User's Manual

for Wireless Repeater

Model No : JD65-XT (PCS 1.9G Pico Repeater)

JDTECK LTD

The JD65-XT model, a mobile communications repeater, is affected by neither configuration of the ground nor base station's signals. To improve call quality at small-sized area with radio wave interference (50 ㎡) or mobile communications service interference area, the repeater amplifies and transmits signals of base station and mobile station.

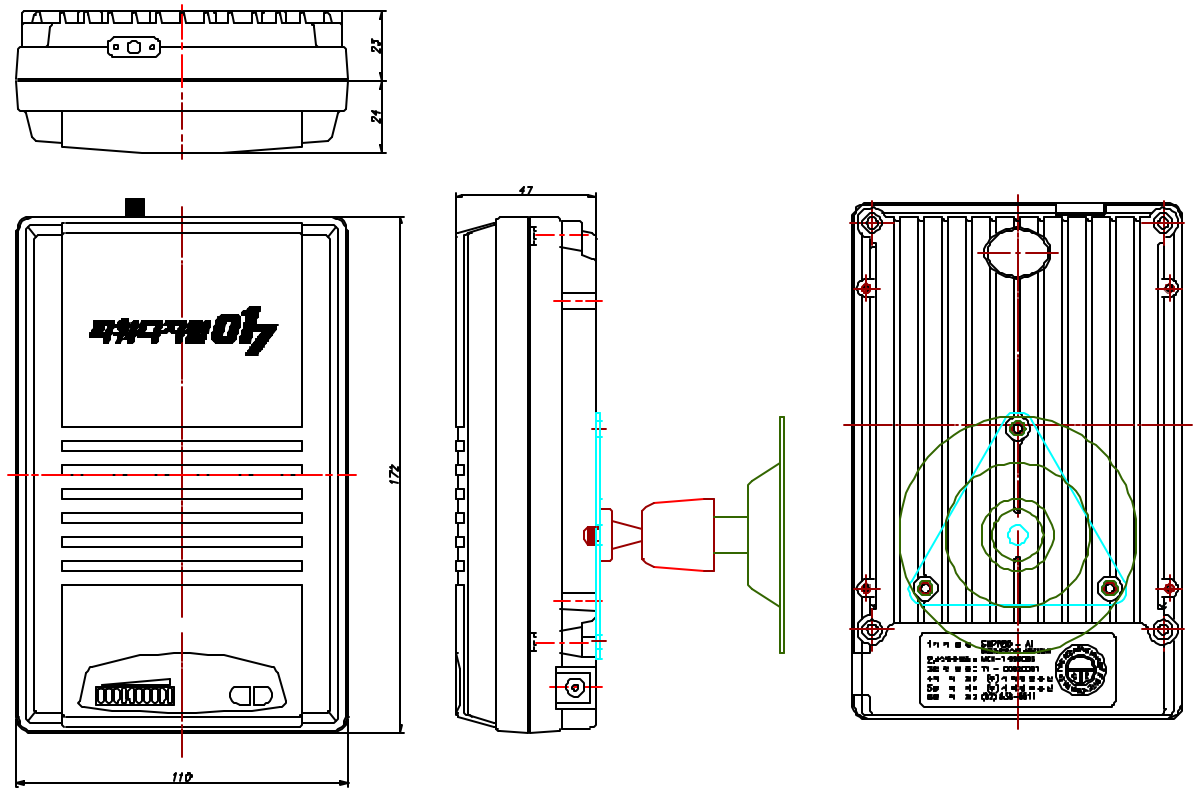
Being suitable to frequency bandwidth of customer, the repeater is to be produced enough to handle, install and maintain it with ultra small-sized model.

To maintain specific level of output signal, the repeater has built-in AGC and ALC circuits, which can automatically control gain of the repeater depending upon strength of input signals. In addition, to prevent the repeater from producing errors due to excessive from outside or oscillation phenomenon and having adverse effects on base station, the repeater runs auto shutdown functions, which switches the repeater's power automatically.

