



Powered by Accton

VG007
Pocket VoIP Gateway

Installation Guide

Installation Guide

Pocket VoIP Gateway

*VoIP Internet Gateway
with IEEE 802.11b/g Wireless Access Point,
IEEE 802.11b/g Wireless Client,
and PSTN Telephony Functions*

VG007
F1.0.6.X E012006-R01
150200025700E

Compliances

Federal Communication Commission Interference Statement

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.

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

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.

The antenna(s) used for this transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

IMPORTANT NOTE:

FCC Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters (8 inches) between the radiator and your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Japan VCCI Class B

この装置は、情報処理装置等電波障害自主規制協議会（VCCI）の基準に基づくクラスB情報技術装置です。この装置は、家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると受信障害を引き起こすことがあります。

取り扱い説明書に従って正しい取り扱いをして下さい。

EC Conformance Declaration

Marking by the above symbol indicates compliance with the Essential Requirements of the R&TTE Directive of the European Union (1999/5/EC). This equipment meets the following conformance standards:

- EN 60950-1 (IEC 60950-1) - Product Safety
- EN 300 328 - Technical requirements for 2.4 GHz radio equipment
- EN 301 489-1, EN 301 489-17 - EMC requirements for radio equipment

This device is intended for use in the following European Community countries:

- | | | |
|---------------|------------------|---------------|
| • Austria | • Belgium | • Denmark |
| • Finland | • France | • Germany |
| • Italy | • Luxembourg | • Netherlands |
| • Norway | • Spain | • Sweden |
| • Switzerland | • United Kingdom | • Portugal |
| • Greece | • Ireland | • Iceland |

Requirements for indoor vs. outdoor operation, license requirements and allowed channels of operation apply in some countries as described below:

- In Italy the end-user must apply for a license from the national spectrum authority to operate this device outdoors.
- In Belgium outdoor operation is only permitted using the 2.46 - 2.4835 GHz band: Channel 13.
- In France outdoor operation is only permitted using the 2.4 - 2.454 GHz band: Channels 1 - 7.

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Chapter 1: Introduction

The Pocket VoIP Gateway is a compact multi-function network connection device. The unit provides secure wired and wireless high-speed data and VoIP (Voice over Internet Protocol) communications through an Internet connection.

The Pocket VoIP Gateway functions in the following operating modes:

- Secure VoIP Gateway
- IEEE 802.11b/g Wireless Access Point
- IEEE 802.11b/g Wireless Client

The Pocket VoIP Gateway's capabilities make it ideal for business travelers or home users. The device provides a secure Internet gateway function between a cable/DSL modem connection and its wired LAN port and wireless clients. The integrated VoIP ability offers voice communications over the Internet from a wired or wireless connected PC, or by connecting a regular telephone set to its PHONE port. It can function as an 802.11b/g Wi-Fi access point providing a service to wireless clients. Or, it can function as a wireless client itself for PC connections to other Wi-Fi networks.

In addition, the Pocket VoIP Gateway can automatically select the operating mode based on its port connections, or it can be fully configured through an easy-to-use web-browser management interface.

Package Checklist

The Pocket VoIP Gateway package includes:

- One Pocket VoIP Gateway
- Two RJ-45 Category 5 network cables
- One RJ-11 telephone cable (min 26 AWG)
- One AC power adapter with detachable plug
- This Installation Guide
- Documentation CD (includes Installation Guide and Management Guide)

