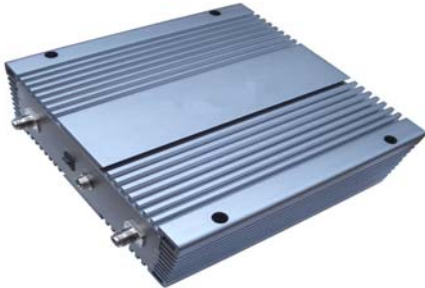
	<b>Dual-Band In-Line Amplifier For GSM1800 + UMTS 2100</b>	<b>Code : PW-LA-xx-DW</b>		
		<b>Rev</b> 1	<b>Issued</b> 18/03/2009	<b>Page</b> 1/3

## DUAL BAND IN-LINE AMPLIFIER (LA SERIES)

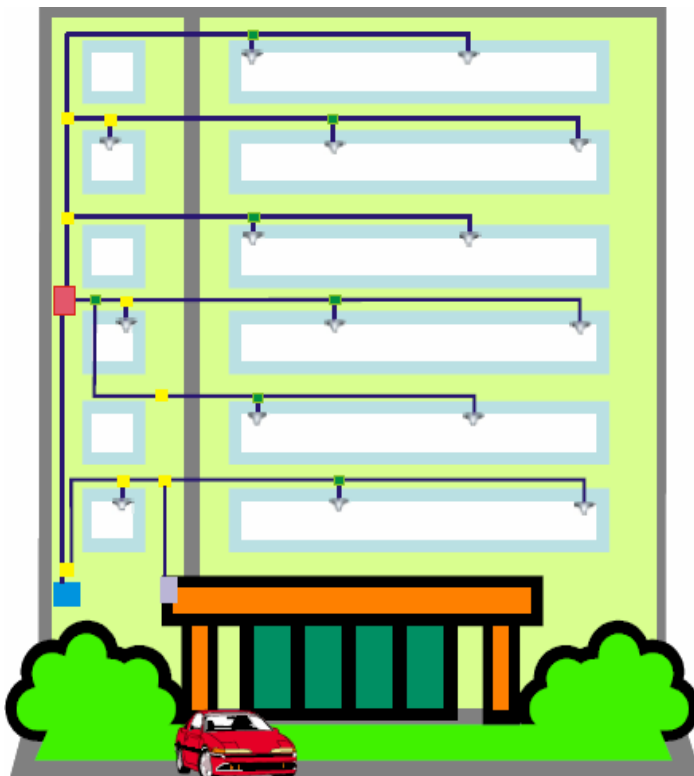
- ▶ Compact designed and light weight and cost effectiveness.
- ▶ Implemented with repeater or BTS for indoor coverage extension
- ▶ Applicable to In-Building with medium or small size with Maximum coverage up to 3,000msq (for +25dBm) or 8,000msq (for +33dBm) such as VIP room, office, restaurant, house/apartments, parking lots.
- ▶ High linearity design, simple and easy installation as well as maintenance with LED indication for operation status.
- ▶ Low power consumption and Low interference.
- ▶ ALC to limit output power at specified level and ensure stable coverage effect.





### Application

In some In-Building, we need of In-Line Amplifier with below conditions:

- Space Limitation inside Cable shaft/Riser.
- In-Line Amplifier is solution for cost efficiency by using small size of Feeder Cable.
- Insufficient RF Link Budget for huge or high rise building application.
- To save Number of BTS for certain site with low Cellular Traffic.



- BTS or Microcell
- Line amplifier
- Coupler
- Splitter
-  Ceiling antenna
- Panel antenna


	<b>Dual-Band In-Line Amplifier</b> <b>For GSM1800 + UMTS 2100</b>	<b>Code : PW-LA-xx-DW</b>		
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## Specification