Feature & Functions

1. **AGC : Automatic Gain Control**
2. **ALC : Automatic Limit Control**
3. **Automatic output interception function (MUTE)**
4. **RSSI : Received Signal Strength Emission**
5. **Small size, light - weight**
6. **Simple installation & Maintenance**

Name & Function by each parts



- Front- **- Side -** **- Back Side -**

➢ **Repeater**

The repeater amplifies and transmits signals of base station and mobile station. The Patch antenna, as remote antenna, is built in front of repeater.

① **Donor ANT**
Donor Ant., which has a SMA(F) connector to be connected with the feeding cables

② **RSSI (Received Signal Strength Emission) Indicator**
The lamp at bottom in front of the repeater shows operation status. Green-colored lamp turns ON, on the basis of received signal

RX LED Status

-less than56dB: ●○○○○○○○○
-53dB±1.5 dB : ●●○○○○○○○
-50dB±1.5 dB : ●●●○○○○○○
-47dB±1.5 dB : ●●●●○○○○○
-44dB±1.5 dB : ●●●●●○○○○
-41dB±1.5 dB : ●●●●●●○○○
-38dB±1.5 dB : ●●●●●●●○○
-35dB±1.5 dB : ●●●●●●●●○
-32dB±1.5 dB : ●●●●●●●●○
-More than 9dB: ●●●●●●●●●

③ **MUTE (Auto Shut Down)**
Mute prevents abnormal output from being radiated by reading strength of output signal at emission of abnormal output. It is shut down against more than +9dBm signal automatically.

- MUTE LED (Red Colored Lamp) : ON for a 5sec and OFF for a 2sec, repeatedly
- RSSI LED (Green Colored Lamp) : OFF

④ **PWR**

Exterior adapter having AC 110-220 V input supplies DC 7 V power to the repeater to run active circuits. LED on

⑤ **DC Jack**

DC Jack is a terminal to supply required powers into repeater through the power supply adapter.

⑥ **Patch Antenna**

Patch Antenna, which can forward the RF signal from base station to cellular subscriber station, receive the signal from cellular subscriber station

- **Power Supply Adapter**

Exterior adapter having AC 100– 240V input supplies DC 7 V power to the repeater to run active circuits.

- **RG400 RF Cable**

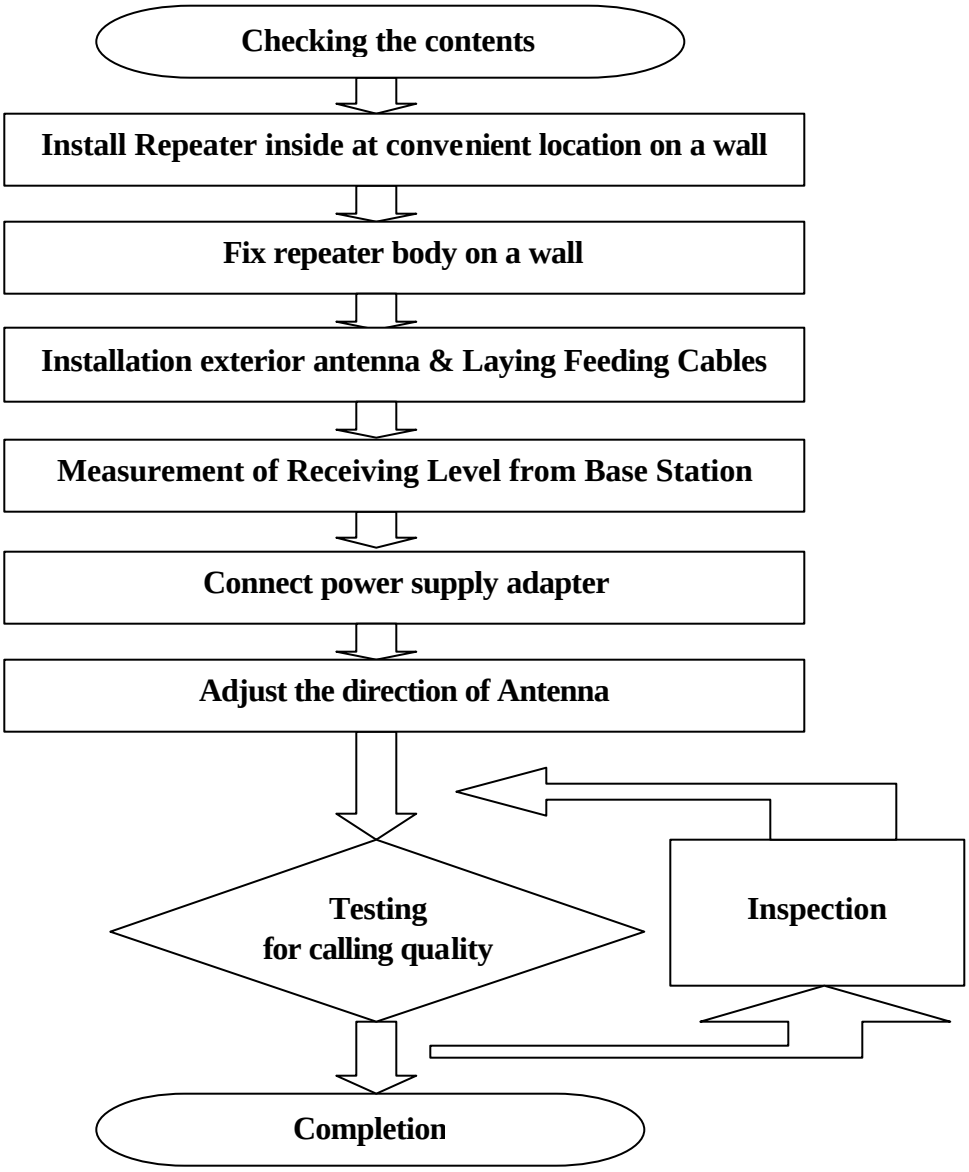
RG 400 RF Cable, which is used for connecting with feeding cable coming from Donor antenna.

