

	Single Band Mini Booster For CDMA 800MHz or GSM 900MHz or DCS1800MHz or UMTS 2100MHz	Code : PW-MB20-Series		
		Rev 1	Issued 27/03/2009	Page 1/3

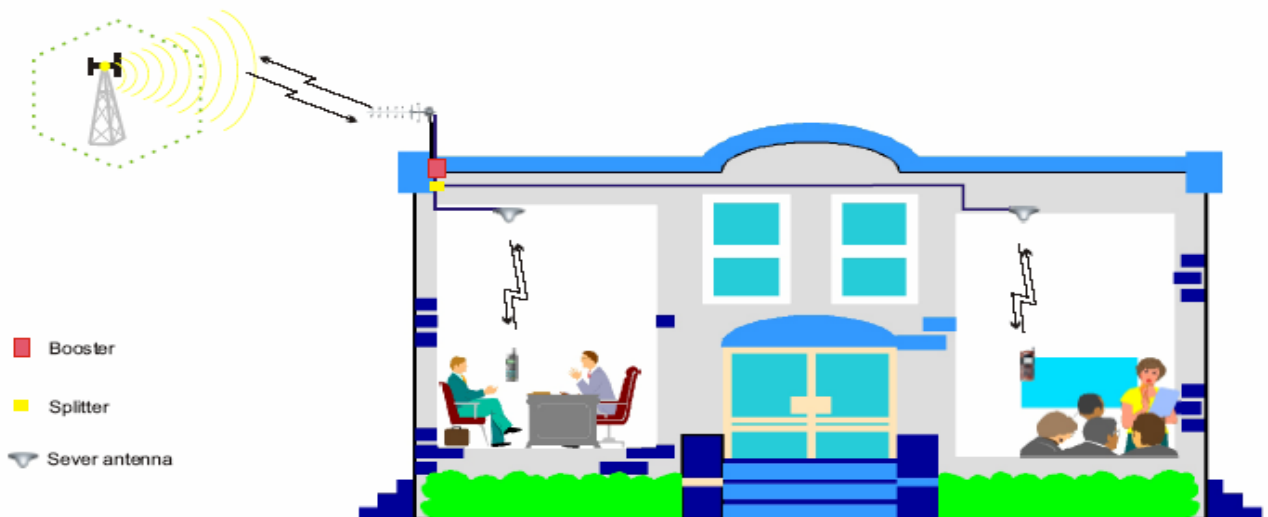
Single Band +20dBm Mini Booster

> Introduction

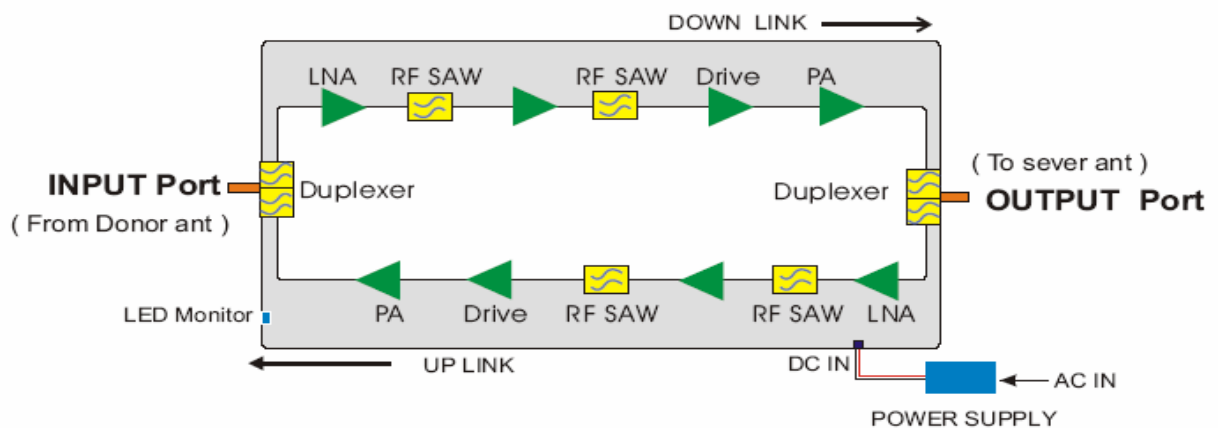
Mini Booster is an ideal solution to provide a cost effective improvement in cellular coverage up to 500-800 m2, such as home, small office, VIP room, shop or restaurant.


