# sysmoBTS 1002 starter kit

sysmocom
systems for mobile communications GmbH


## Introducing sysmoBTS

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!


## Starter Kit for product evaluation

The **sysmoBTS 1002** starter kit enables you to get quickly started and run a **completely autonomous GSM network** without the need for any external components.

All you need to do in order to make calls and send SMS between your phones n this private GSM network is to

- unpack the starter kit
- connect the power supply and the antennas,
- insert the SIM cards into the telephones
- power on the phones

The starter kit includes

- One **sysmoBTS 1002**, indoor enclosure, 23 dBm transmit power (configurable down to 0 dBm)
- Three compatible SMA rubber antennas
- One international power supply (110 to 240 V AC, 50/60Hz, EU/US/UK plug)
- **10** pre-provisioned SIM cards
- Printed copy of the **sysmoBTS** Getting Started Guide
- Fully installed + configured software image with **OsmoBTS** and **OpenBSC / OsmoNITB** Software
- Customer-specific factory configuration of transmit band, ARFCN, transmit power, MCC, MNC and other parameters
- 4 hours of remote support by sysmocom staff (e-mail based, remote login/configure)
- USB-cable for access to serial console

## 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.

# sysmoBTS starter kit data sheet

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## Mechanical / Electrical specification

| | |
|---|---|
| **Dimensions of enclosure (W x H x D)** | 165 x 140 x 45 mm (indoor / table-top enclosure) |
| **Dimensions of PCB assembly** | 160 x 120 x 40 mm |
| **Weight** | 770 g (with metal enclosure), < 200 g (PCB assembly) |
| **RF Input (SMA)** | • GSM 850/900/1800/1900 quad-band uplink band<br>• Sensitivity: –100 dBm (exceeding 3GPP TS 05.05 pico BTS requirements) |
| **RF Output (SMA)** | • GSM 850/900/1800/1900 downlink band<br>• Max. output power:<br>(850/900): 22 dBm GMSK, 18 dBm 8PSK<br>(1800/1900): 25 dBm GMSK, 20 dBm 8PSK |
| **CPU / SoC** | TI Davinci (ARM926 @ 405 MHz + DSP @ 804 MHz) |
| **Input Voltage** | 5 V (DC), power consumption: <= 10W (typ.), 13W (max.) |
| **Cooling** | Passive, no fan or other moving parts |
| **Internal Memory** | 128 Mbyte SLC NAND Flash, 128 Mbyte DDR2 SDRAM |
| **Communications Interface** | RJ45 Ethernet (100-Base-Tx) |

## Software / Logical specification

| | |
|---|---|
| **Number of Transceivers** | 1 TRX / 8 timeslots |
| **Supported timeslot configurations** | CCCH, CCCH+SDCCH/4, SDCCH/8, TCH/F, TCH/H, PDTCH |
| **Ciphering** | A5/0, A5/1, A5/2 and A5/3 |
| **GPRS** | GPRS-only PCU with Gb-over-IP interface |
| **Max. concurrent calls** | 14 (TCH/H on 7 timeslots) |
| **Max. simultaneous SMS** | 60 (7*SDCCH/8 + 1*SDCCH/4) |
| **Operating System** | Embedded Linux (Poky based) |

## Available Options / Configurations

### Hardware Options

- Internal uSD card for extended memory
- External Antenna Duplexer
- Wall-mount enclosure
- 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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