

Features

- High downlink power of 46dBm per carrier to extend cell coverage.
- Channel-selective module permits two downlink carriers on a feeder cable.
- Low noise amplifier reduces uplink system noise figure and helps to reduce call drop and improve voice quality.
- Reduces handset output power to improve uplink C/I.
- Permits local or remote monitoring via PC or wireless modem.
- Alarms can be transmitted to OMC via data link or SMS.
- External alarm to BTS by voltage-free relay contacts.
- Automatic RF by-pass feature permits BTS operation when equipment or power supply fails.
- Internal Li-ion backup battery ensures alarm messages are transmitted when power supply fails.
- Designed for all outdoor application – waterproof, damp-proof and omni-sealed (IP65).

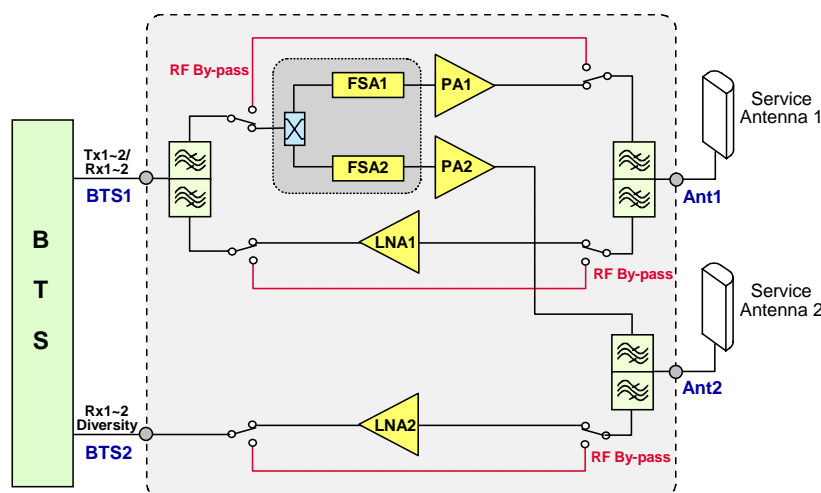


Product Description

The TB-9122 GSM900 channel-selective tower mounted booster provides both uplink and downlink amplification for two carriers. The unit is installed near the antenna at the tower top to boost the transmitted power to extend the cell coverage. The uplink low-noise amplifier (LNA) serves to improve the sensitivity of the BTS to cope with the extended cell coverage in the downlink.

Depending on coverage requirement, the TB-9122 can be equipped with power amplifier (PA) to have different output power. The unit is designed to work with various power supply options, including 220VAC, -48VDC and +24VDC. Within the TB-9122 are duplexers (DPX), uplink LNA, downlink PA, Frequency Selecting and Amplifying (FSA) module, RF by-pass switch, Main Control Unit (MCU), Power Supply Unit (PSU), surge protector, wireless modem, distribution board and Li-ion backup battery. Parameter settings can be done locally via a PC with installed OMT, or remotely via wireless modem using OMT or OMC software. Alarms are displayed on the OMT screen and can be detected by BTS as external alarm. Through the wireless modem, the alarm data can be transmitted to the OMC automatically, or be sent as SMS to a predefined cellular device.