- Wideband feature enables to provide indoor coverage from Multi Cellular Operator.
- Simple maintenance with LED Indication as operation status.
- Better Signal Performance will extend Handset Battery Life.
- A fast & instant solution to achieve customer satisfaction.
- Compact Design & Light Weight make it easy to install.
- Low Electrical Power Consumption (18-45 Watt)
- Support up to 40 users/calls simultaneously.

Application <



Block Diagram <



	Single Band Mini Booster For CDMA 800Mhz or GSM 900Mhz or DCS1800Mhz or UMTS 2100Mhz	Code : PW-MB20-Series		
		Rev 1	Issued 27/03/2009	Page 2/3

Specification

Description		Booster Specification	
Booster Model	Frequency Band	UPLINK	DOWN LINK
PW-MB20-800	CDMA 800Mhz	824 ~ 849 MHz	869 ~ 894 MHz
PW-MB20-900	GSM 900 Mhz	890 ~ 915 MHz	935 ~ 960 Mhz
PW-MB20-1800	DCS 1800Mhz	1710~1785 MHz	1805~1880 MHz
Band Width	CDMA 800 Mhz & GSM 900Mhz	25MHz	
	DCS 1800Mhz	75MHz	
Max Gain		≥ 70 dB	
Gain Flatness	CDMA 800Mhz & GSM 900Mhz	8dB	
	DCS 1800Mhz	10dB	
AGC		> 20 dB	
MGC		31dB @1dB/step	
Maximum Input Power		0dBm	
Output Power		UL ≥ 15 dBm, DL ≥ 20 dBm	
Inter-modulation		9KHz~1GHz ≤ -20 dBm 1GHz~12.75GHz ≤ -30 dBm	
Spurious Emission		9KHz~1GHz ≤ -36 dBm 1GHz~12.75GHz ≤ -30 dBm	
Noise Figure		≤ 5 dB	
Group Delay		≤ 0.5 micro Sec	
Impedance		50 Ω	
Power Supply	CDMA 800Mhz & GSM 900Mhz	Transformer : Input 220VAC, 50Hz, Output 9Volt / 2Amp	
	DCS 1800Mhz	Transformer : Input 220VAC, 50Hz, Output 9Volt / 5Amp	
Operating Temperature		-10 to +50°C	
RF Connector / Environment		N (Female) / IP 40	
Dimension	CDMA 800Mhz & GSM 900Mhz	183*128* 45.5mm	
	DCS 1800Mhz	295*160* 50 mm	
Weight	CDMA 800Mhz & GSM 900Mhz	≤ 1.0 Kg	
	DCS 1800Mhz	≤ 2.5 Kg	
LED Indicators			
Power ON/ OFF		ON/ OFF	
Input Singnal Levels		-50dBm or more	
Normal		At the edge of green and orange	
Low		Green	
High		$> 1-5$ dB range: Orange; > 20 dB: Red	

	Single Band Mini Booster For CDMA 800Mhz or GSM 900Mhz or DCS1800Mhz or UMTS 2100Mhz	Code : PW-MB20-Series		
		Rev 1	Issued 27/03/2009	Page 3/3

