

# C-LNA2 Series CDMA Low Noise Amplifiers

## Inline Preamplifier Options

**Because many facility locations are not antenna "friendly", all EndRun Technologies products are configurable with antenna signal enhancement options. The C-LNA2 Series inline preamplifiers provide a cost-effective way to make a significant improvement in the reliability of your signal reception.** The C-LNA2 products are very high-performance inline preamplifiers developed specifically for difficult environments. They offer high gain, linearity and frequency selectivity along with a very low-noise figure. Powered by as little as 3.3V on the center conductor of the coaxial cable, they are installed between the CDMA antenna and the receiver. The miniature cylindrical package is rugged and its shape makes for a neat installation.



### Weak Signal Strength Environments

In a large class of applications, rooftop GPS antenna installation is either impossible (due to building restrictions) or impractical (multi-story building) and CDMA is the only viable means of meeting system sync requirements. An example of such an environment is the telecom datacenter, or co-location facility.

Since these are secured, controlled access facilities, the equipment requiring synchronization is isolated from the outside world through multiple layers of walls and closed, solid doors. There are no windows, and the bottom floor is often below ground. Inside the room where the equipment resides, wire mesh security cages surrounding each tenant's equipment act as electromagnetic shields/reflectors which

scatter the cell phone signals that have managed to enter, and set up Byzantine interference patterns called standing waves.

In such environments, reliable reception of CDMA signals might only be achieved by maximizing the sensitivity of the receiver with a very low noise, inline preamplifier, located as near to the antenna as possible, and by surveying the room for a favorable antenna placement. Often it is necessary to remotely locate the antenna using an extension cable. The signal loss in the additional cable would be a problem if the signal were already quite weak, so adding a preamplifier at the antenna end of the extension cable is the solution. In situations requiring longer than normal antenna cables, another preamplifier located at the receiver end of the antenna cable may also be beneficial.

### High Interference Environments

Interference rejection is crucial in CDMA receiver applications. CDMA receivers must be designed to handle very high dynamic range interference due to the fact that mobile phones transmit in a band that is only separated from the receive band by about 20 MHz. Were such signals from nearby phones merely amplified by the preamplifier and passed on, they would saturate the downstream CDMA receiver.

The C-LNA2 Series preamplifiers incorporate high linearity semiconductors along with surface acoustic wave (SAW) bandpass filters to achieve very high out-of-band interference rejection, even in the presence of high levels of interference.

### Reliability

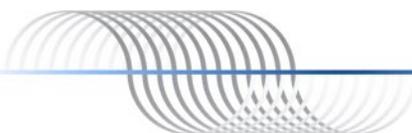
The C-LNA2 series preamplifiers contain Transient Voltage Suppression (TVS) devices to protect against damage due to static discharge or induced voltage surges from nearby lightning strikes.

### FEATURES

- Easy to install.
- Compact, rugged package.
- Powered via antenna coax from receiver.
- Internal transient voltage spike protection.
- One-year warranty.

### KEY BENEFITS

- Improves signal reception.
- Allows for extended cable lengths up to 200'.



# C-LNA2 Series Low Noise Amplifier Specifications

	<b>C-LNA2-J (J-CDMA Band)</b>	<b>C-LNA2-A (AMPS Band)</b>	<b>C-LNA2-P (PCS Band)</b>
<b>Model Gain</b>	+27 dB +/-1 dB	+29 dB +/-1 dB	+21 dB +/-1 dB
<b>-3 dB Bandwidth, Typical</b>	845 to 880 MHz	865 to 900 MHz	1920 to 2000 MHz
<b>Stopband Attenuation</b>	> 25 dB, f < 835 MHz, > 25 dB, f > 900 Mhz	> 25 dB, f < 850 MHz, > 25 dB, f > 910 MHz	> 25 dB, f < 1890 MHz, > 25 dB, f > 2030 Mhz
<b>Noise Figure</b>	< +2 dB	< +2 dB	< +2 dB
<b>Input Return Loss, Z<sub>0</sub> = 50</b>	> 10 dB	> 10 dB	> 12 dB
<b>Output Return Loss, Z<sub>0</sub> = 50</b>	> 10 dB	> 9 dB	> 9 dB
<b>Input 1 dB Compression Level</b>	-25 dBm	-25 dBm	-21 dBm
<b>Maximum Input Level</b>	+10 dBm	+10 dBm	+10 dBm
<b>Supply Voltage Range</b>	+3.3 to +12 VDC Maximum	+3.3 to +12 VDC Maximum	+3.3 to +12 VDC Nominal +13 Max
<b>Supply Current, Typical</b>	9 mA	9 mA	9 mA
<b>Connectors</b>	TNC Jack	TNC Jack	TNC Jack
<b>Size</b>	.730" Dia. x 4.5" L	.730" Dia. x 4.5" L	.730" Dia. x 4.5" L
<b>Housing</b>	Nickelplated brass	Nickel-plated brass	Nickel-plated brass
<b>Operating Temp. Range °C</b>	-40 to +85	-40 to +85	-40 to +85

This table summarizes the performance of the C-LNA2 Series low noise amplifiers. For detailed application information or special requirements, please call our toll-free number: **1-877-749-3878**, or email: [sales@endruntechnologies.com](mailto:sales@endruntechnologies.com)

