sysmoBTS 1020 data sheet

sysmocom
systems for mobile communications GmbH

Introducing sysmoBTS 1020

The sysmoBTS 1020 is a new, low-power, small-formfactor IP-backhaul GSM BTS for outdoor applications. It offers **2W RF power** at 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 IP65 rated sysmoBTS 1020 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. Instead of running coaxial cables up the pole, you now simply only need CAT5 cables for Ethernet and PoE (Power over Ethernet).

Beyond this product

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

- **sysmoNITB starterkit** complete ready to run 2G, 3G5 and/or 4G solution for lab testing

- **Cellular Network Infrastructure** a comprehensive suite of elements for 3GPP cellular networks

- **sysmoOCTSIM / sysmoQMOD** solution for remote SIM operation for cellular modems

- **SIMtrace2** debug and trace SIM card communication

- **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 a s 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

Dimensions of enclosure (W x H x D)	300 x 220 x 55 mm (measurements excluding pole/wall mount) Casted aluminium enclosure with UV resistant paint
Weight	2 kg
Mounting	included wall-mount and pole-mount clamp
Protection Rating	IP65 (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)	• dual-band GSM 850/900 or 1800/1900 uplink band • Sensitivity: –109 dBm (exceeding 3GPP TS 05.05 pico BTS requirements)
RF Output (N female)	• dual-band GSM 850/900 or 1800/1900 downlink band • Max. total output power: 33 dBm, adjustable in 2dB steps
GPS Input	N female connector towards GPS antenna (for GPS-disciplined oscillator)
CPU / SoC	TI Davinci (ARM926 @ 405 MHz + DSP @ 804 MHz)
Input Voltage	36-60 V (DC). direct or via 803.3at PoE; power consumption: 20W (typ.)
Cooling	Passive
Internal Memory	128 Mbyte SLC NAND Flash, 128 Mbyte DDR2 SDRAM, optional microSD
Communications Interface	RJ45 Ethernet (100-Base-Tx) port with 802.3at PoE
Approvals	Currently no CE approval plans, sale only outside the EU

Software / Logical specification

Number of Transceivers	1 TRX / 8 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	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 / Accessories

- Internal uSD Card for extended memory
- External IP65 Antenna Duplexer
- GPS Antenna
- External IP65 Power Supply
- PoE injector
- G.SHDSL modem for 2-wire copper back-haul

Software Options

- BTS-only (A-bis/IP interface)
- GPRS PCU with Gb interface
- SDK for customer-specific applications on BTS