Specification

Booster Model : PW-MB20-2100	UPLINK	DOWN LINK
Frequency Range	1920~1970MHz	2110~2170MHz
Band Width /Noise Figure	60MHz / ≤ 5 dB	
Max Gain / Gain Flatness	≥ 70 dB / 6dB	
AGC / MGC	> 20 dB / 31dB @1dB/step	
Maximum Input Power	0dBm	
Output Power	UL ≥ 15 dBm, DL ≥ 20 dBm	
Inter-modulation	Complies with 3GPP TS 25.106	
Spurious Emission Mask	Complies with 3GPP TS 25.106	
Spurious Emission	Complies with 3GPP TS 25.106	
Modulation Accuracy	Complies with 3GPP TS 25.106	
Peak Code Domain Error	Complies with 3GPP TS 25.106	
ACRR	≥ 30 dB @ ± 5 MHz & ± 10 MHz	
Frequency Stability	≤ 0.01 ppm	
Group Delay	≤ 0.5 micro Sec	
Impedance	50 Ω	
Power Supply	Transformer : Input 220VAC, 50Hz, Output 9Volt / 2Amp	
Operating Temperature	$-10 \sim +50^{\circ}\text{C}$	
RF Connector / Environment	N (Female) / IP 40	
Dimension / Weight	183*128* 45.5mm/ ≤ 1.0 Kg	
LED Indicators		
Power ON/ OFF	ON/ OFF	
Input Signal Levels	-50 dBm or more	
Normal	At the edge of green and orange	
Low	Green	
High	$>1-5$ dB range: Orange; >20 dB: Red	


PRODUCT PHOTO :

PW-MB20-800
PW-MB20-900
PW-MB20-2100



PW-MB20-1800



	Single Band Mini Booster For CDMA 800MHz or GSM 900MHz or DCS 1800MHz or UMTS 2100MHz	Code : PW-MB33-Series		
		Rev 2	Issued 15/01/2010	Page 1/5

Single Band +33dBm Mini Booster

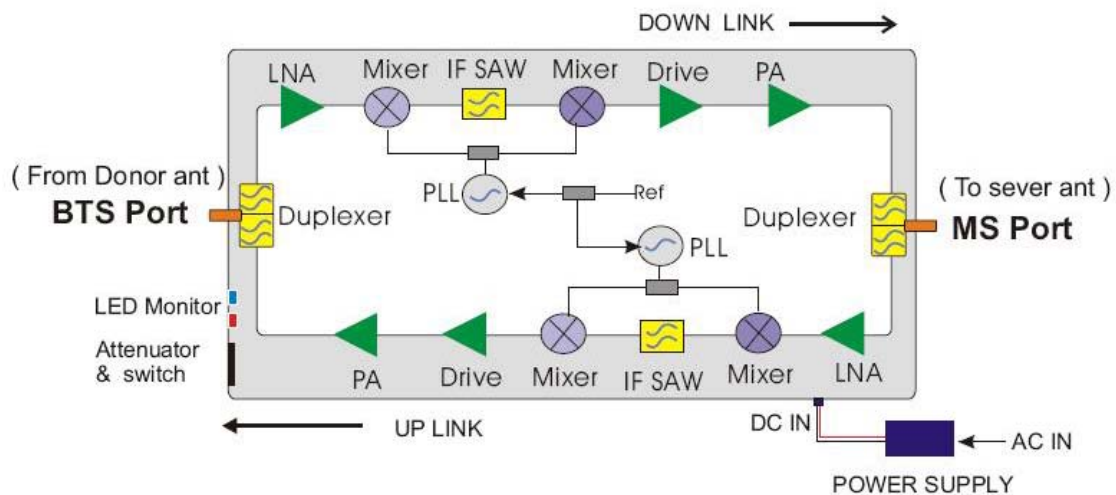
> Introduction


Mini Booster is an ideal solution to provide a cost effective improvement in cellular coverage upto 5000 m2, such as home, small office, VIP room, shop or restaurant.