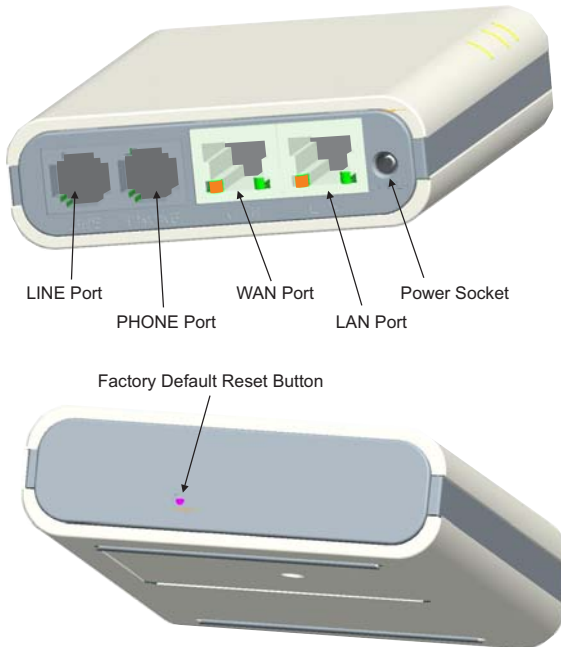
Inform your dealer if there are any incorrect, missing or damaged parts. If possible, retain the carton, including the original packing materials. Use them again to repack the product in case there is a need to return it.

Hardware Description

Top Panel



Side Panels



Component Description

WAN Port

The Pocket VoIP Gateway's WAN port is a standard RJ-45 Ethernet network port. It is for connecting the gateway to an Internet connection device, such as an ADSL or cable modem. You can also connect the WAN port to a switch in an Ethernet network that provides Internet access.

The WAN port can be attached directly to your cable/DSL modem using one of the included Category 5 network cables. If you choose to use other, longer Category 5 network cables, be sure they conform to the specifications and pinouts provided in Appendix B.

Note: The WAN port supports automatic MDI/MDI-X operation, which means you can use the same "straight-through" network cable for connection to a cable/DSL modem or Ethernet switch.

LAN Port

The Pocket VoIP Gateway's LAN port is a standard RJ-45 Ethernet network port that connects directly to your PC. It can also be connected to an Ethernet switch or hub to support more than one user.

The LAN port can be attached directly to your PC using one of the included Category 5 network cables. If you choose to use other, longer Category 5 network cables, be sure they conform to the specifications and pinouts provided in Appendix B.

Note: The LAN port supports automatic MDI/MDI-X operation, which means you can use the same "straight-through" network cable for connection to a PC or an Ethernet switch.

PHONE Port

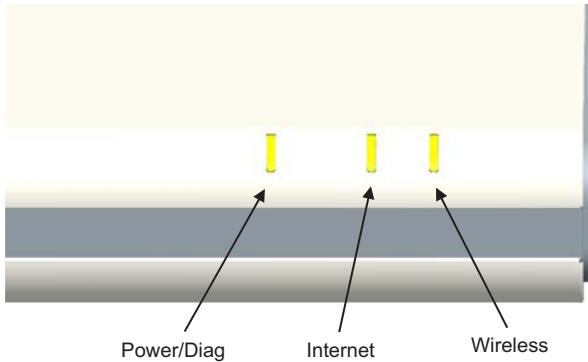
The Pocket VoIP Gateway's PHONE port is a standard RJ-11 telephone port that connects directly to a standard (analog) telephone set. This allows a regular telephone to be used for making VoIP calls over the Internet.




LINE Port

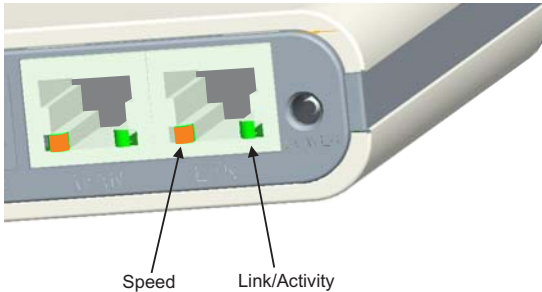
The Pocket VoIP Gateway's LINE port is a standard RJ-11 telephone port that connects directly to a Public Switched Telephone Network (PSTN) jack.

LED Indicators

The Pocket VoIP Gateway includes three system status LED indicators and two port LED indicators for each of the LAN and WAN ports, as described in the following figures and tables.



