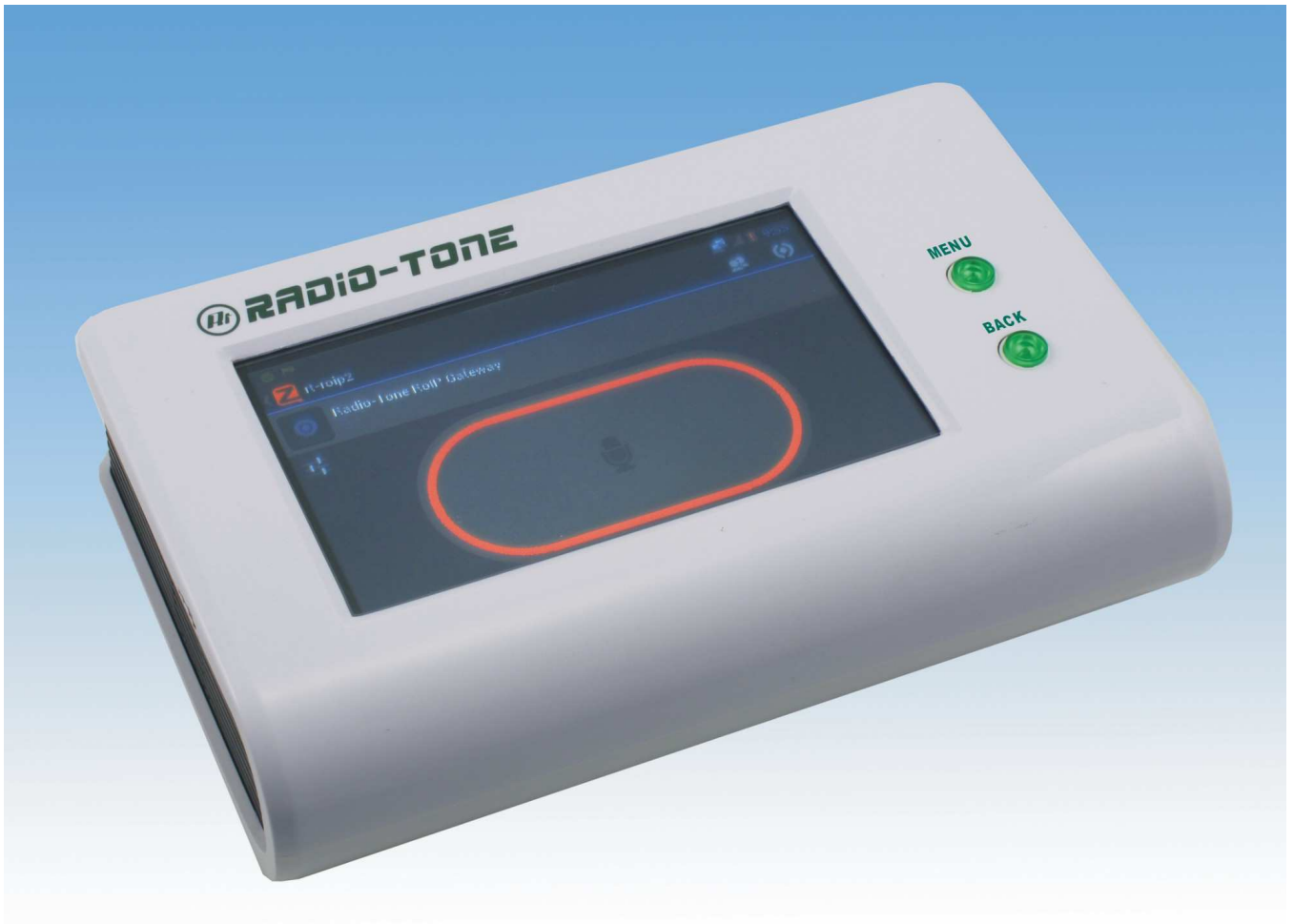# Radio Over IP Network Gateway

RT-RoIP2
User's Guide

Important Notice

Thank You Notice

Thank you for purchasing RT-RoIP2 Radio Over IP Network Gateway. Please read this User's Guide carefully before putting RT-RoIP2 into operation. Support for the RT-RoIP2 is available by email. Please direct all questions via email to ***support@radio-tone.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 RT-RoIP2. 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 RT-RoIP2 Radio-over-IP Network Gateway is the world's first standalone Zello Radio-Radio-Over-IP Gateway. It is a cost effective and excellent performance equipment for using to connect mobile phone and 2-way radio users, or bridge 2-ways radio systems across sites.

The RT-RoIP2 is equipped with the Radio-Tone Intelligent Digital Audio Tracking System(iDats), the Android 4.0 OS with 3rd party communication apps, Zello and Skype, and powered by an ARM CPU, brings you the fast and stable push-to-talk communication between anydevice, anytime and anywhere over the world!

