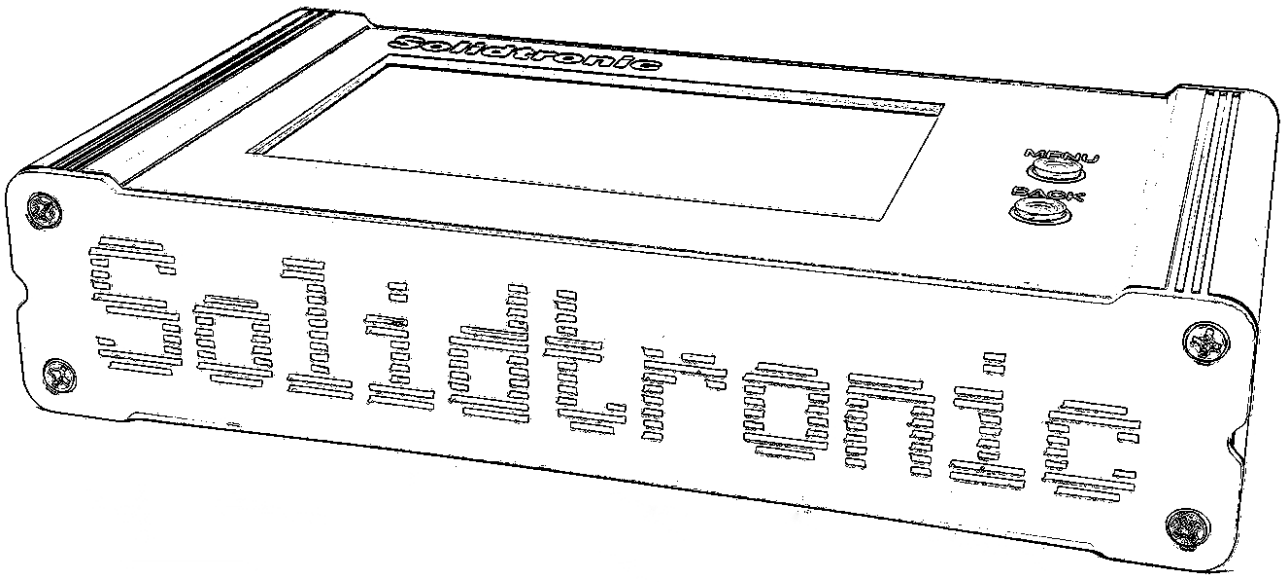
Radio Over IP Network Gateway

ST-RoIP5+D/W/R-Kirisun

User's Guide



This RoIP Gateway must be powered by the package bundled AC adapter! If a wrong voltage AC adapter is plugged in to this RoIP Gateway, it is damaged immediately!

Important Notice

Thank You Notice

Thank you for purchasing ST-RoIP5+D/W/R Series Radio-Over-IP Network Gateway. Please read this User's Guide carefully before putting ST-RoIP5+D/W/R into operation. Support for the ST-RoIP5+D/W/R is available by email. Please direct all questions via email to ***support@solidtronic.com***. Your question(s) will be answered promptly.

Electrical shock hazard

- Never attempt to connect the unit to any power network other than one for which it was intended.
- Do not open the housing of the units.
- Disconnect the unit from the external power supply and from all other devices if a fault occurs.
- Install the unit only in a dry place protected against the elements.
- If you are uncertain about the safe operation of the unit, shut it down immediately and secure it to prevent any unauthorized start-up. Safe operation is no longer possible, for example,
  - if damage is visible to the unit or the cables,
  - if the unit no longer operates correctly,
  - if objects have penetrated inside the unit,
  - after long storage under improper conditions

Have the system checked by qualified, specialist personnel in such cases.

Installation and operation

- Before installing or operating the system, ensure that you have read and understood the documentation for other equipment connected to the unit. These contain important safety notices and information concerning permissible applications.
- Perform only the installation and operating work described in this guide. All other work beyond this may lead to injuries to persons and damage to the system or other equipment.

