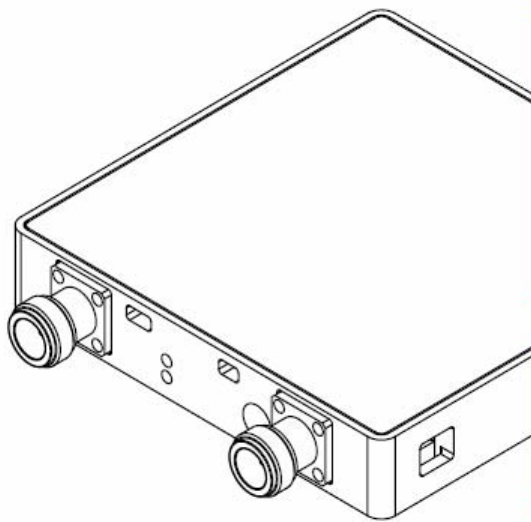


# User's manual



**Increase Signal Bars**



**Dropped Calls  
Poor Reception &  
Data Speed**



20102201

Dual Band Wireless Cell Phone Signal Amplifier

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## **We declare that:**

- ※ the product is installed with battery separately in the box. The FCC ID label is placed on Mobile Payment Terminal clearly visible to all persons at the time of purchase.
- ※ the user is cautioned that changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.
- ※ This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
  - (1) This device may not cause harmful interference, and
  - (2) This device must accept any interference received, including interference that may cause undesired operation.
- ※ Do not attempt to disassemble the Mobile Payment Terminal and battery by yourself. Non-expert handling of the devices may damage them.
- ※ Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment
- ※ FCC Radiation Exposure Statement: To comply with FCC RF exposure requirements in section 1.1307, a minimum separation distance of 20 cm is required between the antenna and all occupational persons, and a minimum separation distance of 20 cm is required between the antenna and all public persons.

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device. It was required to meet requirement of RSS-Gen Section 7.1.3.

## **1 Introduction**

### **1.1 Application background**

Due to the mobile communication network covers not perfect, the remote suburbs highway, cell phone signal existence covered blind spots. Residents drove go out, mobile phone often appear weak signal, the phenomenon such as no signal. In order to solve the problem, the residents used to buying their own cell phone signal amplifier products, local area signal coverage, in order to meet the communication needs.

## 2 System (the) introduction

### 2. 1 System composition and principle block diagram in the paper

#### 2. 1. 1 Diagram of the system of the



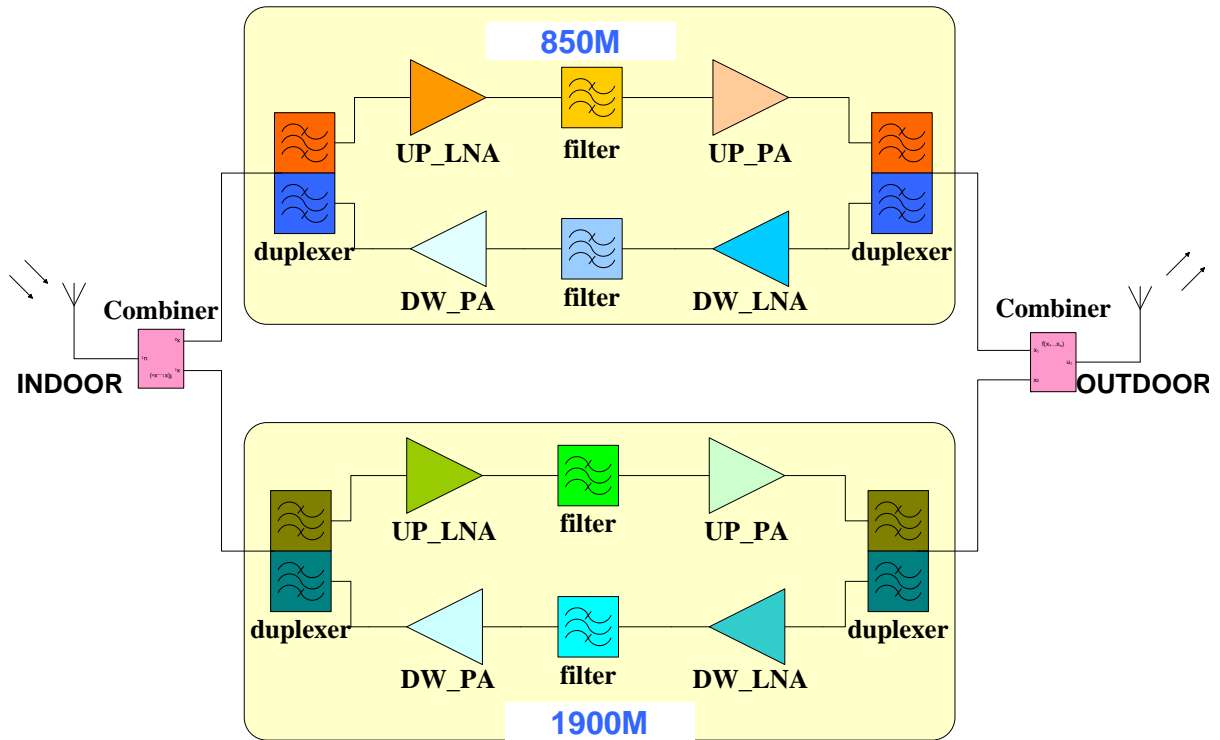
Cell phone signal amplifier communication schemes

