



# GigAccess™ 900 and 900A Self-Install RSU User Guide



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## 1. Introduction

### 1.1. General

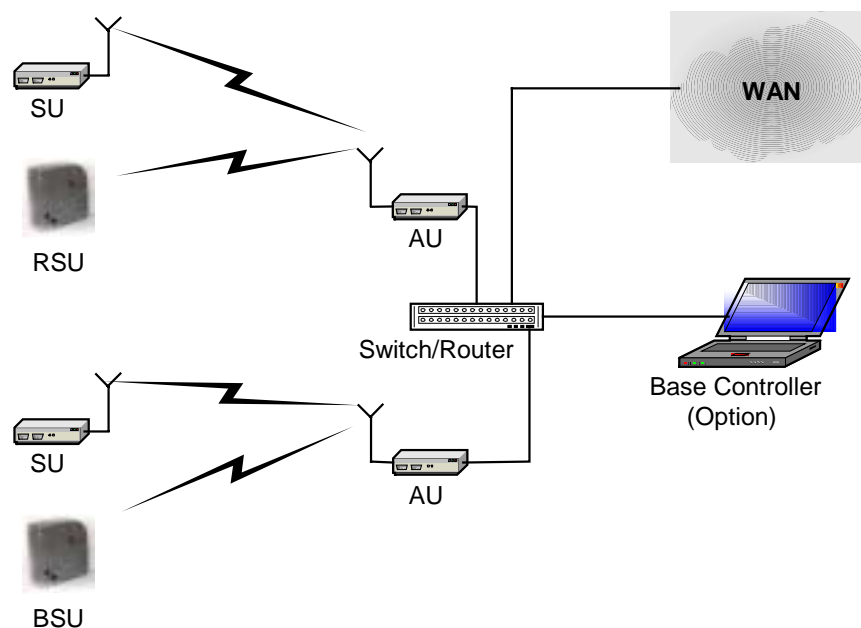
Congratulations on your purchase of the WaveIP GigAccess™ 900 self-install Business/Residential Subscriber Unit (RSU).

This document describes how to install and use your subscriber unit to obtain wireless high-speed Internet access. You can connect your RSU both to a computer and to a local area network (LAN) through the integrated two ports.

### 1.2. GigAccess™ 900 System Overview

GigAccess™ 900 is WaveIP's wireless point-to-multipoint broadband communication system. The basic subsystem – a Sector, consists of an AU (Access Unit) and up to 128 Subscriber Units (SUs) Each with full-duplex communication SUs and the WAN via the AU.

Figure 1-1 depicts a general description of a typical sector in the GigAccess™ 900 system.



**Figure 1-1: General Description of typical sector in GigAccess™ 900 System**

## 2. Packing List

When you first open the package, verify that the unit is complete and consists:

- RSU
- Power Supply
- Quick Start Guide

RSU Part number: **RSU-09D-065D-FU**.

Figure 2-1 illustrates the RSU package contents.



Figure 2-1: RSU package contents

## 3. Installation Process

### 3.1. General

The RSU is a self-installed, plug and play unit, which requires minimum operation from the user. A description of the RSU is given in the figure below.

1. Polarization Indication
2. Air link led (Green)
3. ETH link led (Yellow)
4. Received Signal Indicator Lights
5. ETH Connector
6. Power led
7. DC Power Jack



Figure 3-1: Description of Self Install GigAccess™ 900 RSU

### 3.2. Before You Start

- 1) Make sure your computer is equipped with an Ethernet Network Interface (NIC)
- 2) Make sure your computer is set up to automatically obtain an IP address (See 0).
- 3) Select the appropriate location for the RSU:
  - Make sure you are operating the RSU in a room near an outside window.
  - Locate the RSU in such a way that the antenna side will be directed towards your service provider (AU direction).
  - Obtain a clear line of site to the AU as much as possible - avoid any physical obstacles, which may block the signal.
  - Your RSU comes with a 1.5m category-5 Ethernet cable. If you choose to place the RSU. If you purchase a longer cable, make sure the cable is a category-5 Ethernet cable with RJ-45 connector on each side.

### 3.3. Installation

The installation process should follow the following steps:

- 1) Connect the CAT5 Ethernet cable from the RSU data port to your PC NIC. Note that your RSU consists two Ethernet ports, so you can connect your PC to either of them, or to connect two PCs each PC to different Ethernet connector.
- 2) Connect the power supply to the AC wall socket and to the RSU DC power port.

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**WARNING!** Use only with the supplied Power Supply adapter