Key Features

The key features of RT-RoIP2 are:

- **Build-in ARM CPU standalone Radio-over-IP Network Gateway**
- **Install in a second, no IT expert technique is required**
- **Very easy operation**
- **Very fast and stable PTT exchange performance by Radio-Tone iDats**
- **Embedded Android 4.0 OS**
- **Pre-installed Zello and Skype apps**
- **Support different brands and different type radios**

Product Descriptions

Packing List

- RT-RoIP2 Radio Over IP Network Gateway x 1
- Ethernet Connection Cable x 1
- Radio Unit Connection Cable x 1
- This User's Guide x 1

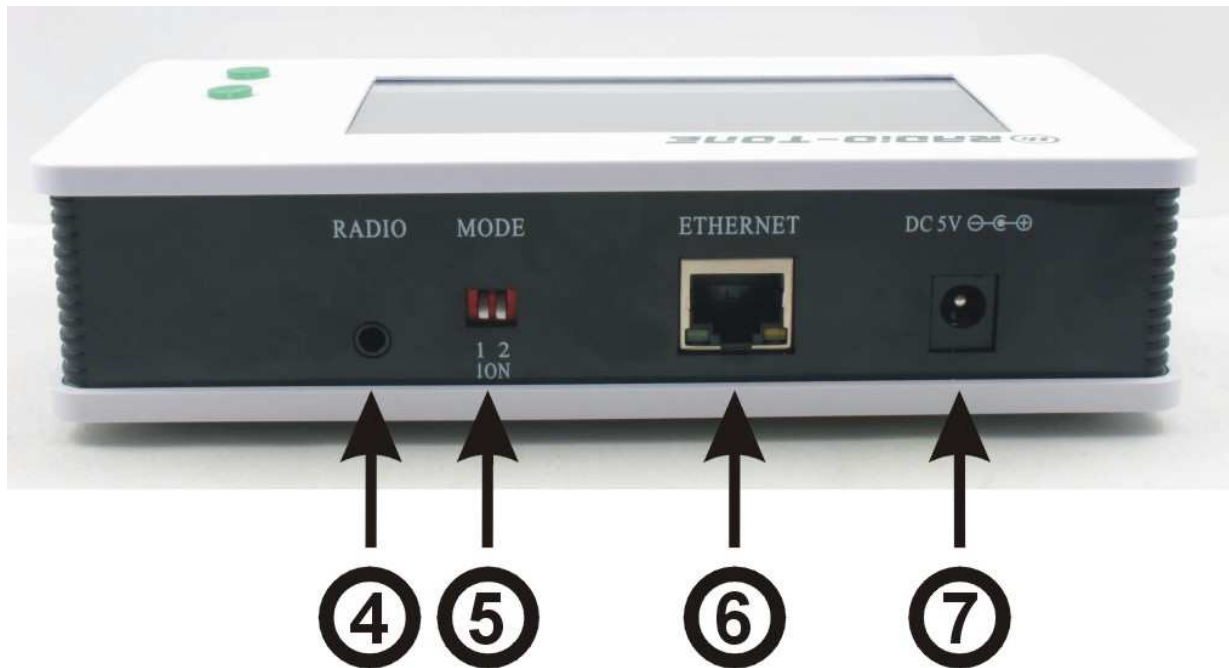## Major Operating Controls, Terminals and Their Functions

1. LCD

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

2. MENU Button

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

3. BACK Button

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

4. Radio Unit Terminal

This terminal is used to connect to a radio unit.

5. Mode Selection Switch

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

DIP SW2 : Carrier Handover Time Selection. OFF for <1/2 seconds. ON for 2 seconds.
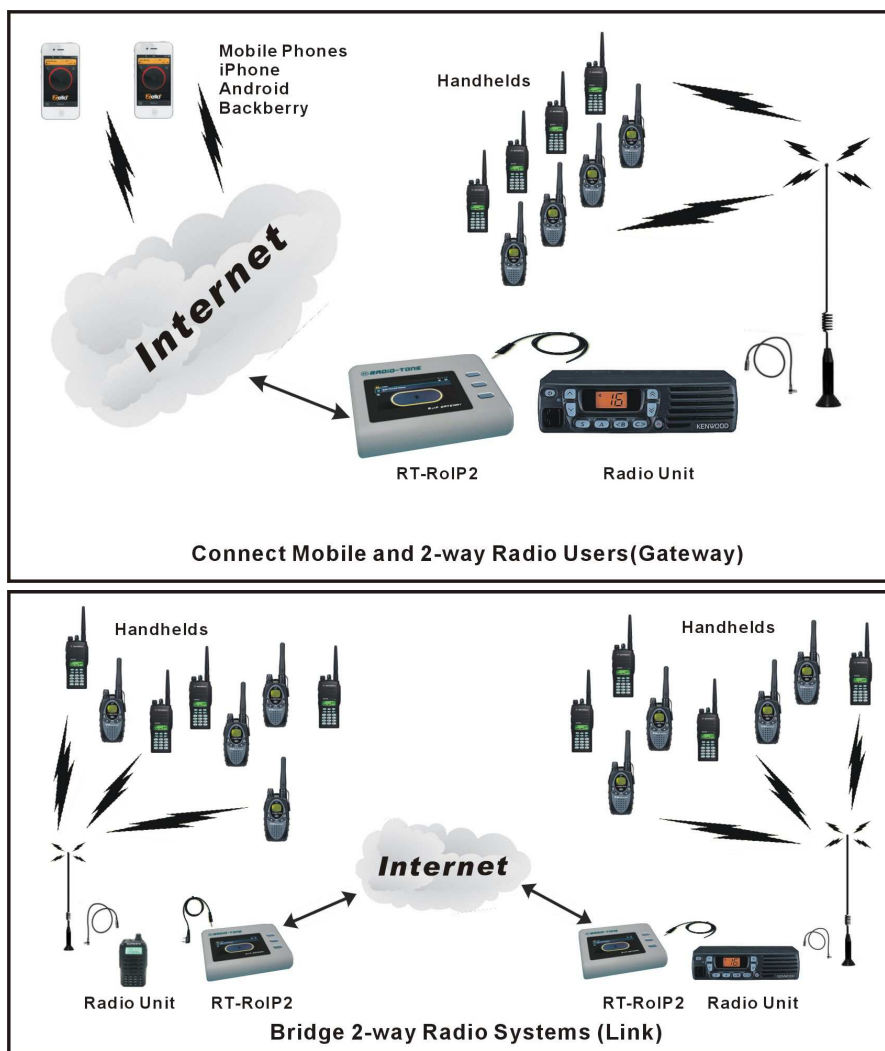
6. Ethernet Terminal