- **Bracket**

The bracket is used for fixing the repeater on the wall.

How to install the system

Typical Installation Instructions



- **Checking the contents**

- **Put the repeater at the place where to install it**

- **Install Repeater inside at convenient location on a wall**

- **Installation Exterior Antenna & Laying Feeding Cables**

- **Measurement of Receiving Level from Base Station**

  1) Connect feeding cable, which has been connected with directional antenna for base station, with input of spectrum analyzer.

  2) Set measurement environment of Frequency, Span, BW and Amplitude, etc of the spectrum analyzer.

  3) Verify Channel Power value of input signal.

- **Connect to RG 400 RF Cable**

- **Connect power supply adapter**

  Caution: Make sure 120V available to connect power transformer (do not power up)

- **Adjust the direction of Antenna**

  To improve calling qualities, adjust the direction of Patch Antenna in front of body.

- **Testing for calling qualities**

User Attention

- **Do not open the case of repeater**
- **Do not excessive pressure to Repeater.**
- **Please use a rated voltage.**
- **The repeater must have been installed considering environmental factor.**

■ Troubleshooting

1) The power LED at the front turns OFF

Causes	Auction
Power cable of the power supply unit has not been connected.	Check connection of power system
Failure of the LED	Replace the LED

2) The repeater transmits no signal

Causes	Action
Coaxial cable connecting the repeater and measuring system is defective	Replace coaxial cable
Power system of interior of the repeater has not been connected.	Check power connection of PCB of interior of the repeater
Auto shutdown	Check a failure of the repeater and input of wrong signal into the repeater

Specifications

Electrical Specifications	
Frequency Range	FWD: 1930 ~ 1990MHz, RVS: 1850 ~ 1910 MHz
Gain	50 ± 2 dB
Gain Flatness	£ 4.5 dB (@ 60 MHz BW)
Frequency Stability	£ ± 0.03 ppm
ALC Range	30dB
Input Level (max)	-120 ~ -40 dBm
Output Level (max)	10 dBm / Total
Shutdown Level	14 ~ 16 dBm/Total@1FA
Tx/Rx Isolation	³ 85 dB
Noise Figure	≤ 5 dB
Spurious Emission	≥29dBc@±885KHz
	≥34dBc@±1.98MHz
VSWR	£ 1.5:1
Propagation Delay	£ 1 us
Control	No Control Interface
Impedance	50 Ω

Mechanical Specifications	
Operating Temp.	-10 ~ +50 °C
Cooling	Convection
Input/Output Connector	SMA (Female)
Power	7 V DC / 100 ~ 240 V AC
Dimensions (W x H x D)	180x120x50 mm
Weight	800 g