LED	Status	Description
	On Green	Indicates that the system is working normally.
	On Amber	System running its power-on-self-test. If the LED remains on amber for more than 20 seconds, it indicates system errors.
	On Green	Indicates the Pocket VoIP Gateway has received an IP address from a DHCP server and can connect to the Internet.
	Off	The Pocket VoIP Gateway has no configured IP address to connect to the Internet.
	Slow Flashing Green	Indicates a wireless association (connection) with a strong radio signal.
	Fast Flashing Green	Indicates a wireless association (connection) with a weak radio signal.
	Off	Indicates no wireless association (connection) or no radio signal.



LED	Status	Description
Right (Link/Activity)	On Green	Indicates a valid network link on the port.
	Flashing Green	Indicates network activity on a port link.
	Off	There is no valid network link on the port.
Left (Speed)	On Amber	Indicates the port is operating at 100 Mbps.
	Off	Indicates the port is operating at 10 Mbps.

Factory Default Reset Button

This button is used to reset the Pocket VoIP Gateway to its factory default configuration. If you press and hold down the button for 5 seconds or more, any configuration changes you may have made are removed and the factory default configuration is restored.

Power Connector

The Pocket VoIP Gateway does not have a power switch. It is powered on when connected to the AC power adapter, and the power adapter is connected to a power source. The power adapter automatically adjusts to any voltage between 100-240 volts at 50 or 60 Hz. No voltage range settings are required.

Radio Antenna

The Pocket VoIP Gateway includes an integrated internal antenna for wireless communications. No external connections or adjustments are required.

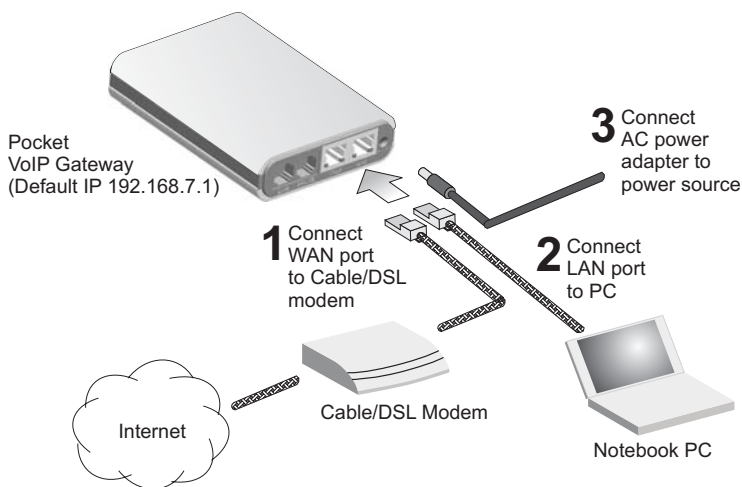
Chapter 2: Connecting the Pocket VoIP Gateway

In its default setting, the Pocket VoIP Gateway's operating mode is determined by how it is connected. The Gateway and Wireless Client modes are automatically implemented depending on the WAN port connection. The Access Point mode, as well as VoIP functions, require manual configuration using the Pocket VoIP Gateway's web management interface.

The connections for each operating mode are described in the following sections. For detailed information on the web management interface, refer to the Management Guide.

Internet Gateway

Used as a gateway, the unit routes traffic between an Internet connected cable or ADSL modem, and wired or wireless PCs or notebooks.



To connect the Pocket VoIP Gateway for use as an Internet gateway, follow these steps:

1. Connect an Ethernet cable from the Pocket VoIP Gateway's WAN port to your Internet connected cable or ADSL modem.
2. Connect an Ethernet cable from the Pocket VoIP Gateway's LAN port to your PC. Alternatively, you can connect to a workgroup switch to support multiple users. The Pocket VoIP Gateway can support up to 32 wired or wireless users.