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

7. DC5V Terminal

This terminal is used to connect to AC Adapter.

Installation

Simple System Connection Diagrams

Connect Mobile and 2-way Radio Users(Gateway)

Bridge 2-way Radio Systems (Link)

Note: The connected Radio Unit MUST be used external antenna to reduce the TX RF signal affect to the system equipment.

- Connect the Radio Unit to an external antenna.
- Connect the RT-RoIP2 to a Radio Unit by using the bundled connection cable.
- Connect the RT-RoIP2 to an IP network by using the 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 RT-RoIP2 to power outlet by using the AC adapter to turn on the RT-RoIP2.

Setup PTT Control Mode of RT-RoIP2

The RT-RoIP2 ships with PTT Control Mode 1. For some radio units, like KG-UVD1P, they are required the PTT Control Mode 2 to let them work as Transmitter. Please set the PTT Mode switch to ON position to change PTT Control Mode to Mode 2.

Setup Zello App

The Zello app was preset with below settings by default. You just need to add a Zello account to operate. If the settings are changed, please setup again with reference to below steps.

- Run the **Zello** app
- Press the [**MENU**] button to pop-up the setup menu.
- Press the [**Options**] item to open the Options setup menu.
- Press the [**Alerts**] item.
  Uncheck all check boxes.
  Press the [**BACK**] button to exit.
- Press the [**Interface**] item.
  Only un-check below items:
  "*Lock screen orientation*"
  "*Auto-run on startup*"
  "*Show on incoming message*"
  Press the [**BACK**] button to exit.
- Press the [**Restrictions**] item.
  Only un-check the item of "*Show trending channels list*".
  Press the [**BACK**] button to exit.
- Press the [**Under the hood**] item.
  Press the [**Map**] icon to map the PTT key.
  Press the PTT button of a handheld radio to call to the Radio Unit connected to the RT-RoIP2, the PTT key value of 16 should be mapped.
  Only un-check the item of "*Enable push notifications*".
  Press the [**BACK**] button to exit.

Setup Skype App

Please follow below steps to setup Skype.

- Run the **Skype** app and add an Skype Account.
- Press the [**MENU**] button to pop-up the setup menu.
- Press the [**Settings**] item to open the Settings setup menu.
  Only check on below boxes:
  "*Skype Status*"
  "*Incoming Skype calls*"
  "*Receive calls from – Contacts only*"
  "*Answer calls automatically*"
- Press the [**BACK**] button to exit.

Operation

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

Zello Gateway and Link System

- Run **Zello** app
- Add contact(s) or channel(s)
- Press a contact or a channel for standing by calls.
- Now the RT-RoIP2 is standing by calls from other mobile phones, 2-way radios from remote RT-RoIP2 sites and local 2-way radios.

Skype Gateway System

- Run **Skype** app
- Press the [**Contacts**]
- Add contact(s).
- Press a user to make a connection
- Now the RT-RoIP2 will link the other RT-RoIP2 sites to allow all 2-way radios communication.

Specifications

Power Supply	: DC 5V
Power Consumption	: 800mA (Typical)
Ethernet	: 10/100 Base-T
CPU	: ARM
Display	: 4.3 inch Touch Screen LCD
Control Buttons	: MENU and BACK
Pre-installed Communication Apps	: Zello, Skype
Carrier Detect Activation Time	: <1/2 Seconds
Carrier Handover Time	: <1/2 Seconds or 2 Seconds selectable
Dimensions	: 160(W) x 100(D) x 40(H) mm
Weight	: 450 g
AC Adapter	: Input AC100-240V, Output DC5V 2A

- *Weight and dimensions indicated are approximate.*

- *Specifications are subject to change without notice.*

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