Taiwan Coiler International Corp.

In-Building Repeater for iDEN System

MODEL TG-806

User Manual

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Main Unit

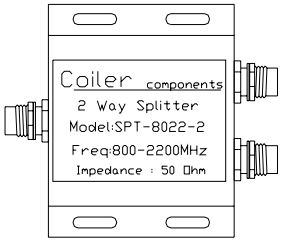
Accessories

1. Power Adaptor (12V/1.5A)

2. Outdoor Antenna (Option)

3. Outdoor Antenna (Option)

4. Splitter (Option)



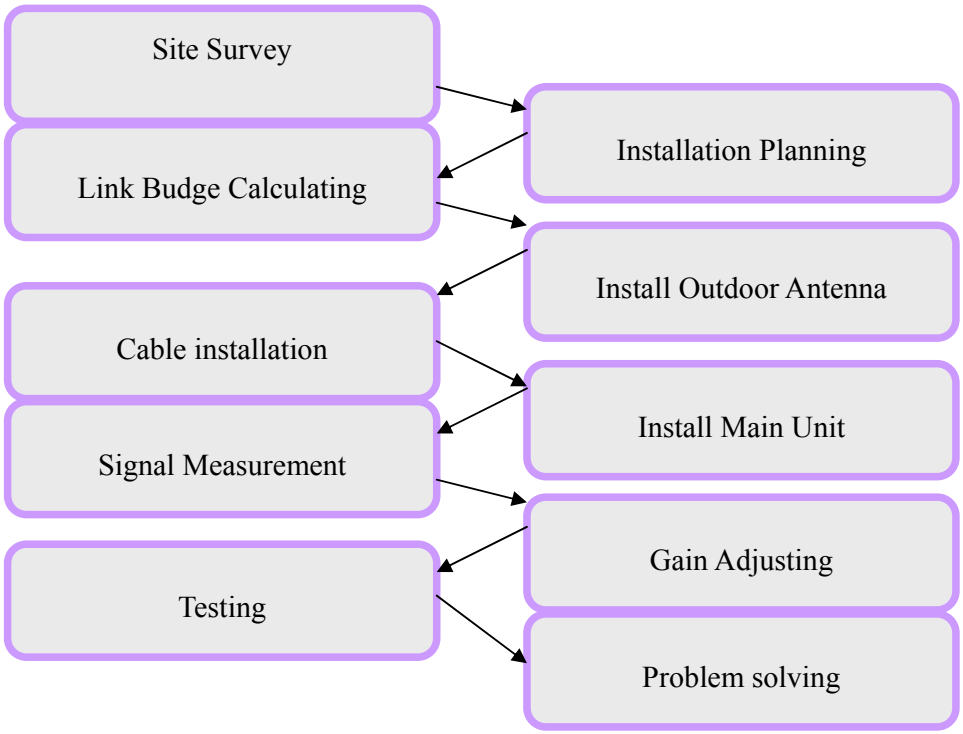
5 Cable (Option)

INSTALLATION CAUTIONS

1. The equipment is designed to efficiently improve weak RF signal in the area.
2. The Signal source will directly affect the efficiency of the indoor service range, so that you should use caution on the location of setting up the outdoor antennas.
3. The equipment is a two-way signal amplifier that requires (outdoor antenna) attention to the isolation between the input and output to avoid the interference. While setting up, please widen the distance between the indoor and outdoor antennas. (At least 70dB isolation)
4. The equipment is gain adjustable for uplink/downlink and the end-user can adjust the unit for the best condition.
5. The antenna lead from the outside antenna signal should be connected on the inside to the input side of the equipment. The outdoor signal level should keep at least on -80dBm, and never exceed +15dBm.
6. Making the Link budget before setting up (Note 1)
7. For iDEN system, choose 8D or RG8U, 50OHM; cable or better for low loss.

Note 1: Link budget means deducting the return lose of cable, connector, and splitter, if used, from outdoor antenna as well as add the gain of repeater and antenna referred to as the indoor service range. This can be the estimation of service range before construction. If the link budget data is negative, place a pre-amplifier, higher powered antenna, lower loss cable.

INSTALLATION PROCEDURE

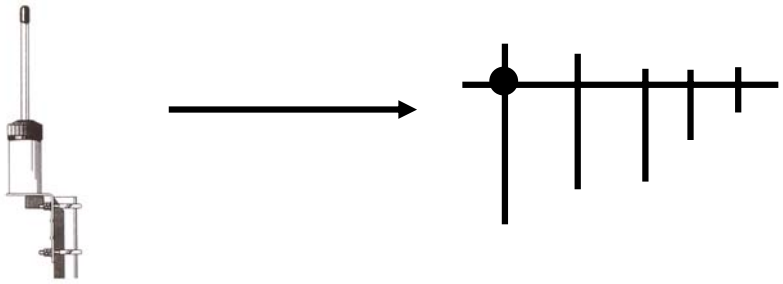


INSTALLATION INSTRUCTIONS

Inspect Environment

1. Move to the chosen location where setting up the outdoor antennas and test for signal by mobile test equipment or spectrum analyzer enable to choose the best location as well as confirm signal strength.