**PW-LA-25-DW**

Electrical Specification		Uplink	Downlink
Frequency Range		1710~1785 & 1920~1980MHz	1805~1880 & 2110~2170MHz
Maximum Gain		≥ 25dB	≥ 30dB
Manual Gain Control (1dB step)		31dB in step of 1dB	31dB in step of 1dB
Automatic Gain Control		≥ 20dB	≥ 10dB
Gain Flatness		≤ 3dB (P-P) / ≤ 2dB/3.84MHz	≤ 3dB (P-P) / ≤ 2dB/3.84MHz
Output Power		≥ 0dBm/ total output power	≥ 25dBm/ total output power
		≥ -3dBm/ Ch @ 2 channels	≥ 22dBm/ Ch @ 2 channels
Out of Band Gain	2.7 ≤ f_offset ≤ 3.5MHz	≤ 60dB	≤ 60dB
	3.5 ≤ f_offset ≤ 7.5MHz	≤ 45dB	≤ 45dB
	7.5 ≤ f_offset ≤ 12.5MHz	≤ 45dB	≤ 45dB
	12.5 ≤ f_offset	≤ 35dB	≤ 35dB
In particular frequency segment	1.92G~1.98GHz	≤ -96dBm @ 100kHz	≤ -96dBm @ 100kHz
	876~815MHz	≤ -98dBm @ 100kHz	≤ -98dBm @ 100kHz
	1.71G~1.785GHz	≤ -98dBm @ 100kHz	≤ -98dBm @ 100kHz
	1.8935G~1.9196GHz	≤ -41dBm @ 100kHz	≤ -41dBm @ 100kHz
Inter-modulation Products		≤ -36dBm (9KHz~1GHz) ≤ -30dBm(1GHz~12.76GHz)	≥ 45dBc
Spurious Emission Comply with 3GPP TS 25.106(WCDMA)		≤ -36dBm (9KHz~1GHz)	≤ -36dBm (9KHz~1GHz)
		≤ -30dBm (1GHz~12.76GHz)	≤ -30dBm (1GHz~12.76GHz)
EVM		≤ 12.5%	≤ 12.5%
PCDE		≤ -35dB	≤ -35dB
Max. Input Power Without Damage		≥ 0dBm	DL ≥ 5dBm
Noise Figure		≤ 7dB typical (at max gain)	----
Group Delay		≤ 1.5μs	≤ 1.5μs
Power Supply		60 Watt / AC : 220Volt +20%, 45-55Hz	
Operating Temperature / Humidity		-25°C ~55°C / < 95 %	
RF Connectors Input & Output Port		N-Female @1pc	
Alarm Monitoring System		Local (via USB Port )	
Dimensions (H x W x D)		268*180*110 (with external Electrical Supply)	
Environment Conditions / MTBF		IP40 / ≥ 50000 hours	
Mounting method / Weight		Wall mounted / ≤ 5kg	
<b>2. Standard Alarm</b>			
<b>LED ALARM : External LED</b>		LED 1: Power ON/OFF; LED 2: Red light AGC out of range alarm	

Note : +25dBm In-Line Amplifier suitable to provide coverage area of 1,000-4,000 meter square (depends on Total carrier and Building Structure).

	<b>Dual-Band In-Line Amplifier</b> <b>For GSM1800 + UMTS 2100</b>	<b>Code : PW-LA-xx-DW</b>		
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## Specification

**PW-LA-33-DW**

Electrical Specification		Uplink	Downlink
Frequency Range		1710~1785	1805~1880
		1920~1980	2110~2170
Maximum Gain		≥ 35dB	≥ 40dB
Manual Gain Control		31dB in step of 1dB	31dB in step of 1dB
Automatic Gain Control		≥ 20dB	≥ 10dB
Gain Flatness		DCS: ≤ 3dB (P-P) WCDMA: ≤ 2dB/3.84MHz	DCS: ≤ 3dB (P-P) WCDMA: ≤ 2dB/3.84MHz
Output Power		≥ 0dBm/ total output power	≥ 33dBm/ total output power
		≥ -3dBm/ Ch @ 2 channels	≥ 30dBm/ Ch @ 2 channels
Out of Band Gain	2.7 ≤ f_offset ≤ 3.5MHz	≤ 60dB	≤ 60dB
	3.5 ≤ f_offset ≤ 7.5MHz	≤ 45dB	≤ 45dB
	7.5 ≤ f_offset ≤ 12.5MHz	≤ 45dB	≤ 45dB
	12.5 ≤ f_offset	≤ 35dB	≤ 35dB
In particular frequency segment	1.92G~1.98GHz	≤ -96dBm @ 100kHz	≤ -96dBm @ 100kHz
	876~815MHz	≤ -98dBm @ 100kHz	≤ -98dBm @ 100kHz
	1.71G~1.785GHz	≤ -98dBm @ 100kHz	≤ -98dBm @ 100kHz
	1.8935G~1.9196GHz	≤ -41dBm @ 100kHz	≤ -41dBm @ 100kHz
Intermodulation Products		≤ -36dBm (9KHz~1GHz)/ ≤ -30dBm(1GHz~12.76GHz)	≥ 45dBc
Spurious Emission Comply with 3GPP TS 25.106(WCDMA)		≤ -36dBm (9KHz~1GHz)	≤ -36dBm (9KHz~1GHz)
		≤ -30dBm (1GHz~12.76GHz)	≤ -30dBm (1GHz~12.76GHz)
EVM		≤ 12.5%	≤ 12.5%
PCDE		≤ -35dB	≤ -35dB
Max. Input Power Without Damage		≥ 0dBm	≥ 5dBm
Noise Figure		≤ 5dB typ.(at max gain)	----
Return Loss		BTS(≤ -14dB)	BTS(≤ -14dB)
		MS(≤ -14dB)	MS(≤ -14dB)
Group Delay		≤ 1.5μs	≤ 1.5μs
Power Supply /Power Consumption		AC : 220Volt +20%, 45-55Hz / 120Watt	
Operating Temperature / Connector		-25°C ~55°C / Nfemale	
Humidity / Environment Condition		< 95 % / IP53	
Dimensions(H*W*D) / Weight		340*430*160mm / ≤ 20kg	
Mounting Bracket / MTBF		Wall Mount / ≥ 50000 hours	
<b>2、Alarm</b>		<b>standard</b>	
<b>LED ALARM : External LED</b>		LED 1: Power ON/OFF; LED 2: Red light AGC out of range alarm	

Note : +33dBm In-Line Amplifier suitable to provide coverage area of 6,000-10,000 meter square (depends on Total carrier and Building Structure).