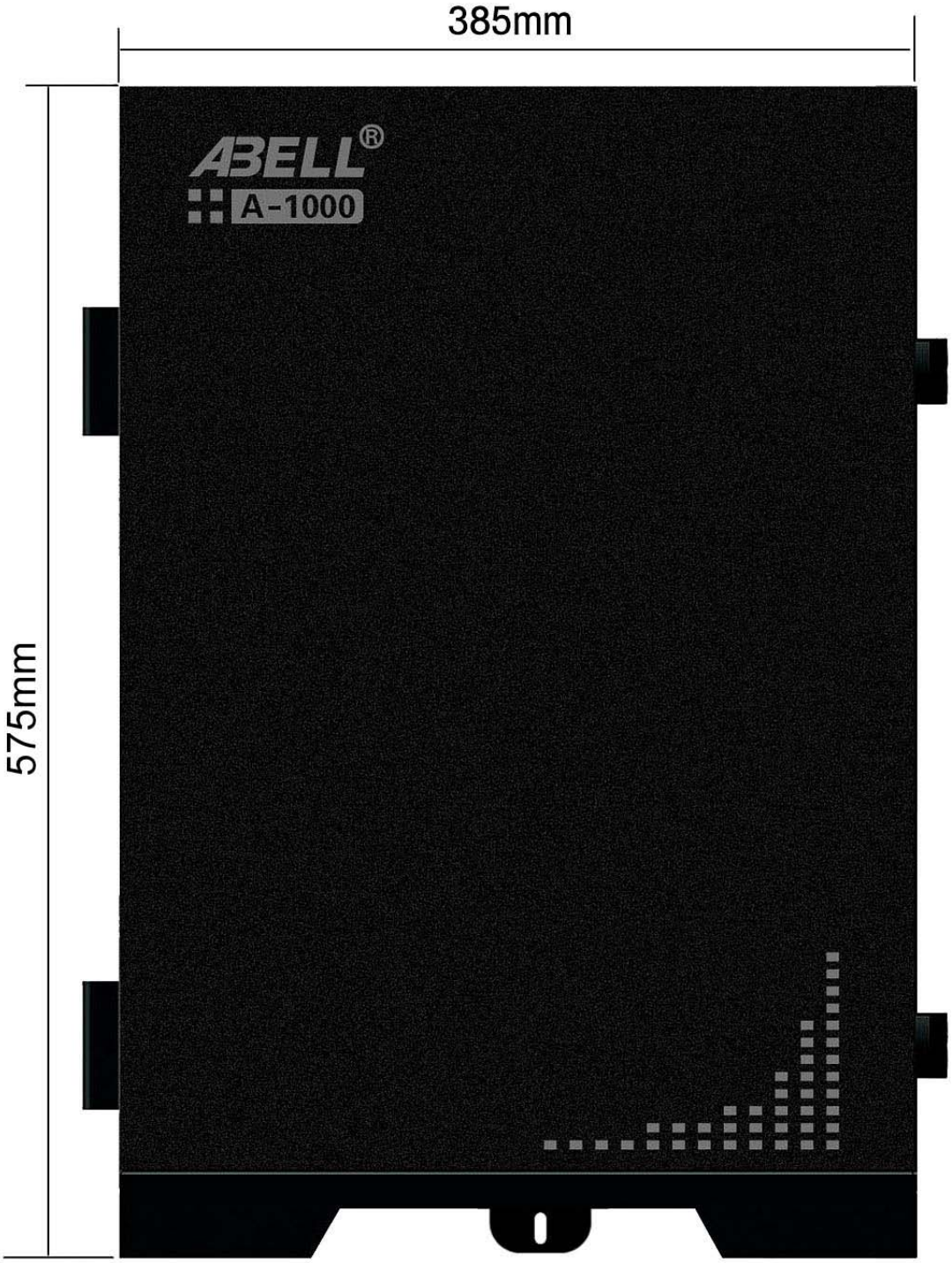
Power Amplifier A-1000

Introduction



1. Product Summary

1.1 Summary

A-1000 Power amplifier mainly used in the radio signal covering system of middle and small area, amplify the weaken radio signal by long distance delivery from base station(repeater) by the Down Link power amplifier(one of the two amplifiers built-in, the other is UP Link power amplier) , connect to indoor area which need signal coverage, by power divider or coupler through RF cables, radiate the signal of base station(repeater) to and also receive the signal from the radio terminals(portable radios) by antenna. Amplify the weak signal from the radio terminals by the UP Link power amplier, then transfer through the RF cables to the base station(Repeater). This process can compensate the signal lose by long distance transfer through RF cable, and effectively cover the communication blind spots indoor, against the interference, ensure the stable, reliable, high-quality signal coverage indoor.