- Wideband feature enables to provide indoor coverage from Multi Cellular Operator.
- Support up to 50 users/calls simultaneously.
- Low Electrical Power Consumption (50-110 Watt)
- Simple with LED Indication as operation status.
- Better Signal Performance will extend Mobile Battery Life.
- A fast & instant solution to achieve customer satisfaction.
- Compact Design & Light Weight make it easy to install.



Block Diagram




	Single Band Mini Booster For CDMA 800MHz or GSM 900MHz or DCS 1800MHz or UMTS 2100MHz	Code : PW-MB33-Series		
		Rev 2	Issued 15/01/2010	Page 2/5

Specification

PW-MB-33-800 for CDMA 800MHz


Electrical Specification	Uplink	Downlink
CDMA800	824 - 849MHz, 869~894MHz	
CDMA1900	1850 - 1910MHz, 1930 - 1990MHz	
Bandwidth	Wideband or upon request	
Maximum Gain	$\geq 83\text{dB}$	
Gain Flaness	$\pm 2\text{dB}$	
AGC Range	$\geq 20\text{dB}$	
Gain Control Range(MGC)	31dB in step of 1dB	
Input Power	0dBm	
Output Power	UpLink $\geq 20\text{dBm}$	DownLink $\geq 33\text{dBm}$
Intermodulation	Complies with IS-95	
Spurious Emission	Complies with IS-95	
ACPR	Complies with IS-95	
Rho	Complies with IS-95	
Noise Figure	$\leq 7\text{dB typ}$	
Group Delay	$\leq 5 \text{ micro Sec}$	
TX/RX isolation	$\geq 100\text{dBc}$	
V.S.W.R	≤ 2	
Impedance	50 Ω	
Cooling	Heatsink Convection cooling	
RF Connector	N(female)-Type	
HARDWARE CONTROLS		
DIP Switch	0-31dB (Manual Gain Control)	
LED Indicator : ON/OFF	On:Green	Off:no light
Input Signal Levels	-50dBm or more	
- Normal	At the edge of green and orange	
- Low	Green	
- High	>1-5dB :Orange; >20dB:Red	

	Single Band Mini Booster For CDMA 800MHz or GSM 900MHz or DCS 1800MHz or UMTS 2100MHz	Code : PW-MB33-Series		
		Rev 2	Issued 15/01/2010	Page 3/5

Specification

PW-MB-33-900 for GSM 900MHz


Electrical Specification		Uplink	Downlink
GSM 900		880 ~ 915 MHz, 925 ~ 960 MHz	
Bandwidth		Wideband or upon request	
Maximum Gain		$\geq 83\text{dB}$	
Gain Flaness		$\pm 2\text{dB}$	
AGC Range		$\geq 20\text{dB}$	
Gain Control Range(MGC)		31dB in step of 1dB	
Input Power		0dBm	
Output Power		UpLink $\geq 20\text{dBm}$	DownLink $\geq 33\text{dBm}$
Spurious Emission	9Khz~1 GHz	$\leq -36\text{dBm}$	$\leq -36\text{dBm}$
	1GHz~12.75 GHz	$\leq -30\text{dBm}$	$\leq -30\text{dBm}$
Noise Figure		$\leq 7\text{dB}$ typical	
Group Delay		≤ 5 micro Sec	
TX/RX isolation		$\geq 100\text{dBc}$	
V.S.W.R		≤ 2	
Impedance		50 Ω	
Cooling		Heatsink Convection cooling	
RF Connector		N(female)-Type	
HARDWARE CONTROLS			
DIP Switch		0-31dB (Manual Gain Control)	
LED Indicator : ON/OFF		On:Green	Off:no light
Input Signal Levels		-50dBm or more	
- Normal		At the edge of green and orange	
- Low		Green	
- High		>1-5dB Orange; >20dB:Red	

	Single Band Mini Booster For CDMA 800MHz or GSM 900MHz or DCS 1800MHz or UMTS 2100MHz	Code : PW-MB33-Series		
		Rev 2	Issued 15/01/2010	Page 4/5