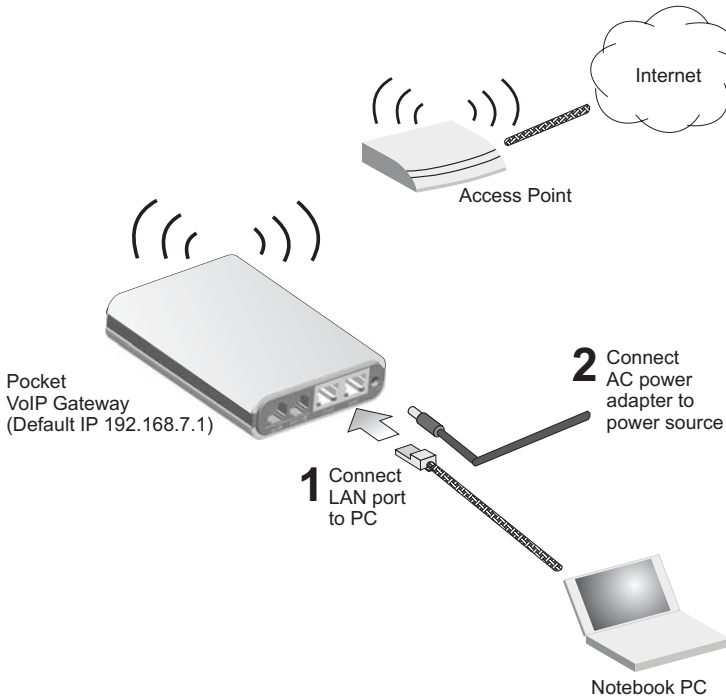
Connecting the Pocket VoIP Gateway

3. Power on the Pocket VoIP Gateway by connecting the AC power adapter and plugging it into a power source.
4. Use your PC's web browser to access the Pocket VoIP Gateway's management interface and run the Setup Wizard to make any configuration changes (refer to the Management Guide for details). The Pocket VoIP Gateway has a default IP address of 192.168.7.1 and a subnet mask of 255.255.255.0.

Note: If your PC has an IP address assigned by DHCP (Dynamic Host Configuration Protocol) or is set on the same subnet as the Pocket VoIP Gateway (that is, the PC's IP address starts 192.168.7.x), you can connect immediately to the web management interface. Otherwise, you must first change your PC's IP address to be on the same subnet as the Pocket VoIP Gateway.

Wireless Client

Used as a wireless client, the Pocket VoIP Gateway can connect your PC to any nearby access point.



To connect the Pocket VoIP Gateway for use as a wireless client, follow these steps:

1. Connect an Ethernet cable from the Pocket VoIP Gateway's LAN port to your PC.
2. Power on the Pocket VoIP Gateway by connecting the power adapter to a nearby power source.
3. Use your PC's web browser to access the Pocket VoIP Gateway's management interface and run the Setup Wizard to scan the area and select a specific access point for connection (refer to the Management Guide for details). The Pocket VoIP Gateway has a default IP address of 192.168.7.1 and a subnet mask of 255.255.255.0.

Note: If your PC has an IP address assigned by DHCP (Dynamic Host Configuration Protocol) or is set on the same subnet as the Pocket VoIP Gateway (that is, the PC's IP address starts 192.168.7.x), you can connect immediately to the web management interface. Otherwise, you must first change your PC's IP address to be on the same subnet as the Pocket VoIP Gateway.