One of the advantages of A-1000 is, it can help to ensure the signal coverage without increase of extra base station (repeater), the other advantage is, the cost is much lower than the simulcast repeater system with the similar performance(usually is digital devices). Comparing with the simulcast repeater system, the solution of A-1000 has more simple structure, much fewer cost, and easier installation. Widely used in the indoor radio signal coverage solution in the shopping mall, hotel, bar, metro, tunnels and parking underground, provide the reliable and cost-effective choice.

1.2 Structure

A-1000 components:

- Power supplier
- DOWN Link power amplifier
- UP Link power amplifier
- Duplexer(connect to base station)
- Duplexer(connect to antenna)

1.3 Feature

- Easy installation
- Full-duplex working, interference avoid
- wide range of gain and continuously adjustable without self-excitation
- Power amilifier with high linearity , Duplexer with top performance, effectively avoid the intermodulated and spurious signal
- Built-in temprature control and current limiting auto-control device
- Built-in power supplier with protection system

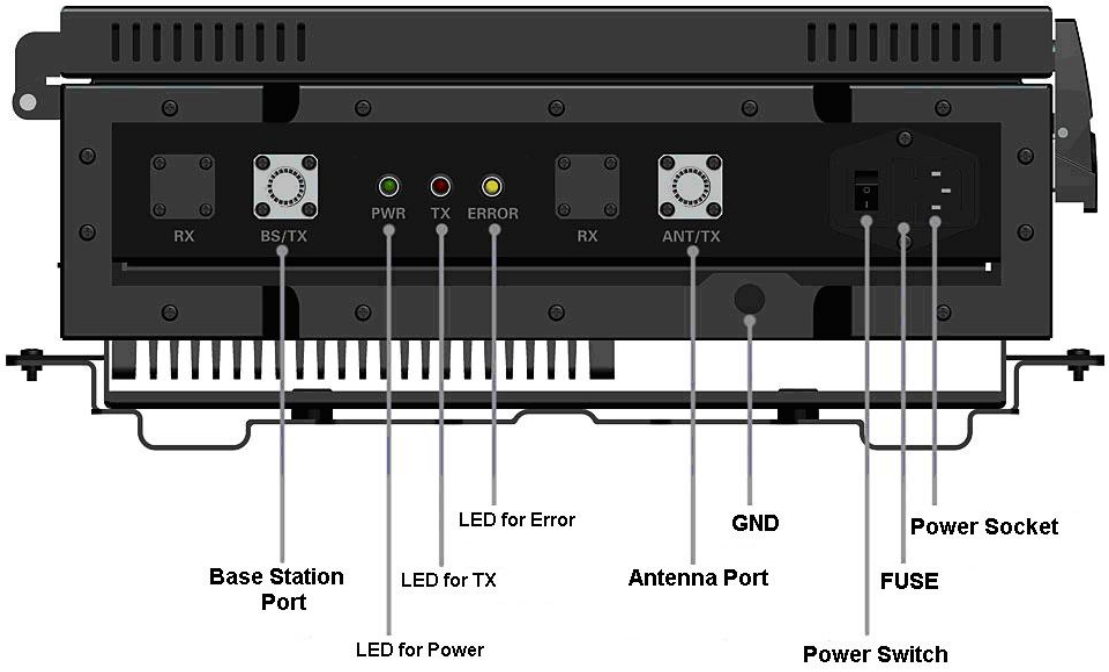
- With proof for water, humide, dust and salt mist.