2. It is recommended that the best outdoor signal is -65~-70dBm. If the indicated signal strength is below -90dBm, we recommend the use of a YAGI antenna for signal acquisition.
3. We do not recommend setting up the outdoor antenna on the top of a building. That location may cause an unsettled signal and possible same frequency interference to the amplifier and portable radio units.
4. The location for the outdoor antenna should avoid obstacles, i.e. high mountain, high building, signboard…etc.
5. While using a YAGI antenna, check for the best signal source and point to the right direction of signal source.



INSTALLATION PROCEDURES

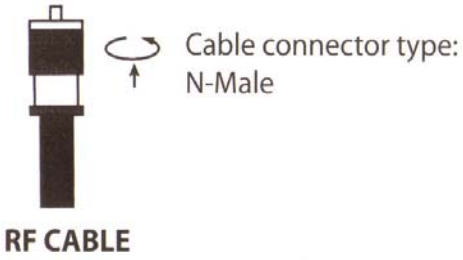
1. ANTENNA

   Install on the **mast**

   or Install on the **fixed roof wall section**

2. CABLE

   Spread the cable along the wall and enter the building by the conduit connected to the outdoor port. Use a clamp or U type ring. Cover the connection between cable and connector with waterproof tape to keep from water intrusion. If the length of cable is acceptable, make a circle on the end of outdoor antenna enable to avoid the rain leaking into the connector along the cable.



Indoor equipment and antenna set up

INSTALLATION ILLUSTRATION

1. Choose a suitable indoor location to install the repeater
   Place on ceiling or on the wall

   Place indoor antenna at least 2 meter distance from ground enable to get better service range; The location should be placed in the center of the building floor to be serviced by the unit.

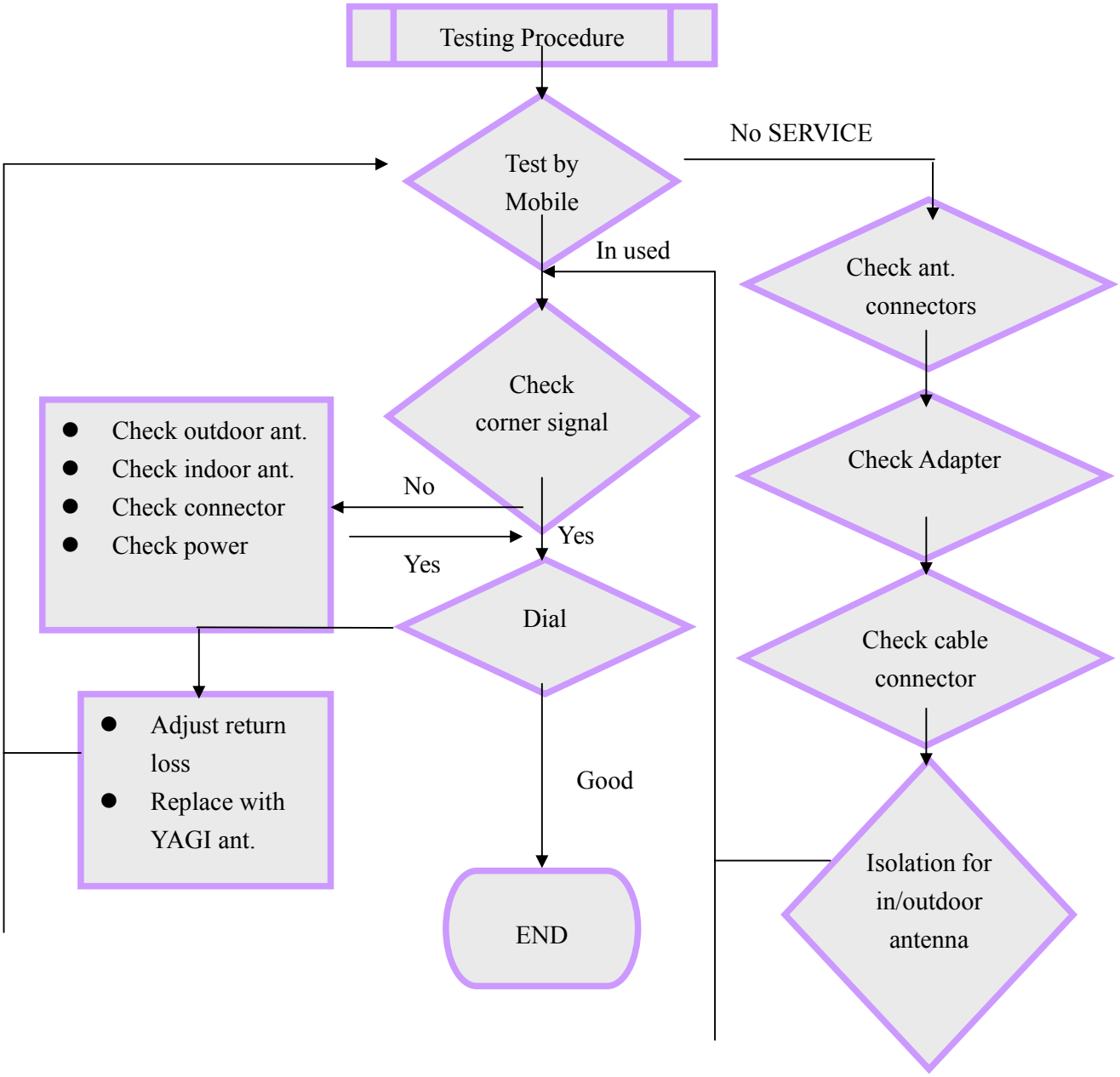
2. Turn on the power after all the connections have been checked.
3. Turn on the mobile radio to test the system. Adjust the output power to the environment. It is not necessary to do that if everything is in normal. (Repeater's default setting is 0dB)
4. Any interference or other noise may indicate the output power is too strong. Adjust for the best condition.