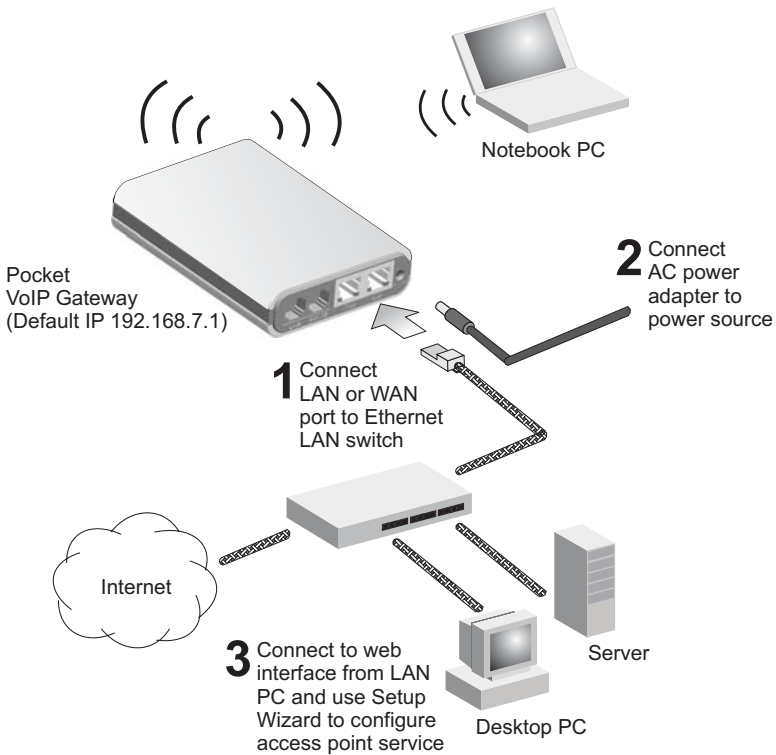
Wireless Access Point

Used as a wireless access point, the Pocket VoIP Gateway connects to an Ethernet LAN switch and extends the local network to associated wireless clients (PCs or notebooks with 802.11b/g wireless capability). From any nearby location, you can then make a wireless connection to the Pocket VoIP Gateway and access the Ethernet network resources, including local servers and the Internet.

In Access Point mode the Pocket VoIP Gateway supports no gateway functions on its WAN port. Either the LAN port or the WAN port can be connected to a local Ethernet LAN.

Note: Access Point mode must be manually set using the web management interface. For more information, refer to the Management guide.

Connecting the Pocket VoIP Gateway



To connect the Pocket VoIP Gateway for use as an access point, follow these steps:

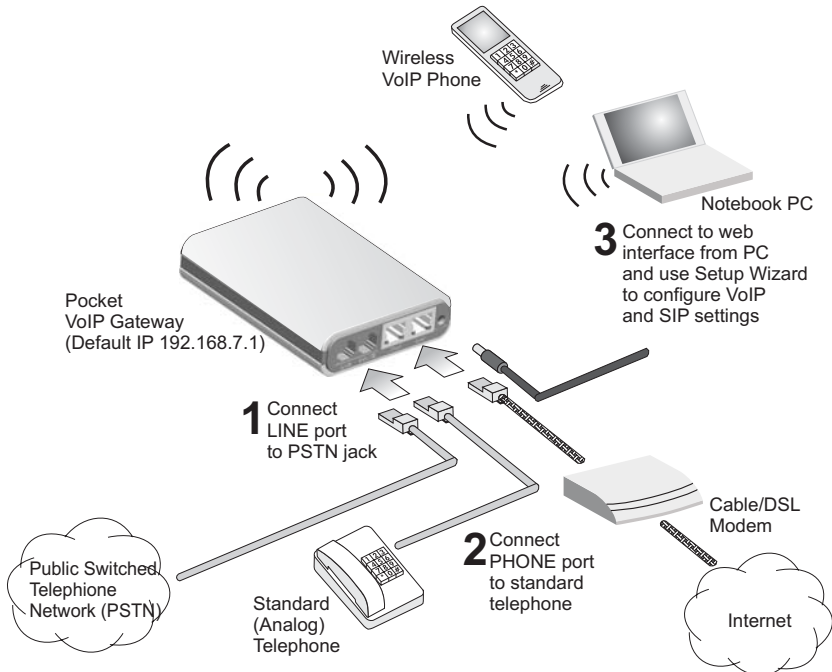
1. Connect an Ethernet cable from the Pocket VoIP Gateway's LAN or WAN port to your local network switch.
2. Power on the Pocket VoIP Gateway by connecting the AC power adapter and plugging it into a power source.
3. From a PC on the local network, use a web browser to access the Pocket VoIP Gateway's user interface and run the Setup Wizard to configure the access point service (refer to the Management Guide for details). The Pocket VoIP Gateway has a default IP address of 192.168.7.1 and a subnet mask of 255.255.255.0. If the default IP address is not compatible with the local network, you can first configure the Pocket VoIP Gateway from a direct connection to a PC before installing the unit in the network.