1.4 Function list

- 0~30 dB UP Link Gain range 0~30 dB
- Down Link Output power level options 5, 10, 25W
- Down Link Input power limitation alarm
- Current limiting protection
- Temprature control protection
- Reflection protection

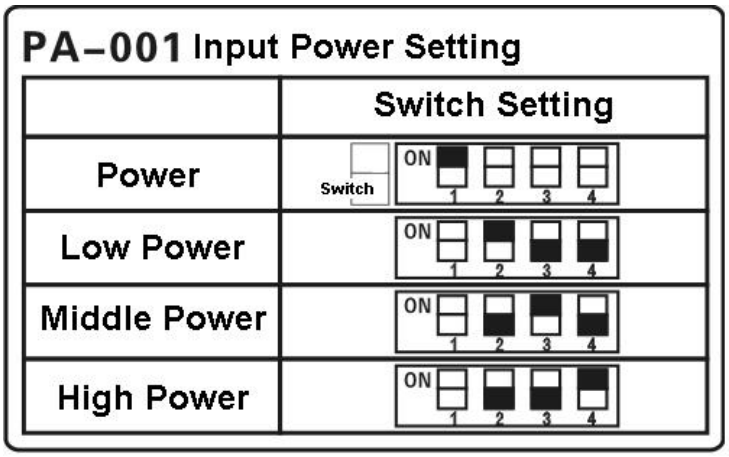
2. Operation Instruction

2.1 Interface introdcution



2.2 Setting for DOWN Link power input

Down Link power of A-1000 can be switched customisedly to low, middle, high, as the following:



2.2.1 The 1st switch is for power, push up is “Power ON”, and push down is “Power OFF”

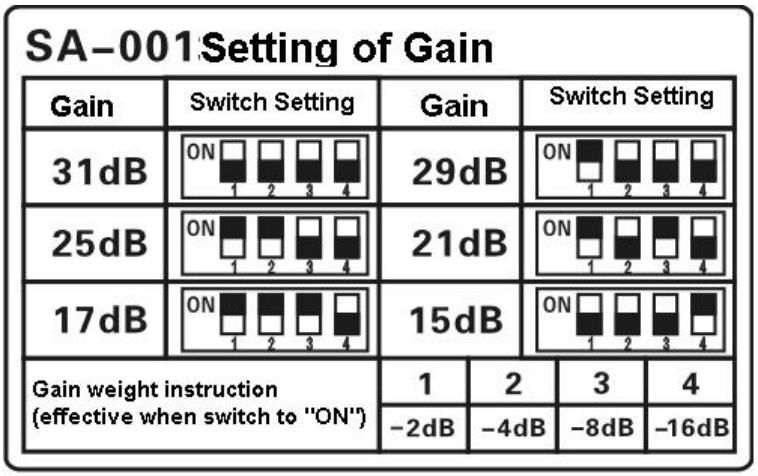
2.2.2 The 2nd switch is for lower input power, push up is “ON”, accordingly, the 3rd and 4th switch should be pushed down

2.2.3 The 3rd switch is for middle input power, push up is “ON”, accordingly, the 2nd and 4th switch should be pushed down

2.2.4 The 4th switch is for high input power, push up is “ON”, accordingly, the 2nd and 3rd switch should be pushed down

2.3 Setting for UP Link Gain

UP Link Gain of A-1000 can be switched customisedly, the minimal step is 2dB, the maximum Gain is 31dB, as the following:



2.3.1 The weight for the 1st switch is 2dB, when push it on, the total gain decrease 2 dB, when push it down, the total gain increase 2 dB

2.3.2 The weight for the 2nd switch is 4 dB, when push it on, the total gain decrease 4 dB, when push it down, the total gain increase 4 dB

2.3.3 The weight for the 3rd switch is 8 dB, when push it on, the total gain decrease 8 dB, when push it down, the total gain increase 8 dB

2.3.4 The weight for the 4th switch is 16 dB, when push it on, the total gain decrease 16 dB, when push it down, the total gain increase 16 dB

