

PCS GSM Multi-Channel Cell Extender for Micro-Cell Base Stations



Communication Component Inc.'s Cell Extender products are designed to extend the range and coverage area of Micro Base Stations in all GSM PCS applications. The Cell Extender boosts the output power of the Micro Base Stations to match the levels of conventional Base Stations allowing for cost efficient implementation of high capacity radio networks. It also may -noise amplification of the receive signal to improve system sensitivity and to maintain a balanced link of the transmit and receive signals. The Cell Extender is easy to install, requires no maintenance, and is fully compatible with a variety of Base Station equipment including the Ericsson 2308 series and Nortel E-cell series Micro-BTS. The Cell Extender offers the maximum installation flexibility by allowing the Micro Base Stations to be physically distanced from the antenna and mounting structure. This overcomes the key installation drawback of the Micro Base Stations which requires both a T1 connection and an AC connection on the mounting structure. Three installation options are available.

Configuration 1 - The CE-1819-10 can be mounted on the same mounting structure directly above or below the Micro Base Station. This option is ideal when an existing Micro Base Station site is being upgraded with a Cell Extender or when both AC and T1 connections are available on the mounting structure.

Configuration 2 - The Micro Base Station is installed at ground level or indoors and the Cell Extender is mounted on the mounting structure, in close proximity to the antenna. This configuration is ideal for environments where AC lines and T1-connections are not easily available on the mounting structure or when it is desired to keep the Micro Base Station indoors. For this configuration, the Cell Extender should be ordered with the Remote Power Option which includes a Bias-T and Remote Power Supply module to provide DC power to the Cell Extender over the coax cable.

Configuration 3 - Both the Micro Base Station and the Cell Extender are installed at the ground level or indoors. This is intended for applications where it is impractical to install any equipment other than the antenna on the mounting structure.

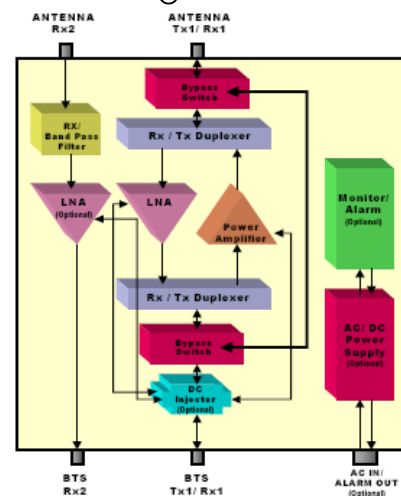
Additional Information

The Cell Extender is specifically designed for compatibility with the a variety Micro Base Station Equipment and is guaranteed to maintain the integrity of the GSM signal upon amplification. This is achieved by utilizing state-of-the-art LDMOS technology for power amplification, monolithic Gallium-Arsenide technology low noise receive amplification, with particular emphasis on low system group delay to minimize Bit-Error-Rate (BER) of digital transmissions. The Cell Extender block consists of a single compact unit with two RF connectors and a single AC line for power. It is housed in a moisture proof NEMA 4X aluminum die-cast enclosure with integrated heat sinks and is suitable for either outdoor or indoor installations. The Cell Extender is designed to boost two pre-combined GSM or EDGE channels that are provided from the Micro Base Station. It contains redundant low noise amplifiers to boost the receive signals, redundant LDMOS-based high power amplifiers to boost the transmit signal, dual duplexers, an integrated power supply and alarm/control circuitry to monitor the operation of the unit. The Cell Extender is powered by a conventional 110/220 VAC source or can be optionally DCpowered via the Coax cable using the Remote Power Option.

Options

- 01: Additional Rx Only Channel
- 02: Monitoring Interface
- 03: Remote Power Option (with Internal Bias-T)
- AD: A & D Power Operation
- B: B Band Operation
- C: C Band Operation
- EF: E & F Band Operation

Block Diagram



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Cell Extender Electrical & Mechanical Specification

	Uplink	Downlink
A & D Blocks	1850-1870 MHz	1930-1950 MHz
B Block	1870-1885 MHz	1950-1965 MHz
C Block	1895-1910 MHz	1975-1990 MHz
E & F Blocks	1885-1895 MHz	1965-1975 MHz
System Gain	10 dB	10 dB
System Noise Figure:	2.5 dB Max.	
System Group Delay:	180 nanoseconds Max	
Pass-band Ripple:	0.5 dB Max.	
Output Third Order Intercept Point:	+31 dBm Min.	+59 dBm Min
1 dB Compression Point:	+22 dBm Min.	+51 dBm Min
Maximum Usable GSM/EDGE Power:	N/A	20 Watts Composite
Input /Output VSWR:	1.5:1 Max.	1.5:1 Max.
Up-Link-Down-Link Isolation	80 dB	
Number of Inputs/Outputs:	1/1	
Power Supply Voltage:	110/220 VAC	
Current Consumption:	1.5/0.75 AMPS	
Dimensions		
Enclosure	NEMA 4x Weather Proof	
Connectors	7/16 DIN Type Female	
Weight	20 Lbs. Max.	
Mounting	Pole and/or Wall Mountable	

Ordering Information: Model CE-1819-10

FCC Information

A minimum separation distance of 2 meters between the transmit antenna and nearby persons must be maintained. If this separation distance is not maintained, this device may not be in compliance with FCC RF Exposure rules.

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