

# sysmoBTS 1002 data sheet

**sysmocom**

systems for mobile communications GmbH



## Introducing sysmoBTS 1002

The sysmoBTS 1002 is a new low-power, small-formfactor IP-backhaul GSM BTS. It offers supreme cost efficiency and is suitable for a wide range of applications, including

- Rural cellular networks in lowest-ARPU regions
- GSM related research and development laboratories
- Production testing of GSM/EDGE terminal equipment
- Rapidly deployable GSM networks
- Private GSM networks (PBX style use)
- In-building coverage/capacity extension
- Remote area GSM deployments, utilizing any IP-based satellite back-haul service

Benefit from sysmocom's world-class experience in all areas of cellular networks from RAN to core network, permitting flexible integration of other network elements like BSC into the BTS itself.

As a unique feature, sysmoBTS 1002 permits you to run a completely autonomous small GSM network from within the BTS. No external BSC/MSC/HLR/VLR required!



## Beyond the BTS

sysmocom not only offers this innovative sysmoBTS 1002 product, but a variety of other products and services, such as

- **sysmoNITB 2G starterkit** complete ready to run 2G solution for lab testing and training
- **sysmoNITB 3.5G starterkit LE** sysmocom's first ready to run 3.5G solution
- **sysmoBSC** Base Station Controller, supporting Abis/IP as well as legacy E1 interfaces
- **sysmoNITB** autonomous self-contained GSM network
- **sysmoSIM** SIM cards, pre-programmed and with custom printing
- **sysmoBTS** range from 1TRX 0.2W to 2TRX 2x10W
- extensive portfolio of **support contracts** for all sysmocom Products
- **training services** for installation, network deployment, operation
- **vendor-agnostic integration** and inter-operation with other vendor RAN and Core Network products
- variety of sectorized and omni-directional **antennas** as well as **RF cabling** and **accessories**

## Custom-tailored GSM solutions

sysmocom is not just another RAN vendor with a fixed product portfolio. All our products are based on Open Source software components, permitting customization both by sysmocom as well as the customer.

Access to the source code is key in enabling our customers to create products and services outside the constraints of existing, standardized GSM protocols, interfaces or procedures. Any aspect of our products can be modified according to customer needs.

## Contact Information

We appreciate inquiries from end-users, operators as well as retailers.

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## Mechanical / Electrical specification

<b>Dimensions of enclosure (W x H x D)</b>	165 x 140 x 45 mm (indoor / table-top enclosure)
<b>Dimensions of PCB assembly</b>	160 x 120 x 30 mm
<b>Weight</b>	770 g (with metal enclosure), < 200 g (PCB assembly)
<b>RF Input (SMA)</b>	<ul style="list-style-type: none"> <li>GSM 850/900/1800/1900 quad-band uplink band</li> <li>Sensitivity: -109 dBm (exceeding 3GPP TS 05.05 pico BTS requirements)</li> </ul>
<b>RF Output (SMA)</b>	<ul style="list-style-type: none"> <li>GSM 850/900/1800/1900 downlink band</li> <li>Max. output power: (850/900): 22 dBm GMSK, 18 dBm 8PSK (1800/1900): 25 dBm GMSK, 20 dBm 8PSK</li> </ul>
<b>CPU / SoC</b>	TI Davinci (ARM926 @ 405 MHz + DSP @ 804 MHz)
<b>Input Voltage</b>	5 V (DC), power consumption: <= 10W (typ.), 13W (max.)
<b>Cooling</b>	Passive. Active cooling optionally available depending on customer-specific enclosure or environmental requirements
<b>Internal Memory</b>	128 Mbyte SLC NAND Flash, 128 Mbyte DDR2 SDRAM, microSD socket
<b>Communications Interface</b>	RJ45 Ethernet (100-Base-Tx)

## Software / Logical specification

<b>Number of Transceivers</b>	1 TRX / 8 timeslots
<b>Supported timeslot configurations</b>	CCCH, CCCH+SDCCH/4, SDCCH/8, TCH/F, TCH/H, PDTCH
<b>Back-haul (Signaling)</b>	A-bis according to TS 08.58 and TS 12.21, encapsulated over TCP/IP
<b>Back-haul (voice)</b>	RTP/UDP/IP with FR/EFR/AMR payload according to IETF and ETSI specs
<b>Ciphering</b>	A5/1, A5/2 and A5/3
<b>GPRS/EDGE</b>	GPRS-only PCU with Gb-over-IP interface
<b>Max. concurrent calls</b>	14 (TCH/H on 7 timeslots)
<b>Max. simultaneous SMS</b>	60 (7*SDCCH/8 + 1*SDCCH/4)
<b>Operating System</b>	Embedded Linux (Poky based)

## Available Options / Configurations

### Hardware Options

- Clocking: OCXO (default) / GPS disciplined (option)
- External Antenna Duplexer
- Outdoor enclosure (see sysmoBTS 1002OD)
- PoE power splitter (802.3af compatible)
- G.SHDSL modem for 2-wire copper back-haul

### Software Options

- BTS-only (A-bis/IP interface)
- integrated BSC (A/IP interface)
- NITB: Fully autonomous GSM PBX
- GPRS PCU with Gb interface
- SDK for customer-specific applications on BTS

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