



## >> IN-BUILDING AMPLIFIER

### Extends Coverage

The Model 510 & 610 series of in-building amplifiers provide amplification of both uplink and downlink wireless signals in facilities located within reasonable proximity of cell sites and where wireless coverage is otherwise non-existent.

### Typical Applications

Among facilities that can benefit from an in-building amplifier installation are parking garages, warehouses, basements, shielded structures, metal buildings, office complexes, campus environments, hospitals, and convention centers.

### Specifications

Linear Output Power (dual/single typical)	51062,51075	51080	61080
Cellular	25/27 dBm	-	28/30 dBm
SMR 700 MHz <sup>1</sup>	-	26 dBm	-
SMR 800-900 MHz	25/27 dBm	-	28/29 dBm
PCS	21/22 dBm	-	25/26 dBm
<b>Power Requirements</b>			
Single/Full Band	120 Vac @ 500 mA	120 Vac @ 1.3 A	120 Vac @ 1.3 A
Dual Passband/Dual Band	120 Vac @ 1.3 A	-	120 Vac @ 2.0 A

#### 510 & 610 Series

Noise Figure (typical)	5.5 - 8.5 dB	5.5 - 8.5 dB
AGC Dynamic Range	25 dBm	25 dBm
Propagation Delay	<250 nsec	<250 nsec
Gain Adjustment Range	0-30 dB, 1 dB Steps	0-30 dB, 1 dB Steps
Connectors	N-Female	N-Female
<b>Dimensions / Weight</b>		
Single Band	12.38" x 12.6" x 6.21" / 18 lbs (314.4 x 320.0 x 157.7 mm / 8.16 kg)	
Dual Passband/Dual Band	16.6" x 17.88" x 7.68" / 19.8 lbs (421.6 x 454.1 x 195.0 mm / 8.98 kg)	
Dual Passband Notch <sup>2</sup>	Special Configuration	

<sup>1</sup>SMR 700 unites are not available in dual band combinations.

<sup>2</sup>Separate mounting for notch filters required. Contact CSI for configuration information

## Model Numbers / Frequency Ranges

	LINEAR GAIN LINEAR OUTPUT POWER	65 dB 0.5 Watt	75 dB 0.5 Watt	80dB 1 Watt
<b>SINGLE BAND</b>				
<b>CONTIGUOUS</b>				
	<b>800 or 900 MHz</b>			
Cellular A Band	824-835 & 869-880	CSI-BDA51062-CA	CSI-BDA51075-CA	CSI-BDA61080-CA
Cellular B Band	835-849 & 880-894	CSI-BDA51062-CB	CSI-BDA51075-CB	CSI-BDA61080-CB
Cellular Full Band*	824-849 & 869-894	CSI-BDA51062-C	CSI-BDA51075-C	CSI-BDA61080-C
SMR 700	794-806 & 764-776	-	-	CSI-BDA51080-P7
SMR 800 IDEN	806-821 & 851-866	CSI-BDA51062-S8i	CSI-BDA51075-S8i	CSI-BDA61080-S8i
SMR 800 Full Band	806-824 & 851-869	CSI-BDA51062-S8	CSI-BDA51075-S8	CSI-BDA61080-S8
SMR 900 Band	896-901 & 935-940	CSI-BDA51062-S9	CSI-BDA51075-S9	CSI-BDA61080-S9
<b>SINGLE BAND</b>				
<b>CONTIGUOUS</b>				
	<b>PCS 1900 or DCS 1800</b>			
PCS A Block	1850-1865 & 1930-1945	CSI-BDA51062-PA	CSI-BDA51075-PA	CSI-BDA61080-PA
PCS B Block	1870-1885 & 1950-1965	CSI-BDA51062-PB	CSI-BDA51075-PB	CSI-BDA61080-PB
PCS C Block	1895-1910 & 1975-1990	CSI-BDA51062-PC	CSI-BDA51075-PC	CSI-BDA61080-PC
PCS D Block	1865-1870 & 1945-1950	CSI-BDA51062-PD	CSI-BDA51075-PD	CSI-BDA61080-PD
PCS E Block	1885-1890 & 1965-1970	CSI-BDA51062-PE	CSI-BDA51075-PE	CSI-BDA61080-PE
PCS F Block	1890-1895 & 1970-1975	CSI-BDA51062-PF	CSI-BDA51075-PF	CSI-BDA61080-PF
PCS A & D Block	1850-1870 & 1930-1950	CSI-BDA51062-PAD	CSI-BDA51075-PAD	CSI-BDA61080-PAD
PCS B & E Block	1870-1890 & 1950-1970	CSI-BDA51062-PBE	CSI-BDA51075-PBE	CSI-BDA61080-PBE
PCS F & C Block	1890-1910 & 1970-1990	CSI-BDA51062-PFC	CSI-BDA51075-PFC	CSI-BDA61080-PFC
PCS E & F Block	1885-1895 & 1965-1975	CSI-BDA51062-PEF	CSI-BDA51075-PEF	CSI-BDA61080-PEF
PCS B, E, & F Block	1870-1895 & 1950-1975	CSI-BDA51062-PBEF	CSI-BDA51075-PBEF	CSI-BDA61080-PBEF
PCS D, B, & E Block	1865-1890 & 1945-1970	CSI-BDA51062-PDBE	CSI-BDA51075-PDBE	CSI-BDA61080-PDBE
PCS E, F, & C Block	1885-1910 & 1965-1990	CSI-BDA51062-PEFC	CSI-BDA51075-PEFC	CSI-BDA61080-PEFC
PCS D, B, E, & F Block	1865-1895 & 1945-1975	CSI-BDA51062-PDBEF	CSI-BDA51075-PDBEF	CSI-BDA61080-PDBEF
PCS Full Band*	1850-1910 & 1930-1990	CSI-BDA51062-P	CSI-BDA51075-P	CSI-BDA61080-P
<b>DUAL PASSBAND</b>				
<b>NON-CONTIGUOUS</b>				
	<b>800 or 900 MHz</b>			
Cellular A Notched	824-835/845-846.5 & 869-880/890-891.5	CSI-BDA51062-CAN	CSI-BDA51075-CAN	CSI-BDA61080-CAN
Cellular B Notched	835-845/846.5-849 & 880-890/891.5-894	CSI-BDA51062-CBN	CSI-BDA51075-CBN	CSI-BDA61080-CBN
<b>DUAL BAND**</b>				
Cellular / PCS**	824-849/869-894 & 1850-1910/1930-1990	CSI-BDA51062-C(X)/P(X)	CSI-BDA51075-C(X)/P(X)	CSI-BDA61080-C(X)/P(X)
SMR 800 IDEN / PCS**	806-821/851-866 & 1850-1910/1930-1990	CSI-BDA51062-S8i/P(X)	CSI-BDA51075-S8i/P(X)	CSI-BDA61080-S8i/P(X)
SMR 800 / PCS**	806-824/851-869 & 1850-1910/1930-1990	CSI-BDA51062-S8/P(X)	CSI-BDA51075-S8/P(X)	CSI-BDA61080-S8/P(X)
SMR 900 / PCS**	896-901/935-940 & 1850-1910/1930-1990	CSI-BDA51062-S9/P(X)	CSI-BDA51075-S9/P(X)	CSI-BDA61080-S9/P(X)
SMR 800 / 900	806-824/851-869 & 896-901/935-940	CSI-BDA51062-S8/S9	CSI-BDA51075-S8/S9	CSI-BDA61080-S8/S9