Specification

PW-MB-33-1800 for DCS 1800MHz

Electrical Specification		Uplink	Downlink
DCS		1710 - 1785MHz, 1805 - 1880MHz	
Bandwidth		Wideband or upon request	
Out of Band Gain		$\pm 400 \text{ KHz} \leq +45\text{dBc}$	
Maximum Gain		$\geq 83\text{dB}$	
Gain Flaness		$\pm 2\text{dB}$	
AGC Range		$\geq 20\text{dB}$	
Gain Control Range(MGC)		31dB in step of 1dB	
Input Power		0dBm	
Output Power		UpLink $\geq 20\text{dBm}$	DownLink $\geq 33\text{dBm}$
Intermodulation	9KHz~1GHz	$\leq -36\text{dBm}$	$\leq -36\text{dBm}$
	1GHz~12.75GHz	$\leq -30\text{dBm}$	$\leq -20\text{dBm}$
Spurious Emission	9KHz~1GHz	$\leq -36\text{dBm}$	$\leq -36\text{dBm}$
	1GHz~12.75GHz	$\leq -30\text{dBm}$	$\leq -30\text{dBm}$
Noise Figure		$\leq 7\text{dB typ}$	
Group Delay		$\leq 5 \text{ micro Sec}$	
TX/RX isolation		$\geq 100\text{dBc}$	
V.S.W.R		≤ 2	
Impedance		50 Ω	
Cooling		Heatsink Convection cooling	
RF Connector		N(female)-Type	
HARDWARE CONTROLS			
DIP Switch		0-31dB (Manual Gain Control)	
LED Indicator : ON/OFF		On:Green	Off:no light
Input Signal Levels		-50dBm or more	
- Normal		At the edge of green and orange	
- Low		Green	
- High		>1-5dB :Orange; >20dB:Red	

	Single Band Mini Booster For CDMA 800MHz or GSM 900MHz or DCS 1800MHz or UMTS 2100MHz	Code : PW-MB33-Series		
		Rev 2	Issued 15/01/2010	Page 5/5

Specification

 PW-MB-33-2100 for WCDMA 2100MHz

Electrical Specification	Uplink	Downlink
Working Frequency	1920 - 1980MHz, 2110 - 2170MHz	
Extension Frequency	Other frequency 800, 900, etc.	
Bandwidth	Wideband or upon request	
Maximum Gain	$\geq 83\text{dB}$	
Gain Flaness	$\pm 2\text{dB}$	
AGC Range	$\geq 20\text{dB}$	
Gain Control Range(MGC)	31dB in step of 1dB	
Input Power	0dBm	
Output Power	UpLink $\geq 20\text{dBm}$	DownLink $\geq 33\text{dBm}$
f_offset $2.7 \cong f_offset < 3.5\text{MHz}$ $3.5 \cong f_offset < 7.5\text{MHz}$ $7.5 \cong f_offset < 12.5\text{MHz}$ $12.5 \cong f_offset$	Maximum Gain $< 60\text{dB}$ $< 45\text{dB}$ $< 45\text{dB}$ $< 35\text{dB}$ Meeting with 3GPP standards	
Modulation Accuracy	$\cong 12.5\%$	
Peak Code Domain Error	$\cong -40\text{dB}$ @ Spreading Factor 256	
Noise Figure	$\cong 7\text{dB}$ typ	
Group Delay	$\cong 5$ micro Sec	
TX/RX isolation	$\geq 100\text{dBc}$	
V.S.W.R	$\cong 2$	
Impedance	50 Ω	
Cooling	Heatsink Convection cooling	
RF Connector	N(female)-Type	
HARDWARE CONTROLS		
DIP Switch	0-31dB (Manual Gain Control)	
LED Indicator : ON/OFF	On:Green	Off:no light
Input Signal Levels	-50dBm or more	
- Normal	At the edge of green and orange	
- Low	Green	
- High	$> 1-5\text{dB}$:Orange; $> 20\text{dB}$:Red	