Link Mobile Gateway User Guide

A ProVIEW System Component

Omni-ID office locations: US | UK | China | India | Southeast Asia | Germany

1. CONTENTS

2. INTRODUCTION

ABOUT THIS DOCUMENT

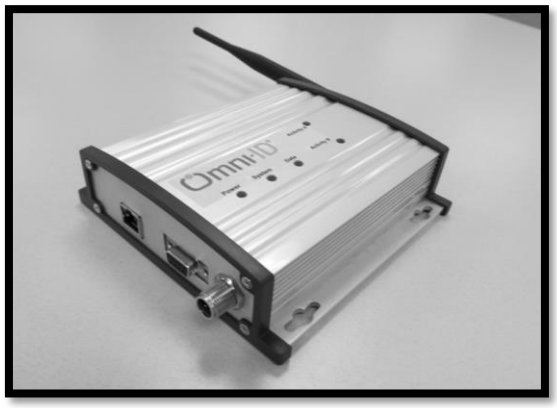
This Guide describes the setup and configuration of the Omni-ID Link Mobile Gateway and documents its characteristics. For instructions on using the Gateway with one of Omni-ID's various software offerings, please refer to the documentation provided with the specific application.

RELATED PRODUCTS

The Omni-ID **Power 415** operating at 433 MHz and 900 MHz is a rugged active tag capable of tremendous performance while tracking assets in harsh environments. Overmolded for maximum durability and providing flexible mounting options, the Power 415 includes enough battery capacity for at least 5 years of duty in most applications. Radio communications penetrate snow/moisture and provide exceptional distance.

An intrinsically safe version (ATEX/IECEx certified) is also available for use in hazardous environments.

As part of Omni-ID's ProVIEW System Solution, the **View 3** and **View 4** tags provide an electronic, reusable option to replace paper labels in cyclic applications. Featuring electrophoretic displays, a rugged form factor and advanced RF tracking capabilities, these provide an ideal solution for durable, repetitive labeling in manufacturing and logistics applications.



The **Link Gateway** is the distributed brain of the asset management system. It communicates with the Power 400 and View Tags to enable the relay of key data points back to the central server. It also writes information and manages events for assets and operators in the process.

The **Link IEEE Gateway** provides the same power and capabilities as the standard Gateway. However, rather than utilizing Omni-ID's proprietary communication protocol, this model conforms to the industry standard IEEE 802.15.4f protocol used in the Power 415 tags.

REGULATORY APPROVALS

CERTIFICATIONS

Standard	*Description*
EN55024:2010 Product Family Standard Immunity	Information Technology Equipment- Immunity Characteristics-Limits and Methods of Measurement
EN55022:2010 & FCC Part 15 Product Family Standard Emissions	Information Technology Equipment- Radio Disturbances Characteristics-Limits and Methods of Measurement
EN55022:2010 & FCC Part 15	Radiated Emissions
EN61000-4-2:2009 Basic test standard	Electrostatic Discharge Immunity
EN61000-4-3:2006+A2:2010 Basic test standard	Radiated Electromagnetic Field Immunity
CAN/CSA- CISPR 22-10/ICES-003 Issue 5	Radiated Emissions
VCCI V3/2012.04 or VCCI-3/2013.04	Radiated Emissions
CNS:13438:2006	Radiated Emissions

FEDERAL COMMUNICATIONS COMMISION INTERFERENCE STATEMENT

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.

- Increase the separation between the equipment and receiver.

- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

- Consult the dealer or an experienced radio/TV technician for help.

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.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

INDUSTRY CANADA STATEMENT

This device complies with Industry Canada license-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.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropic radiated power (e.i.r.p.) is not more than that permitted for successful communication.

EUROPEAN R&TTE DIRECTIVE 1999/5/EC STATEMENT

The radio module enclosed in this product is compliant with ETSI EN 300 328 V1.7.1 (2006-10), EMC, EN 301 489-17 v2.1.1 (2009-02) and the Basic Safety Assessment (BSA) EN 60950-1:2006 (2006-06) and is subject to a Notified Body Opinion. The modules are approved for use with the antennas listed in the following table.

Brand	Model Number	Description	Gain (dBi)
COMTELCO	BS450S-B	Vertical Base Station Antenna	4.65
COMTELCO	Y2243-B	YAGI ANTENNA	9.15
Antenna Factor	ANT-433-CW-RH	Helical Whip Antenna	-5.6
Antenna Factor	ANT-433-MHW-SMA	Dipole Antenna	1.2
Omni-ID, Inc.	CP10636	Horizontal Polarized Dipole Antenna	2.15

3. THE LINK MOBILE GATEWAY

As part of Omni-ID's ProVIEW and Asset Track system offerings, the Link Mobile Gateway provides a reliable, portable solution for communicating with Omni-ID's families of Power and View tags. Capable of supporting both the Omni-ID on air protocol for View tags as well as the IEEE 802.15.4 protocol for Power tags, the Gateway is perfect for many applications. Whether using the simplicity of the USB interface or the wireless convenience of Bluetooth, the Mobile Gateway can get you up and running quickly and easily.