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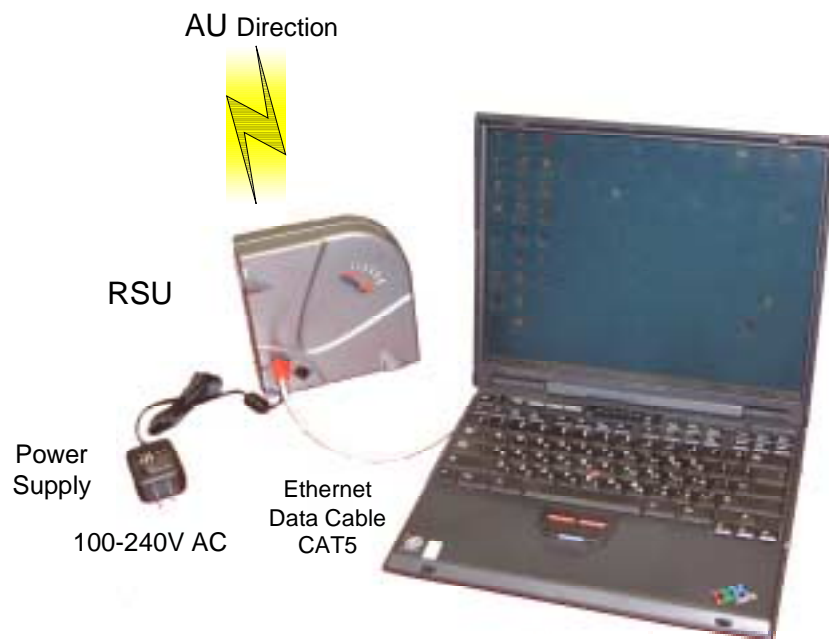
- 3) Align the RSU until you get the maximum receive signal from your service provider. Best received indication when maximum "Received Power Indication leds" are light. Check both vertical and horizontal polarization and select the polarization that gives you the best receiving power. The RSU antenna polarization must be the same as in the AU antenna. In most applications, the preferred orientation is vertical polarization. (Above ground propagation of the signal is better when it is polarized vertically).
- 4) The RSU will automatically acquire the radio channel of the AU.
  - Verify that the Air link led flashes (green led on the Ethernet connector), which indicated reception from the AU.
  - Verify that the Ethernet link led light (yellow led on the Ethernet connector) when the PC is connected. This led will flash in case of Ethernet data transaction between the RSU and the PC.

Now you are ready to surf into the Internet.

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**WARNING!** Do not put any obstacle in front antenna. A minimum separation distance of 20 cm (8 inches) must be maintained between the device in operation and all persons.

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**Figure 3-2: GigAccess™ RSU - Installation Scheme**

### **3.4. Radio Channel Selection**

The radio channel is defined at the AU side.

The RSU is pre-configured to scan all channels. Therefore it will acquire the AU channel automatically.

### **3.5. User PC Setup**

Configure the PC NIC to obtain an IP address from DHCP server.

For this configuration follow the following steps:

- Press right click on the Network Neighborhood Icon.
- Select the Protocol tab and press properties.
- Choose Obtain an IP address from DHCP server.

### **3.6. Safety**

1. Do not immerse the equipment in any type of liquid.
2. Only operate the equipment from the power source(s) Supplied by Manufacturer! Any other type of input power source may cause damage to the equipment and voids the warranty.
3. Do not place the equipment on an unstable surface.
4. Do not disassemble the equipment. Removing covers voids the warranty.
5. Do not expose the equipment to extreme hot or cold temperatures.



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### **3.7. FCC Information**

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**Notice:** This device has been tested and found to comply with Radio Frequency Exposure Limits. A minimum separation distance of 30 cm must be maintained between the device in operation and all persons.

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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.
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**This device Complies With FCC Standards  
FOR HOME OR OFFICE USE**

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#### **FCC Notice, USA**

This equipment has been tested and found to comply with the limits for 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 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 or more of the following measures:

- Reorient the relocate-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 must accept any interference received including interference that may cause undesired operation. Any unauthorized modification or changes to this device without the express approval of WaveIP may void the user's authority to operate this device. Furthermore, this device intended to be used only when installed in accordance with the instructions outlined in this manual. Failure to comply with these instructions may also void the user's authority to operate this device and/or the manufacturer's warranty

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## 4. GigAccess™ 900 RSU Technical Specifications

Operating Frequency	902 – 928MHz ISM band
Number of Channels	7 (912 – 918) in step of 1MHz in GA_900_RSU 15 (907 – 923) in step of 1MHz in GA_900A_RSU
Access technology	TDMA (Time division multiple access)
Duplexing schemes	TDD (Time division duplex)
RF Waveform	Direct Sequence Spread spectrum (DSSS)
Modulation	DQPSK, 16CCK <sup>1</sup> , 256 CCK
Raw Data Rates	11 Mbps and 5.5 Mbps in GA_900_RSU 5.5 Mbps and 2Mbps in GA_900A_RSU
Data Throughput	Up to 5.0 Mbps for RSU
Radio Sensitivity	@11 Mbps: -82 dBm, IE-2 PER <sup>2</sup> @5.5 Mbps: -87 dBm, IE-2 PER @2 Mbps: -89 dBm, IE-2 PER
EIRP	36 dBm (max)
Antenna Gain	6.5 dBi
Antenna Polarization	Vertical or Horizontal
Wireless MAC Interface	Proprietary based on IEEE 802.16a
Physical Interface	2 x 10/100 Base-T (RJ-45)
Protocol Supported	IP, ICMP, ARP, TCP, UDP, DHCP, and HTTP
Software Update	Over the Air Download via TFTP
Operating Temperature	0°C - +40°C
Power	3.3 VDC, < 5 Watt
AC Input Voltage	100 – 240 VAC, 47 – 63 Hz
Mechanical	160 mm x 160 mm x 45 mm

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<sup>1</sup> CCK - Complementary Code Keying

<sup>2</sup> PER - Packet Error Rate