#### 2. 1. 2 System principle outlined

1. This product is suitable for WCDMA、CDMA and GSM type of network。
2. Cell phone signal amplifier (and amplifier for synonyms hereinafter referred to as the amplifier), amplifiers, feeder, antenna etc。
3. The amplifier's working principle is descending amplifier through the installation in the OUTDOOR antenna base station downline weak signal, and then through the rf feeder will signal is introduced into equipment. Amplifier to the introduction of the weak base station downside signal filter and amplification, and through the INDOOR antenna will enlarge the signal after launch out to meet demand cover。
4. Uplink working principle: the amplifier INDOOR antenna to mobile terminal of the uplink signal, through the rf feeder introduced to the equipment. Equipment will be up for filter and amplification signal, and then through the rf feeder connected to the OUTDOOR antenna, the signal will launch out. Return to base station, so as to establish the whole communication links process。

## 2. 2 The composition and principle block diagram in the paper

### 2. 2. 1 The block diagram of



The principle diagram amplifier

### 2. 2. 2 The principles outlined

Mainly by 850 M amplifier and 1900 M two amplifier module, The distribution of the method of frequency by close to complete. First downside (BTS) signals through the OUTDOOR antenna into the method of close, Close to 850 M and PCS1900M method of two signals to choose apart, And then sent into the corresponding amplifier module will ampli.

Signals into the amplifier module, First after duplex device, Downlink signal to choose filter, Enter LNA (low noise amplifier) preliminary amplification, And then after surface acoustic filter filter, Enter UP\_PA (downside power amplifier) to signal further amplification. After double work of choice is again after filtering, Enter and method, and then through the heavy start antenna launch out

o

### 3Function

#### 3. 1. 1 Rf index

| Nmbcr | ITEM  | Specification               |            |              |              |
|-------|---|-----------------------------|------------|--------------|--------------|
|       |   | 850MHz band                 |            | 1900MHz band |              |
|       |   | Uplink                      | Downlink   | Uplink       | Downlink     |
| 1     | Frequency Range                                 | 824~849MHz                  | 869~894MHz | 1850~1910MHz | 1930~1990MHz |
| 2     | Output Power                                    | 19±2dBm                     | 11±2dBm    | 19±2dBm      | 10±2dBm      |
| 3     | Max .Gain                                       | 59±2dB                      | 62±2dB     | 59±2dB       | 62±2dB       |
| 4     | Noise Figure                                    | ≤6dB                        |            | ≤7.5dB       |              |
| 5     | Amplitude ripple                                | ≤6dB                        |            | ≤14dB        |              |
| 6     | Input V. S. W. R/<br>Output V. S. W. R          | ≤2.0                        |            |              |              |
| 7     | Spurious<br>Emission&Output<br>inter-modulation | 9kHz~1GHz ≤ -36dBm/100KHz   |            |              |              |
|       |   | 1GHz~12.75GHz ≤ -30dBm/1MHz |            |              |              |
| 8     | ZPORT   | 50 Ω                        |            |              |              |
| 9     | Operable<br>temperature<br>range                | -30℃ ~ 70℃                  |            |              |              |
| 10    | operating<br>current                            | ≤2.5A                       |            |              |              |
| 11    | Operating<br>voltage range                      | DC+5~6V                     |            |              |              |
| 12    | Contour<br>dimension                            | ≤140×122×22 (mm)            |            |              |              |

