MHz and GSM 900MHz

Mode	GSM call	GPRS Class 8	GPRS Class10		GPRS Class 12		EGPRS Class 8	EGPRS Class 10	
Timeslot configuration	1Tx / 1Rx	1Tx / 4Rx	2Tx / 3Rx		4Tx / 1Rx		1Tx / 4Rx	2Tx / 3Rx	
Maximum possible power (RF power nominal)	2W (33dBm)	2W (33dBm)	2W (33dBm)	1W (30dBm)	1W (30dBm)	0.5W (27dBm)	0.5W (27dBm)	0.5W (27dBm)	0.25W (24dBm)
Radio output power reduction with AT+SCFG, parameter <ropr>	<ropr> = 1 ... 3	<ropr> = 1 ... 3	<ropr> = 1	<ropr> = 2 or 3	<ropr> = 1	<ropr> = 2 or 3	<ropr> = 1 ... 3	<ropr> = 1	<ropr> = 2 or 3
Current characteristics									
Burst current @ 50Ω antenna (typ.)	2.0A	2.0A	2.0A	1.5A	1.5A	1.3A	1.6A peak 1.4A plateau	1.6A peak 1.4A plateau	1.3A peak 1.1A plateau
Burst current @ total mismatch	3.2A	3.2A	3.2A	2.3A	2.3A	1.9A	2.0A peak 1.6A plateau	2.0A peak 1.6A plateau	1.5A peak 1.3A plateau
Average current @ 50Ω antenna (typ.)	335mA	385mA	610mA	485mA	810mA	710mA	405mA	525mA	450mA
Average current @ total mismatch	485mA	535mA	910mA	685mA	1210mA	1010mA	430mA	575mA	500mA

AT parameters are given in brackets <...> and marked *italic*.

5.6 Power Supply Ratings

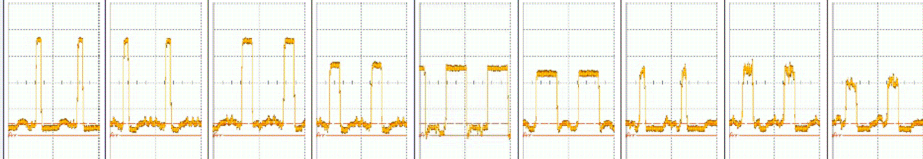
Table 24: Power supply ratings

Parameter	Description	Conditions	Min	Typ	Max	Unit
BATT+	Supply voltage	Directly measured at reference points BATT+ and GND, see chapter 3.2.2 Voltage must stay within the min/max values, including voltage drop, ripple, spikes.	3.2	3.8	4.3	V
	Voltage drop during transmit burst	Normal condition, power control level for $P_{out\ max}$			400	mV
	Voltage ripple	Normal condition, power control level for $P_{out\ max}$ @ $f < 200\text{kHz}$ @ $f > 200\text{kHz}$			50 2	mV mV
I_{VDDLP}	OFF State supply current	RTC Backup @ BATT+ = 0V		25		μA
I_{BATT+}	Average standby supply current ²⁾	POWER DOWN mode ¹⁾		50	100	μA
		SLEEP mode @ DRX = 9		3.7		mA
		SLEEP mode @ DRX = 5		4.6		mA
		SLEEP mode @ DRX = 2		7.0		mA
		IDLE mode @ DRX = 2		28		mA

¹⁾ Measured after module INIT (switch ON the module and following switch OFF); applied voltage on BATT+ (w/o INIT) show increased POWER DOWN supply current.

²⁾ Additional conditions:
SLEEP mode measurements started 3 minutes after switch ON the module
Averaging times: SLEEP mode - 3 minutes; IDLE mode - 1.5 minutes
Communication tester settings: no neighbor cells, no cell reselection etc.
USB interface disabled

Table 26: Current consumption during Tx burst for GSM 1800MHz and GSM 1900MHz

Mode	GSM call	GPRS Class 8	GPRS Class10		GPRS Class 12		EGPRS Class 8	EGPRS Class 10	
Timeslot configuration	1Tx / 1Rx	1Tx / 4Rx	2Tx / 3Rx		4Tx / 1Rx		1Tx / 4Rx	2Tx / 3Rx	
Maximum possible power (RF power nominal)	1W (30dBm)	1W (30dBm)	1W (30dBm)	0.5W (27dBm)	0.5W (27dBm)	0.25W (24dBm)	0.25W (24dBm)	0.25W (24dBm)	0.125W (21dBm)
Radio output power reduction with AT+SCFG, parameter <ropr>	<ropr> = 1 ... 3	<ropr> = 1 ... 3	<ropr> = 1	<ropr> = 2 or 3	<ropr> = 1	<ropr> = 2 or 3	<ropr> = 1 ... 3	<ropr> = 1	<ropr> = 2 or 3
Current characteristics									
Burst current @ 50Ω antenna (typ.)	1.6A	1.6A	1.6A	1.4A	1.4A	1.2A	1.4A peak 1.2A plateau	1.4A peak 1.2A plateau	1.25A peak 1.1A plateau
Burst current @ total mismatch	2.1A	2.1A	2.1A	1.75A	1.75A	1.5A	1.9A peak 1.6A plateau	1.9A peak 1.6A plateau	1.6A peak 1.3A plateau
Average current @ 50Ω antenna (typ.)	285mA	335mA	510mA	460mA	760mA	660mA	380mA	475mA	450mA
Average current @ total mismatch	350mA	400mA	635mA	550mA	940mA	810mA	430mA	575mA	500mA

AT parameters are given in brackets <...> and marked *italic*.

Necessary Bandwidth as defined in 47CFR 2.202(b).

Per response from the customer, the specific bandwidth for each channel used for GSM is 200kHz