TG-806 Gain Adjustment Method

1. View the side of TG-806. Two switches, one on each side. Adjust the Gain for UPLINK and DOWNLINK individually.

2. Refer to the illustration above. Adjust attenuation by the included screwdriver to change the gain (0~21 dB).
3. It's not necessary to shut down power while you adjust the attenuation.
4. To turn one full circle clockwise (360°) would be decreased 7dBm gain; two full circles (720°): 15dBm; three full circles (1080º): 21dBm, at most 21dBm.
5. It's set full gain mode when it leaves the factory.

TESTING


Testing Procedure
Test by Mobile
No SERVICE
In used
Check ant. connectors
Check corner signal
Check Adapter
Check outdoor ant.
Check indoor ant.
Check connector
Check power
No
Yes
Yes
Dial
Check cable connector
Adjust return loss
Replace with YAGI ant.
Good
Isolation for in/outdoor antenna
END

Q&A

Q1. Why is there still no signal after installation the equipment?

A1. Please check the voltage of output power to see if it is below DC12V.

2. Are the connectors of indoor antennas loose?

3. Are the connectors for coaxial cable good?

4. Whether the signal of the outdoor antenna is good.

5. Are the connectors for the outdoor antennas good?

6. Is the CABLE type suitable?

Q2. Week signal in corner or certain distance from the antenna

A1. At least keeping RF signal from outside (-85dBm), the interior should be-60~-70dBm)

2 Over adjustment of the return loss of repeater?

3. All the connectors are correct?

4. Is power below 12VDC?

5. Change the location of in/outdoor antennas.

6. CABLE length is too long.

7. Is the CABLE type not suitable?

Q3. Signal is not easy to get through after installation

A.1. The isolation for in/outdoor antenna is bad and cause interference. Please adjust the distance of antenna or return loss of repeater.

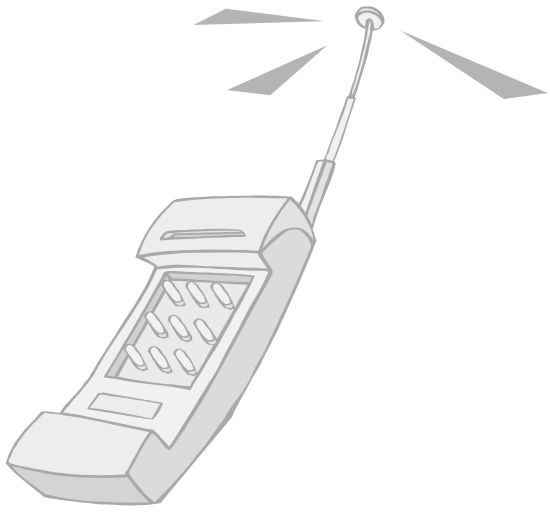
2. When outside signal is week, please replace with YAGI antenna.

3. CABLE length is too long

Q4. The signal is not stable after the TG-806 is on.

A1. The isolation for in/outdoor antenna is bad and cause interference. Please adjust the distance of antenna or return loss of repeater.

2. Check if the insulation for the cable is broken?



INSTALLATION ILLUSTRATION