Repairs and maintenance

Never open the housing of the ST-RoIP5+D/W/R. The unit contains no parts which you can repair or replace. Ensure that only qualified, specialist personnel (electrical technicians) are permitted to carry out maintenance or repair work.

Disclaimer

- This product is used to link up the radio networks and IP networks. Its operation and performance rely on the broadband network connections via private and/or public networks. Due to the stability and reliability of these networks, this product may not be able to link up all the networks connected without any interruptions. Therefore, it is not recommended to use this product in an emergency system or a communication system with zero-failure.
- This product can bridge and extend radio networks all over the world. Please consult your local regulations in order to use this product legally.
- Customers and/or users are taking full responsibilities and all risks in using this product. We are not responsible for any direct or indirect losses caused by, but not limited to, communication failures as a result of product failure or network problems.

Contents

Preface

The ST-RoIP5+D/W/R Series Standalone RoIP Gateway is the next generation radio over IP gateway. It is designed to interconnect PoC platforms with any radio systems including conventional trunked analog FM, ETSI DMR, ETSI TETRA, APCO P25 FDMA, NXDN...

The ST-RoIP5+D/W/R-Kirisun Standalone RoIP Gateways are equipped with the 4th generation Super Dynamic Intelligent Digital Tracking System(iDats-4), PoC-COS/ COR PTT Control Technology, Radio-COS/ COR PTT Control Technology and 2nd generation Adaptive Digital Filter(ADF-2), the Solidtronic Optimized Android OS with the Kirisun Press2Talk PTT/PoC app, brings you the fast and stable push-to-talk communication over any devices, anytime and everywhere over the world!

Key Features

The key features of ST-RoIP5+D/W/R-Kirisun is:

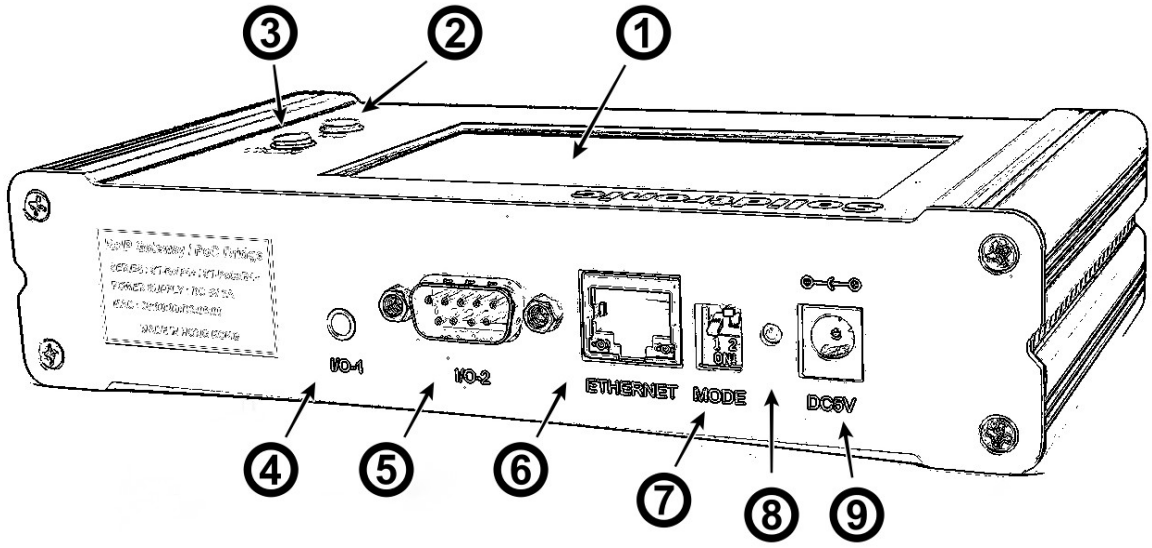
- **Build-in ARM CPU standalone Radio-over-IP Network Gateway**
- **Easy of Install, system setup and operation**
- **PoC-COS/COR PTT Control Technology**
- **Radio-COS/COR PTT Control Technology**
- **Very fast and stable PTT exchange performance by Super Dynamic iDats-4 PTT Control Technology**
- **ADF-2 technology supports 2-Way Radio Repeater System**
- **Stable Bandwidth 10/100-Base-T Ethernet Connection**
- **End of Transmission Roger Beep Alert for Radio Channel**
- **Solidtronic Optimized Android OS**
- **Pre-installed Kirisun Press2Talk PTT/PoC app**
- **Support different brands and different type radios**