\* Dimensions/weight is equivalent to a Dual Band/Dual Passband BDA.

\*\* 75 dB of gain for dual band PCS/PCS units.

\*\*\* Multiple Cellular and/or PCS Configurations Available. Contact CSI For Product Details.

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## >> IN-BUILDING AMPLIFIER APPLICATION NOTES

### Application Notes Overview

All CSI BDA model 510 and 610 series are equipped with three automatic fault and protection features designed to protect both the BDA and the Carrier's network. The protection features also attempt automatic recovery, thus reducing potential service calls.

#### AGC (Automatic Gain Control) Shutdown Notes

"AGC" will limit total composite power output by reducing the gain of the BDA in 1 dB steps. There is 30 dB of AGC range available. If the 30dB range is exceeded, the BDA will go into *SHUTDOWN* mode. The amount of AGC is displayed on the BDA's main menu. It is normal and not objectionable to see some amount of AGC in many cases, however the user may choose to attenuate the BDA accordingly to avoid AGC operation.

#### Shutdown

The "*SHUTDOWN*" feature is intended to shut the BDA down in cases of severe signal overload. Typically, there are three instances in which the BDA may shutdown.

- >> AGC Overdrive (excessive signal input level to either port)
- >> Oscillation that is not correctable by "Oscillation Control"
- >> Selecting "Shutdown" in the BDA Operation Menu

Once in shutdown, the BDA will attempt to recover within 15 seconds. If it cannot recover it will try again in another 15 seconds. If the second recovery attempt is unsuccessful, the BDA will wait another 5 minutes before the next attempt, and will stay in the 5-minute retry cycle until the condition is corrected.

#### Oscillation Control

In the event of a system oscillation, typically caused by insufficient RF Isolation (physical separation) between the donor and server antenna, the BDA will go into "*OSCILLATION CONTROL*" and limit gain to stop the oscillation. Gain is reduced in 3dB steps until the BDA can operate without oscillating. If it cannot correct the oscillation within the operational range of the AGC, the unit will shutdown. The BDA is constantly monitoring power to evaluate oscillation conditions and attempts to recover to the previously defined user gain setting. Recovery attempts are in 1dB steps and occur about every 5-10 seconds.

### PRODUCT SUPPORT CONTACTS

If you have any additional questions feel free to contact us!

Product Support: 1.866.670.2211

Tech Support: 1.866.360.7297 or [support@cellularspecialties.com](mailto:support@cellularspecialties.com)

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