#### ■ 3. 1. 2 The input and output signal

1. OUTDOOR IN(869~894MHz\1930~1990MHz), INDOOR OUT;
2. INDOOR IN(824~849MHz\1850~1910MHz), OUTDOOR OUT。

## 3. 2 structure

### 3. 2. 1 cooling

The overall structure and the floor flats and combinations。 The bottom、 Cover for the metal aluminium material, Heat dissipation good。 Internal electroplating metal layer, Can effective signal, shielding。

### 3. 2. 2 appearance

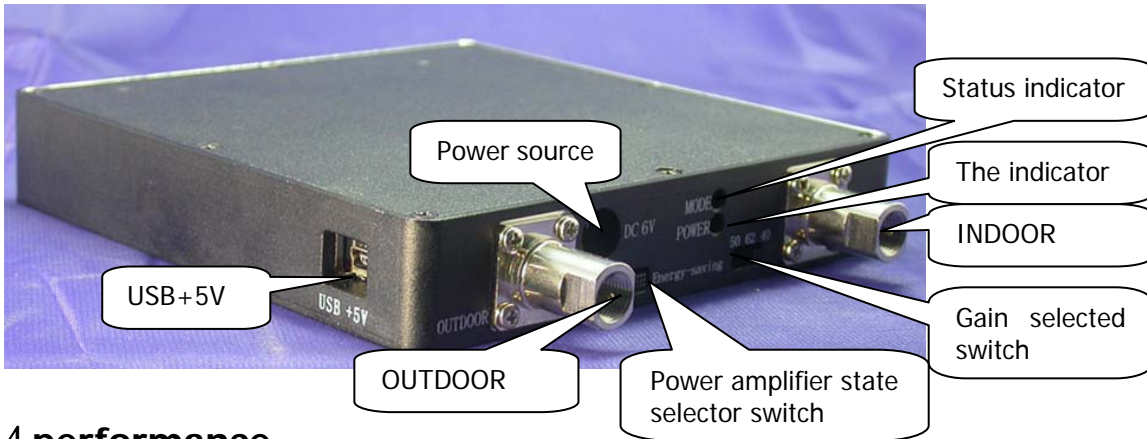


### 3. 2. 3 installation

Add install board, wall hung installation

### 3. 2. 4 Interface and function is introduced

1. The indicator: Green light;
2. Status indicator: Red light, When the power output full UP (850M UP End and the 1900M UP end) Or equipment of self-excited will light on;
3. Power source: The input power;
4. Gain selected switch: The switch has three gear, H is gap not attenuation, L for 20 dB attenuation、 M for 10 dB attenuation;
5. Power amplifier state selector switch: The switch has two gear, On one side is normal mode, On one side is energy-saving mode (When there is no users will greatly reduce the power consumption of the call)
6. USB+5V: Only as the USB interface charging terminal use。



**4 performance**

**4. 1 environment**

| NO.                 | Technology parameters |
|---------------------|-----------------------|
| Working temperature | -30°C~70°C            |
| Storage temperature | -30~70°C              |
| Relative humidity   | 95% (30°C)            |
| vibration           | 10Hz~30Hz, 0.38mm     |
|                     | 30Hz~55Hz, 0.19mm     |
| Vibration direction | Normal work direction |
| impact              | 6g                    |