Product Descriptions

Packing List

- ST-RoIP5+D/W/R-Kirisun Standalone RoIP Gateway x 1
- Ethernet Connection Cable x 1
- Radio Unit Connection Cable x 1
- This User's Guide x 1

Major Operating Controls, Terminals and Their Functions



1. LCD

This is a 4.3 inch touch screen LCD for displaying and on screen controlling the system.

2. BACK Button

This is the BACK button for back operation of Android OS and Apps.

3. MENU Button

This is the MENU button for pop up the Android OS setup menu and apps setup menu.

4. I/O-1 Terminal

This is a 3.5mm 4-pin terminal that is used to connect to a radio unit. The I/O-1 and I/O-2 cannot be used at the same time.

5. I/O-2 Terminal

This is a DB-9 Male terminal that is used to connect to a radio unit. The I/O-1 and I/O-2 cannot be used at the same time.

6. Ethernet Terminal

This terminal is used to connect to 10/100-Base-T IP network.

I/O-1 pinout

TIP : TX-Audio Output
1st Ring : PTT Output
2nd Ring : RX-Audio Input
Sleeve : GND

I/O-2 Pinout

Pin-1~4, 9 : Reserved
Pin-5 : GND
Pin-6 : TX-Audio Output
Pin-7 : PTT Output
Pin-8 : RX-Audio Input

7. Mode Selection Switch

DIP SW1 : Radio Unit PTT Control Mode Selection. OFF for PTT Mode 1. ON for PTT Mode 2.

DIP SW2 : Digital Interoperability Stabilizer Selection. OFF for 0.5 Second. ON for 2 Seconds.

Mode / Operation	PTT Control Method	
	DIPSW2 OFF (0.5 Second)	DIPSW2 ON (2 Seconds)
PoC → Radio	PoC-COS/COR & iDats-4	PoC-COS/COR & iDats-4
PoC ← Radio	Radio-COS/COR & iDats-4	Radio-COS/COR & iDats-4

The Radio-COS/COR and iDats-4 are working at the same time to support different type of radios. In case a mobile radio is connected to the gateway by using the connection cable with Radio-COS/COR, the PTT control signal from the Radio-COS/COR pin is the highest control priority. If a handheld radio is connected to the gateway by using a normal connection cable, the PTT control will be handled by the iDats-4 DSP.

8. Status Indicator

This indicator is used to indicate the running status of the RoIP Gateway.