VoIP Telephony Functions

The Pocket VoIP Gateway can function as a VoIP gateway for making telephone calls over the Internet. Using the Internet to make VoIP calls to any other VoIP user in the world is essentially free, and even calls to regular PSTN (Public Switched Telephone Network) phones are much cheaper than making a traditional long distance calls.

The Pocket VoIP Gateway enables VoIP calls to be made using a regular (analog) telephone set, as well as a PC or VoIP phone. The regular telephone can also be used to make PSTN calls through the Pocket VoIP Gateway.

The Pocket VoIP Gateway uses standard Session Initiation Protocol (SIP) technology to make VoIP calls. When you have connected the unit in either gateway, access point, wireless client, or repeater mode, use the web management interface to set up the SIP parameters. Refer to the Management Guide for more information on VoIP and SIP.



To connect the Pocket VoIP Gateway to use its telephony functions, first connect and configure the Pocket VoIP Gateway in the operating mode you want to use (see the appropriate section in this chapter.), then follow these steps:

1. Connect an RJ-11 telephone cable from the Pocket VoIP Gateway's PHONE port to your standard (analog) telephone set.
2. Connect an RJ-11 telephone cable from the Pocket VoIP Gateway's LINE port to an available PSTN telephone jack.
3. Use your PC's web browser to access the Pocket VoIP Gateway's management interface and configure your VoIP and SIP settings (refer to the Management Guide for details).

Note: To make a PSTN call through the Pocket VoIP Gateway, you must first dial “*0” on the standard telephone set. The default on the PHONE port is for VoIP calls.

Appendix A: Troubleshooting

Diagnosing LED Indicators

Troubleshooting Chart	
Symptom	Action
Power LED is Off	<ul style="list-style-type: none">• AC power adapter may be disconnected. Check connections between the Pocket VoIP Gateway, the power adapter, and the wall outlet.
Power LED is Amber for more than 20 seconds	<ul style="list-style-type: none">• The Pocket VoIP Gateway has detected a system error. Reboot the Pocket VoIP Gateway to try and clear the condition.• If the condition does not clear, contact your local dealer for assistance.
WAN or LAN link LED is Off	<ul style="list-style-type: none">• Verify that the Pocket VoIP Gateway and attached device are powered on.• Be sure the cable is plugged into both the Pocket VoIP Gateway and corresponding device.• Verify that the proper cable type is used and its length does not exceed specified limits.• Check the cable connections for possible defects. Replace the defective cable if necessary.

Note: For information on troubleshooting wireless connectivity issues, refer to the Management Guide.

Appendix B: Cables and Pinouts

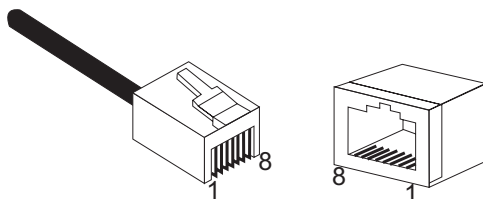
Twisted-Pair Cable Assignments

For 10/100BASE-TX connections, a twisted-pair cable must have two pairs of wires. Each wire pair is identified by two different colors. For example, one wire might be green and the other, green with white stripes. Also, an RJ-45 connector must be attached to both ends of the cable.

Caution: Each wire pair must be attached to the RJ-45 connectors in a specific orientation. (See “Straight-Through Wiring” on page B-2 and “Crossover Wiring” on page B-2 for an expADSL connectionation.)

Caution: DO NOT plug a phone jack connector into the RJ-45 port. Use only twisted-pair cables with RJ-45 connectors that conform with FCC standards.

The following figure illustrates how the pins on the RJ-45 connector are numbered. Be sure to hold the connectors in the same orientation when attaching the wires to the pins.



