



Introducing sysmoBTS 2050

The sysmoBTS 2050 is a new, low-power, small-formfactor IP-backhaul GSM BTS for medium coverage outdoor applications. It offers supreme cost efficiency and is suitable for a wide range of applications, including

- Rural cellular networks in lowest-ARPU regions
- Rapidly deployable GSM networks
- Private GSM networks (PBX style use)
- Remote area GSM deployments, utilizing any IP-based satellite back-haul service
- Offshore wind farms, oil rigs
- Onboard coverage on maritime vessels (ferries, cruise ships, commercial vessels)

The IP67 rated sysmoBTS 2050 is intended to be mounted directly to the antenna pole in close proximity of the antenna. This keeps RF cables short and avoids the losses associated with long coaxial cables.

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.

In addition to operating as a classic BTS in an existing carrier network all sysmoBTS products permit you to run a completely autonomous small GSM network from within the BTS: The NITB (Network In The Box). No external BSC/MSC/HLR/VLR required!

Beyond the BTS

sysmocom not only offers this innovative sysmoBTS 2050 product, but a variety of other products and services, such as

- **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 1002** – single-TRX 200mW indoor BTS
- 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.

sysmocom – systems for mobile communications GmbH
Alt-Moabit 93
10559 Berlin
GERMANY

Phone: +49-30-60987128-0
Fax: +49-30-60987128-9
e-mail: info@sysmocom.de
web: <http://sysmocom.de/>

Mechanical / Electrical specification

Dimensions of enclosure (W x H x D)	285 x 230 x 95 mm (measurements excluding pole/wall mount)
Weight	< 5 kg
Protection Rating	IP67 (dust tight, waterproof) outdoor enclosure for wall or pole mount
Temperature Range	Operating temperature: -40 °C to 55 °C Storage temperature: -40 °C to 70 °C
RF Input (N female)	<ul style="list-style-type: none"> • single-band GSM 850/900/1800/1900 uplink band • Sensitivity: -109 dBm (exceeding 3GPP TS 05.05 pico BTS requirements)
RF Output (N female)	<ul style="list-style-type: none"> • single-band GSM 850/900/1800/1900 downlink band • Max. total output power: 40 dBm (2-TRX: 2x 37 dBm, 1-TRX: 1x 40dBm) adjustable in 1dB steps
GPS Input	SMA female connector for GPS-disciplined oscillator
CPU / SoC	Two TI Davinci (ARM926 @ 405 MHz + DSP @ 804 MHz)
Input Voltage	24 V (DC), power consumption: 55W (typ.), 75W (max.)
Cooling	Passive
Internal Memory	128 Mbyte SLC NAND Flash, 128 Mbyte DDR2 SDRAM, microSD
Communications Interface	Two switched RJ45 Ethernet (100-Base-Tx) ports for daisy-chaining

Software / Logical specification

Number of Transceivers	2 TRX / 16 timeslots
Supported timeslot configurations	CCCH, CCCH+SDCCH/4, SDCCH/8, TCH/F, TCH/H, PDTCH
Back-haul (Signaling)	A-bis according to TS 08.58 and TS 12.21, encapsulated over TCP/IP
Back-haul (voice)	RTP/UDP/IP with FR/EFR/AMR payload according to IETF and ETSI specs
Ciphering	A5/1, A5/2 and A5/3
GPRS/EDGE	GPRS-only PCU with Gb-over-IP interface
Max. concurrent calls	30 (TCH/H on 15 timeslots)
Max. simultaneous SMS	124 (15*SDCCH/8 + 1*SDCCH/4)
Operating System	Embedded Linux (Poky based)

Available Options / Configurations

Hardware Options / Accessories

- Internal uSD Card for extended memory
- External IP65 Antenna Duplexer
- GPS Antenna
- External IP65 Power Supply
- 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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