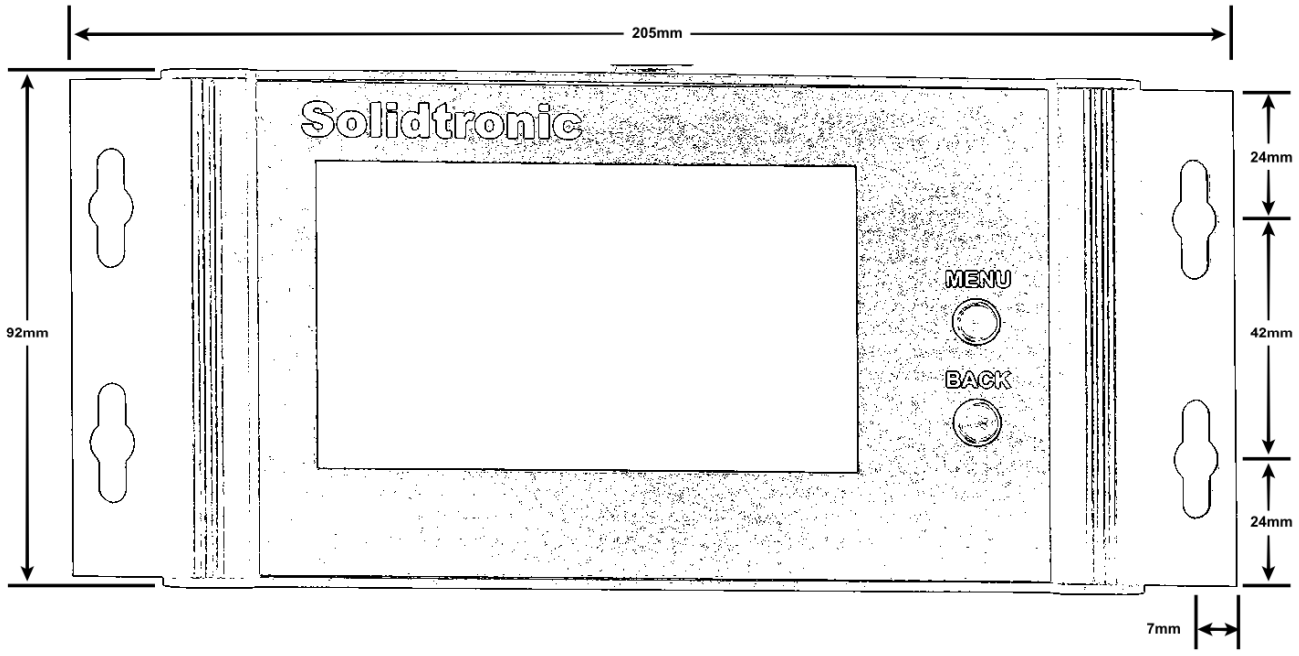
GREEN COLOR BLINKING : Standing by calls from PoC channel and 2-way radio channel