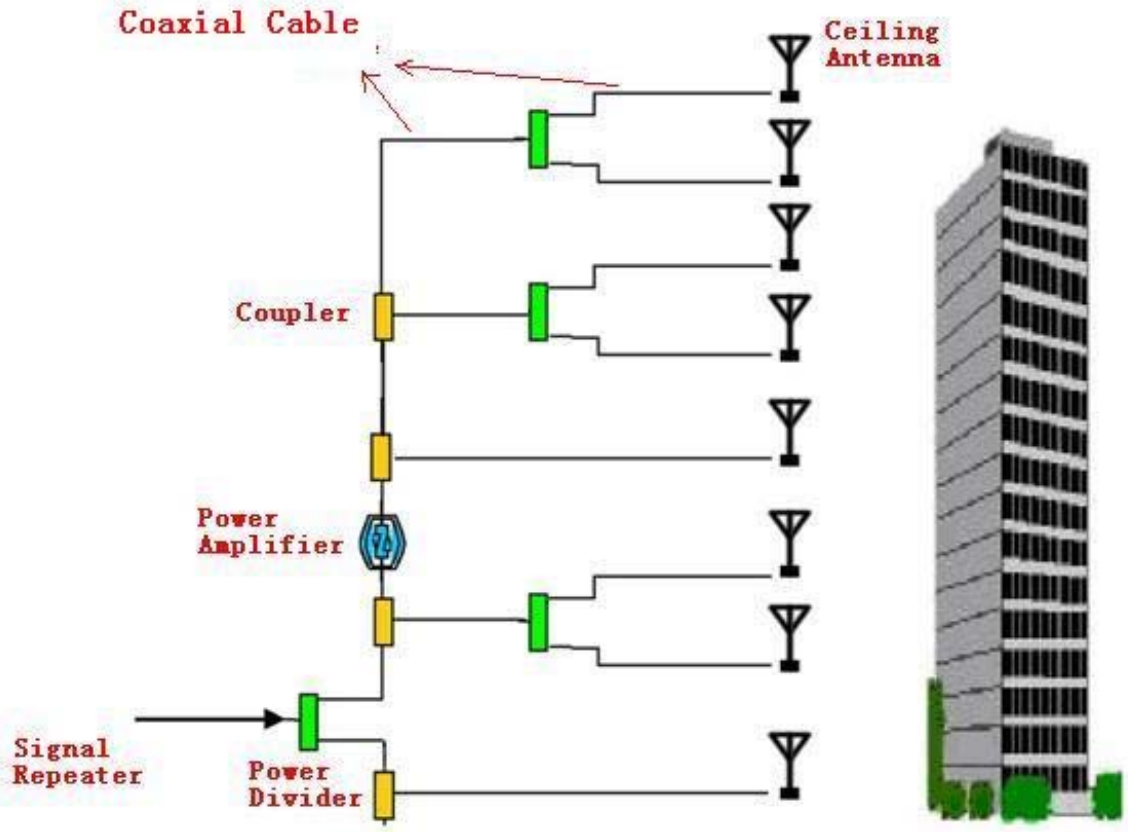
3. Electrical parameters

Model：A-1000	Down Link	Up Link
Frequency range	400～470MHz	400～470MHz
Input Voltage Level	3 ～ 15dBm	-115 ～ -40dBm
Gain	≥35 dB	0～31 dB（step 2dB）
Noise Factor	/	≤ 5 dB
Output power of Amplifier	H=44dBm M=40dBm L=37dBm	20dBm
Duplexer Insertion loss	≤1.8 dB	≤2 dB
Duplexer working frequency width	5MHz	
Duplexer RX/TX spacing	10MHz	
Wave inside working range	≤3dB	
Intermodulation reduction	≥ 65dBc @100kHz	
Spurious emissions	≤ -36dBm @ 9KHz ～ 3GHz	
Input/Output resistence	50Ω	
VSWR	≤1.50：1	
Interface	N-joint Female	
Working Temperature	-10℃～+55℃	
Environment Humidity	≤ 95% RH	
Waterproof and Dustproof	IP55	
Power supplier	AC100～260V（45～60Hz）	
AC Current	Typical: 0.5A/220VAC（25W version）	
Dimensions	573.4mm*385mm*155.7mm	
Weight	21.8kg	

4. Typical application

The solution contained A-1000 power amplifier, power divider, coupler, RF cable and antenna, widely used to resolve the indoor radio signal coverage problem in large and middle scale building. A-1000 can compensate the signal power lose during the transfer, avoid any signal blind area.

4.1 Tall building indoor coverage



4.2 Muitiple tall buildings indoor coverage