**CELL EXTENDER**

# Description of Operation

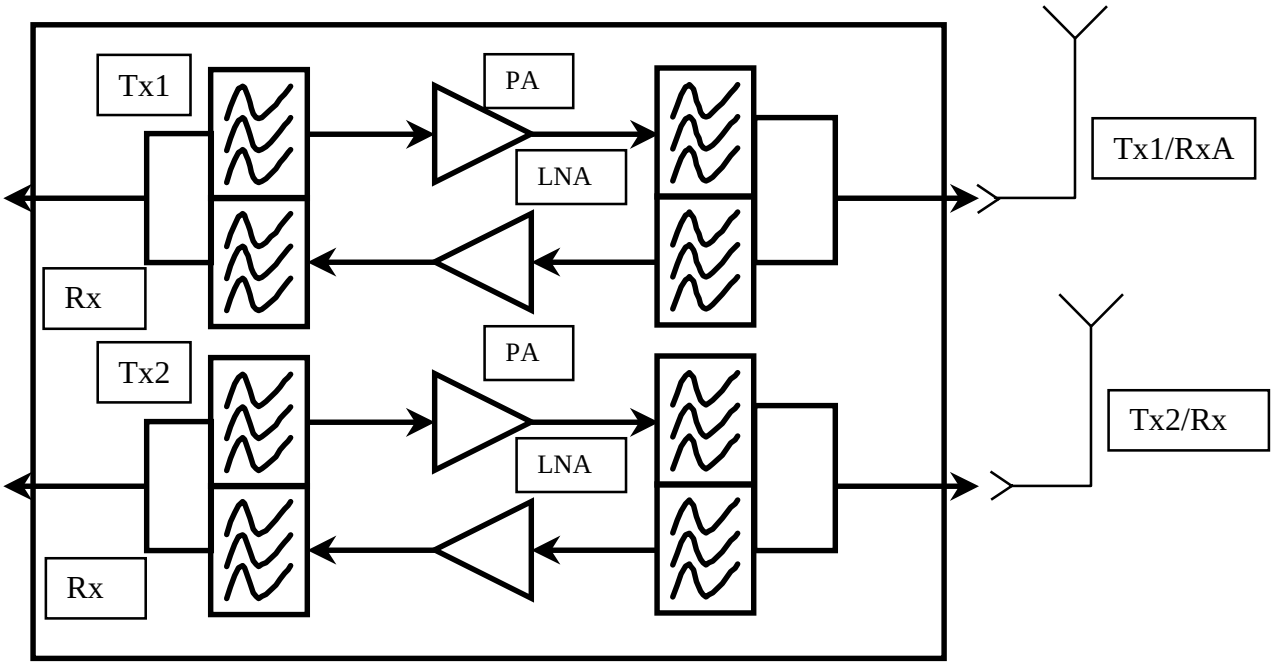


Fig. 1. Block Diagram

**General Information:**

Communication Component Inc.'s Cell Extender products are designed to extend the range and coverage area of Ericsson RBS 2301 Micro Base Stations in all GSM PCS applications. The Cell Extender boosts the output power and the sensitivity of the RBS 2301 to match the levels of conventional Base Stations such as RBS-2000 allowing for cost efficient implementation of high capacity radio networks. It also provides low noise

amplification of the receive signals to improve system sensitivity and to maintain a balanced link of the transmit and receive signals.

**Description of Operation:**

Mechanical. The Cell Extender block consists of a single compact unit with four 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 it is suitable for either indoor or outdoor installations. 99

Electrical. Electrical block-diagram is shown in Fig.1. Unit consists from two identical channels. In each channel the signal coming to Base Station port is split in to receive (Rx) and transmit (Tx) frequency bands. Tx and Rx signals are amplified in opposite directions and recombined at the antenna port. Power Amplifier has redundant gain blocks based on LDMOS technology for improved linearity. Low Noise Amplifiers for the return link have also redundant design utilizing monolithic circuits.

Up-link and Down-link signals are isolated by means of high selectivity duplexers providing 90 dB isolation each.

The Cell Extender is powered by a conventional 110/220 VAC source or can be optionally DC-powered via the coax cable using the Remote Power Option.

Electrical Specification for each Channel

System Gain……..10 dB
Gain Flatness……+/-0.5 dB
Output Power…….20 W
VSWR……1.5:1
Up/Down Link Isolation……90 dB
Noise Figure……..2.5 dB
Operating Voltage…….115/220 VAC of 28 VDC
Current Consumption…….1.3 A @ 120 VAC