RED COLOR LIGHT UP : PoC channel and radio channel interoperability

9. DC5V Terminal

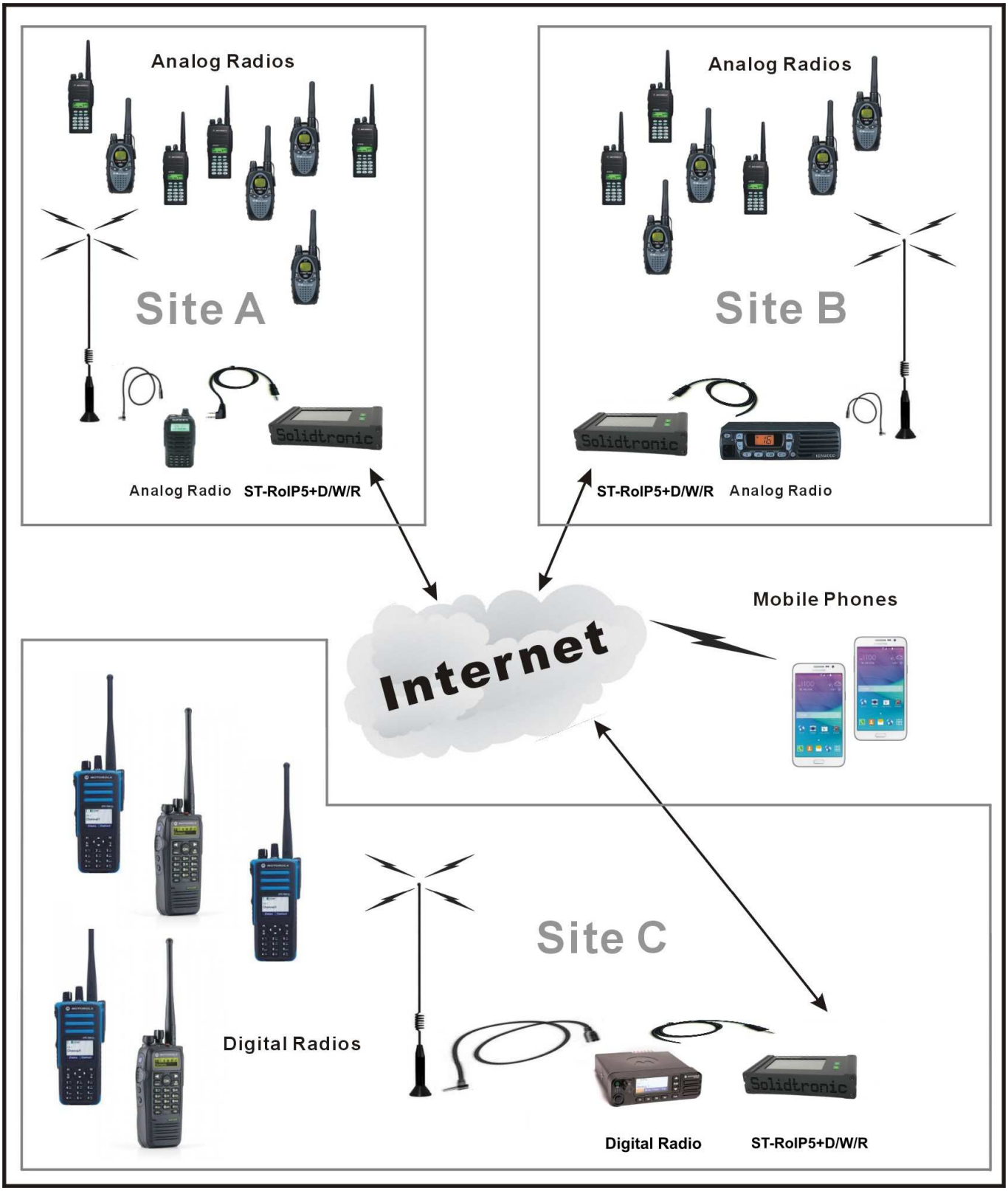
This terminal is used to connect to AC Adapter.

Dimensions (ST-RoIP5+W Series and ST-RoIP5+R Series)



Installation

Simple System Connection Diagrams



Note: ***The connected Radio Units MUST be connected with external antennas and the minimum distance between the RoIP system equipments and the antennas are 3 meters to reduce the interference.***

The minimum distance between the RoIP system equipments and the user radio equipments are 1 meter to reduce the interference.

System Setup

- Connect the Radio Unit to an external antenna.
- Connect the ST-RoIP5+D/W/R to a Radio Unit by using a right connection cable.
- Connect the ST-RoIP5+D/W/R to an IP network by using an Ethernet cable.
- Turn on the Radio Unit and adjust its volume to approximate 1/3 position of maximum level.
- Adjust the radio frequency and CTCSS on both Radio Unit and all other handhelds/mobiles.
- Connect the ST-RoIP5+D/W/R to power outlet by using the AC adapter to turn on the ST-RoIP5+D/W/R.