Functional Block Diagram



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Technical Specifications

Electrical			
Frequency Range, Uplink	MHz	890 – 915,885 – 915,880 – 915,880 – 905	
Frequency Range, Downlink	MHz	935 – 960,935 – 960,925 – 960,925 – 950	
Number of Carriers		2	
Output Power per Carrier	dBm	46 ± 1	
Input Power Range per Carrier, Downlink	dBm	21 – 40	
Maximum System Gain, Uplink	dB	12 ± 1	
Maximum System Gain, Downlink	dB	25 ± 1	
Gain Adjustment Range (1dB Step), Uplink	dB	0 – 12 ± 1	
Gain Adjustment Range (1dB Step), Downlink	dB	0 – 20 ± 1	
Channel Selectivity, Downlink	at ±100KHz	dBc	≥ -3
	at ±400KHz	dBc	≤ -30
	at ±600KHz	dBc	≤ -60
Spurious	9KHz to 1GHz	dBm	≤ -36 / 100KHz
	1GHz to 12.75GHz	dBm	≤ -30 / 1MHz
Noise Figure, Uplink	dB	≤ 3.0	
Absolute Maximum RF Input Power, Uplink	dBm	+13	
Input 3rd Order Intercept Point (IIP3), Uplink	dBm	≥ 10	
Pass Band Ripple, p-p	dB	≤ 3	
Insertion Loss, By-pass Mode	dB	≤ 2.8	
System Group Delay	μsec	≤ 8.0	
Input VSWR		≤ 1.4	
Impedance	Ω	50	
Power, Mechanical & Environmental			
Dimensions, H x W x D	mm	600x450x295	
Weight (approx.)	kg	51	
Power Supply Options	VAC	176 – 264 / 47 – 63Hz	
	VDC	+24 or -48	
AC Power Consumption (approx.)	W	430	
Power Up Waiting Time (approx.)	sec	60	
MCU Battery Backup Time (approx.)	hr	3	
Enclosure Cooling		Convection	
RF Connectors		N-F or 7/16 Din-F	
Operating Temperature	°C	-25 to +55	
Operating Humidity	%	≤ 98	
EMC		ETSI EN 301 489-1	
Environmental Class		IP65	
MTBF	hr	> 50,000	

Note: Typical specification at room temperature

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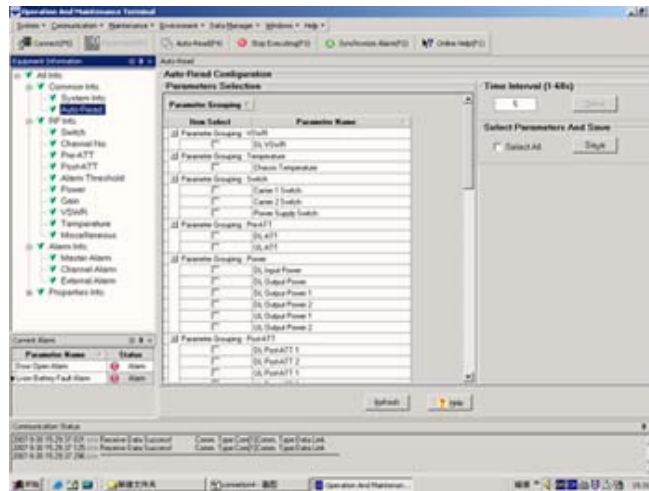
Operation and Maintenance

Using a direct serial connection to a PC, installation and commissioning of the TB-9122 is accomplished by the OMT. Using the integrated wireless modem (data or SMS mode), equipment parameters can be monitored and controlled remotely.

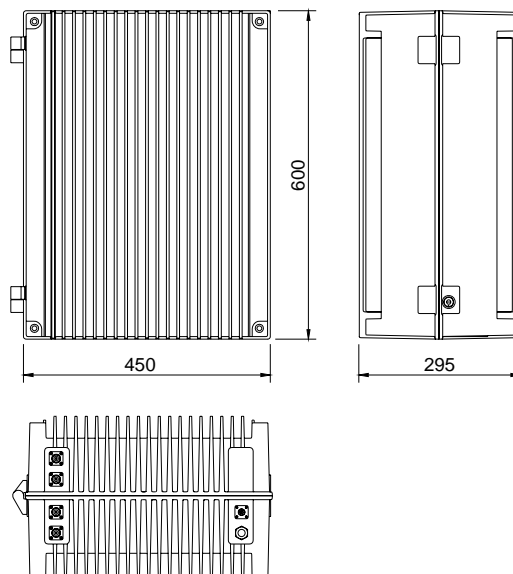
Controlled equipment parameters include: Channel No, UL/DL ATT, Soft ON/OFF, Over-Temp Threshold, DL Output Power Threshold, DL Input Power Threshold and Alarm Report Enable.

Monitored equipment alarms and parameters include: Alarms (LNA, DL PA, Power Down, PSU Fault, Chassis Lock, DL Input Power Low, DL Output Power Low, Over Temp), UL/DL Gain, DL Input /Output Power.

The TB-9122 has been developed to take advantage of advanced network operation, where the OMC (optional) provides an effective solution for central monitoring of a group of Comba products.



Outline Drawing



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