

PES850 GSM Repeater for Cellular Mobile Radio Applications

5 Watt GSM, CMR Segment Selective, Over-the-Air, On-Frequency Repeater

Benefits

- ❖ Improved Cellular Mobile Radio network coverage
 - In-Building
 - Suburban
 - Highway
- ❖ Solar Power Optimized – SmartPower™
- ❖ Lower cost than base stations-Save up to 75%
- ❖ Up to 90% less real estate required
- ❖ Faster time-to-market
- ❖ Flexible capacity

Features

- ❖ Compatible with RepeaterNet™— Operations, Administration and Maintenance (OA&M) Software
- ❖ High-output power, multi-carrier performance
 - 5-Watt composite RF output power rating
- ❖ Choice of selective bandwidth, 1.2, 4.8 or 10 MHz
- ❖ Frequency Hopping compatible within selective bandwidth.
- ❖ Low noise figure
 - Less than 6 dB reverse link NF
- ❖ Forward & Reverse power control (ALC)
- ❖ RepeaterNetCraft™ - User-friendly supervisory control and alarm network software for OA&M
 - Craft Port and Dial-up access
- ❖ One-year warranty
- ❖ Weatherproof and rustproof NEMA 3R compliant all-aluminum cabinet
- ❖ Wall mount & pole mount cabinet configurations
- ❖ Simple maintenance concept: Field replaceable unit gets you back on the air fast
- ❖ Easy installation – less than 60 minutes

Applications

Improve GSM signal levels and effective CMR network coverage in shadowed areas. Extend network coverage beyond BTS range. Typical applications include rural highways, hospitals, rooftops, tunnels, airports, and convention centers. Useful to improve GSM only signals in a mixed mode operation by band segment selection.



PES850 GSM Repeater

Description

The PES850 is housed in a NEMA-3R rated, all-weather, white cabinet. The repeater can be mounted on walls, poles or tower structures.

A removable back-mounting plate simplifies installation and maintenance. The lightweight-mounting plate is securely installed first, and then the repeater unit is slipped into mating slots.

RF, mains power, alarm wiring and telephone line connections are all available at the bottom of the repeater for improved weather protection.

Equipment is setup using supplied software that communicates with the repeater controller. A Craft laptop computer or Local Maintenance Terminal connects to the serial Craft port in the lower section.

PESi Support

Peninsula Engineering Solutions is ready to support your project needs including design of repeater applications and alternate power systems; furnish remote site power equipment, antenna systems and more.

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PES850 GSM Repeater – Technical Summary

MODELS and FREQUENCY RANGE (MHz)				
MODEL	BAND	BW	REVERSE	FORWARD
PES850G-A1.2	A	1.2	824.0~835.0 & 845.0~846.5	869.0~880.0 & 890.0~891.5
PES850G-B1.2	B	1.2	835.0~845.0 & 846.5~849.0	880.0~890.0 & 891.5~894.0
PES850G-A4.8	A	4.8	824.0~835.0	869.0~880.0
PES850G-B4.8	B	4.8	835.0~845.0	880.0~890.0
PES850G-A10	A	10.2	824.0~835.0	869.0~880.0
PES850G-B10	B	10.2	835.0~845.0	880.0~890.0

RF OUTPUT POWER				
CARRIERS:	1	2	4	8
Power per Carrier	37 dBm, 5 W	33 dBm, 2 W	30 dBm, 1 W	27 dBm, 0.5 W

EQUIPMENT CHARACTERISTICS				
FORWARD GAIN	REVERSE GAIN	REVERSE NOISE FIGURE	NO-DAMAGE INPUT SIGNAL	DELAY
65~95 dB in 2-dB steps	65~95 dB in 2-dB steps	< 6 dB	≤ +10 dBm	< 6μsec, 1.2 MHz BW < 3μsec, 4.8 MHz BW < 3μsec, 10.2 MHz BW
ANTENNA PORTS	VSWR/RL	TEMPERATURE	SIZE, HWD	WEIGHT
Type N(f)	< 1.5:1 / > 14 dB RL	-40° to 55° C	16 x 14 x 11.5 inch 406 x 356 x 292 mm	50 lbs 23 kg

MAINS POWER	
POWER CONSUMPTION	INPUT VOLTAGE OPTIONS
200 Watts Full Power	110 ~ 230 VAC 47 ~ 63 Hz
150 Watts Idle	+24 VDC

ALTERNATIVE POWER OPTIONS	
TYPE	DESCRIPTION
BUPS	6 To 11 Hours Of Backup Power Without AC mains supply
Solar Electric Battery	PV (Photovoltaic) with controlled charging of station battery
Hybrid Solar and TEG	PV with Thermal Electric Generator powered from propane fuel
Hybrid Solar and MG	PV with Motor Generator powered from propane or diesel fuel

SUPERVISION					
ITEM	OUTPUT	ITEM	OUTPUT	ITEM	OUTPUT
Critical Alarm	Form C Relay	Remote Control Relays (2)	Form C Relay	External Battery Monitor	Analog DC Volts
Major Alarm	Form C Relay	Digital Outputs (2)	Opto-Isolated TTL	BUPS Monitor	6 Alarms
Minor Alarm	Form C Relay	Digital Inputs (2)	Opto-Isolated TTL		

LED INDICATORS	
System Ready	Major Alarm
Critical Alarm	Minor Alarm

PES850G Data Sheet

Rev 2.1

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