Setup PTT Control Mode of ST-RoIP5+D/W/R

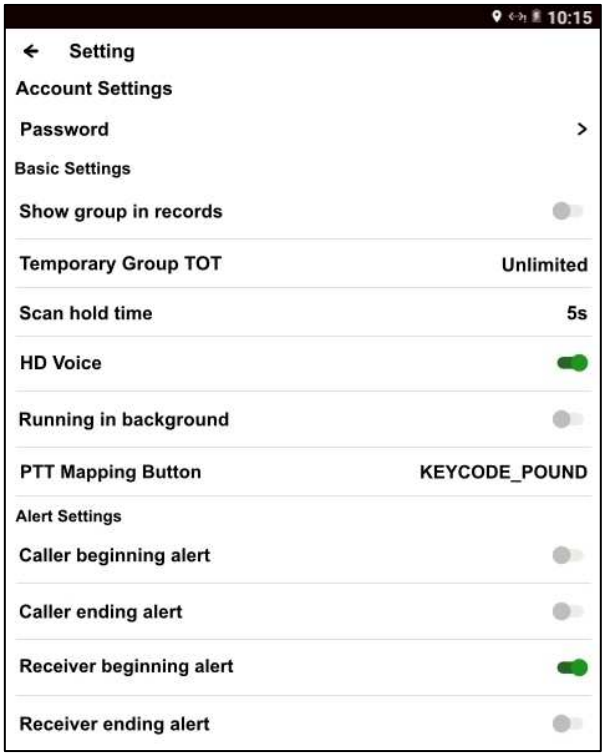
The ST-RoIP5+D/W/R ships with PTT Control Mode 1 for supporting the connected radio with the PTT pin embedded with MIC pin(such as Motorola). If the PTT and MIC are on separate pins(such as Kenwood), please set the **DIP SW1** to **ON** position.

RoIP Gateway Manager

- Run the **RoIP Gateway Manager** app.
- Slide the "**PoC to Radio Volume**" to adjust the volume level. The default settings is 11.
- If in need, click on the right-top menu icon and select the "**Android Settings**" item to setup Android system; or select the "**Update**" item to download and install the latest version of PoC app for this RoIP Gateway.
- The "**About**" item display the info of this RoIP Gateway Manager.
- After finish the setup, click on the "**Quit**" item to close this RoIP Gateway Manager app.

Setup Kirisun Press2Talk PTT App

Please add an account to the Kirisun **Press2Talk** app, and setup the app like the right picture.



- Run the **Press2Talk** app.
- Select a **Region** server, check on the "**Remember the password**" check box, add a user **Account** and **Password,** then click on **"LOGIN"** button for connecting to the server.
- Click on the [**MENU**] button or left-top **"Personal Info"** icon then select the **"Settings"** item to setup the Press2Talk app like the right picture.
- Click on the "**PTT Mapping Button**" item to map the PTT button. Use another radio to initiate a voice call to the radio channel, the RoIP Gateway connected radio receives the PTT call and delivers the call to the RoIP Gateway for mapping the PTT Button as "**KEYCODE_POUND**".
- Press on [**BACK**] button to exit setup.

Operations

When the system is installed, the Radio Unit and the apps are configured, the system is ready to use now.

Normal Operation
● Run Kirisun Press2Talk app. ● Select a talk group. ● The ST-RoIP5+D/W/R-Kirisun is standing by calls from other smartphones, 2-way radios from remote ST-RoIP5-Kirisun sites and local 2-way radios.

Enable/Disable Radio Channel Roger Beep Tone
● Set both DIPSW1 & DIPSW2 to OFF position. ● Use a smartphone Press2Talk app to make a PTT call to the Press2Talk group. ● Keep the DIPSW1 at OFF(Disable) position or set it to ON position(Enable). ● Set the DIPSW2 to ON position, then followed by setting it to OFF position to action the new setting. ● Release the PTT call from the smartphone Press2Talk app. ● Reset the DIPSW1 & DIPSW2 to normal operation positions.

Specifications

Power Supply		DC5V
Power Consumption		800mA (Typical)
Network Interface		Ethernet 10/100Base-T
CPU		ARM
Display		4.3" Touch Screen
Control Buttons		MENU and BACK
Communication App		Kirisun Press2Talk
Interoperability Activation Time		< 0.2 Second (Typical)
Digital Interoperability Stabilizer		0.2 Second(OFF) or 2 Seconds(ON) Selectable
Dimensions	Desktop Type	175(W) x 95(D) x 38(H) mm
	Wall Mount / Rack Mount Type	205(W) x 95(D) x 38(H) mm
Weight	Desktop Type	510g (Typical)
	Wall Mount / Rack Mount Type	530g (Typical)
AC Adapter	Input	AC100~240V
	Output	DC5V 2A

- *Weight and dimensions indicated are approximate.*
- *Specifications are subject to change without notice*.