COMPONENTS

The Link Mobile Gateway ships with the following components:

- The Gateway unit itself, including an internal lithium-polymer battery
- An optional belt clip along with two mounting screws
- A 1/4λ dipole whip antenna
- USB cable

POWER

The Gateway can operate either from its internal battery or from a USB port. When plugged into the host computer, the unit will operate from the power supplied via the USB interface. Additionally, it will charge the internal battery. When disconnected from the USB port, the device will operate from the internal battery thereby allowing wireless operation via the Bluetooth interface. The Mobile Gateway internal battery is capable of operating for 11 hours of continuous usage before recharging is needed.

USER INTERFACE

As shown in the figure below, the Mobile Gateway user interface consists of four multi-function LED indicators and two multi-purpose buttons. The use and meaning of these is described in the following sections.

LED INDICATORS

Function	Symbol	Behavior
Power		Blinks green when unit is powered up Blinks red when battery is low, solid red when battery is charging
USB		Solid green when connected via USB
RF Activity		Blinks green when receiving on the 433MHz radio Blinks red when transmitting on the 433 MHz radio
Bluetooth		Blinks red when device is discoverable (pairing) Solid green when paired with computer or tablet

In addition to their individual uses, the four LED's can work together to indicate the state of charge of the battery. For example, when the battery is half charged, the display would look like this when in battery mode:

Refer to the following section on the battery button for instructions on placing the display in this mode.

BUTTON FUNCTIONS

Function	Symbol	Usage
Power		If Off, press to turn on. If On, press to turn Off *Note: the system will automatically turn on when connected to USB*
Battery		Press and hold to display the battery state of charge as described in the previous section
Bluetooth Pairing		To make the unit discoverable as a Bluetooth device, press and hold both buttons simultaneously until the Bluetooth LED begins to flash red

SOFTWARE SUPPORT

The Link Mobile Gateway is designed to work with Omni-ID's suite of software offerings:

- **Omni-ID ProVIEW Solutions** for Manufacturing Material Flow Management
- **Omni-ID Asset Track** for Enterprise Asset Management
- **Omni-ID TagLab** development tool

Specific drivers and support files needed for the device will be installed as part of these software packages.

4. SPECIFICATIONS

RADIO SPECIFICATIONS (RM433V2)

The Link Mobile Gateway incorporates Omni-ID's RM433V2 433 MHz radio module. Its characteristics are described in the following table:

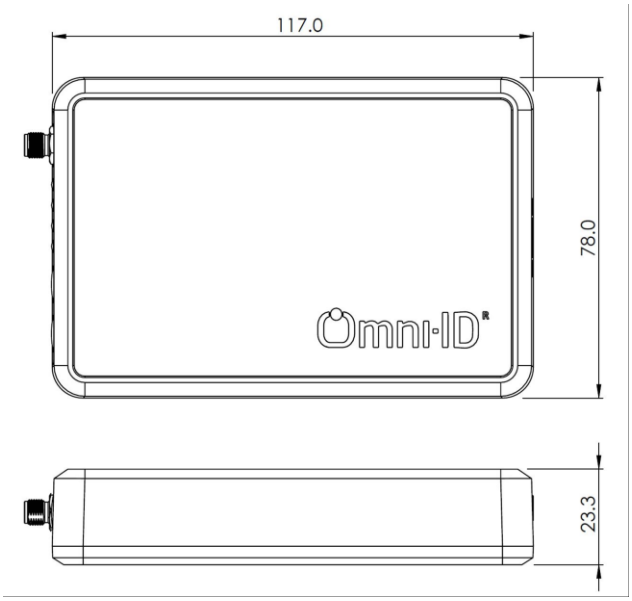
Typical RF Characteristics		*Notes*
Rx Sensitivity	-100 dBm	Nominal for .1% BER
Tx Power	+5dBm	433.164 – 434.784 MHz
Max. Input Signal	10 dBm	
RSSI Range	-100 to -10 dBm	
RF Port Impedance	50 ohms	433.164 – 434.784 MHz
VSWR (max)	2:1	433.164 – 434.784 MHz

ENVIRONMENTAL SPECIFICATIONS

Operating Temperature	**-20 to +45°C**
Ingress Protection	IP65
Ruggedness	Withstands 4' drop to concrete
Warranty	1 year

PHYSICAL SPECIFICATIONS

Material	**ABS Plastic Enclosure**
Size (mm)	117.0 x 78.0 x 23.3
Size (in)	4.61 x 3.07 x 0.92
Weight (g)	183
Weight (oz)	6.5



5. CUSTOMER SUPPORT

Information about Omni-ID's complete line of RFID products can be found on our website: **www.omni-id.com.**

Additional support is available by phone: **+1 (585) 713-1000** or email: **support@omni-id.com**.