10/100BASE-TX Pin Assignments

Use unshielded twisted-pair (UTP) or shielded twisted-pair (STP) cable for RJ-45 connections: 100-ohm Category 3 or better cable for 10 Mbps connections, or 100-ohm Category 5 or better cable for 100 Mbps connections. Also be sure that the length of any twisted-pair connection does not exceed 100 meters (328 feet).

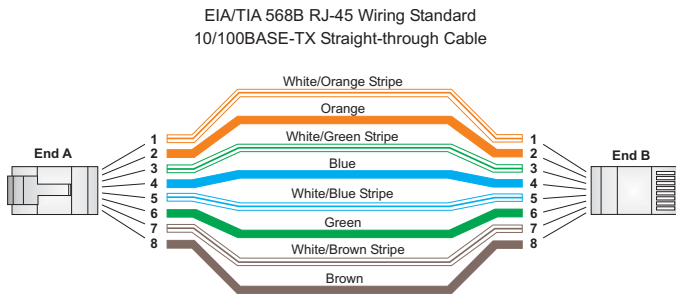
The RJ-45 port on the Pocket VoIP Gateway supports automatic MDI/MDI-X operation, so you can use straight-through or crossover cables for all network connections to PCs, switches, or hubs. In straight-through cable, pins 1, 2, 3, and 6, at one end of the cable, are connected straight through to pins 1, 2, 3, and 6 at the other end of the cable.

Pin	MDI-X Signal Name	MDI Signal Name
1	Receive Data plus (RD+)	Transmit Data plus (TD+)
2	Receive Data minus (RD-)	Transmit Data minus (TD-)
3	Transmit Data plus (TD+)	Receive Data plus (RD+)
6	Transmit Data minus (TD-)	Receive Data minus (RD-)
4,5,7,8	Not used	Not used

Note: The "+" and "-" signs represent the polarity of the wires that make up each wire pair.

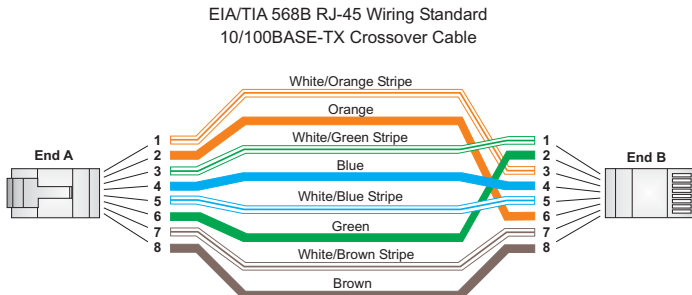
Straight-Through Wiring

If the twisted-pair cable is to join two ports and only one of the ports has an internal crossover (MDI-X), the two pairs of wires must be straight-through.



Crossover Wiring

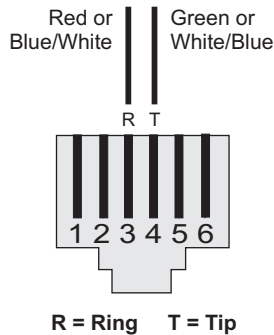
If the twisted-pair cable is to join two ports and either both ports are labeled with an "X" (MDI-X) or neither port is labeled with an "X" (MDI), a crossover must be implemented in the wiring.



RJ-11 Ports

Standard telephone RJ-11 connectors and cabling can be found in several common wiring patterns. These six-pin connectors can accommodate up to three wire pairs (three telephone lines), but usually only one or two pairs of conductor pins and wires are implemented.

The RJ-11 ports on the side of the Pocket VoIP Gateway contain only one wire pair on the inner pins (3 and 4).



Pin	Signal Name	Wire Color
1	<i>Not used</i>	
2	<i>Not used</i>	
3	Line 1 Ring	Red or Blue/White
4	Line 1 Tip	Green or White/Blue
5	<i>Not used</i>	
6	<i>Not used</i>	

Appendix C: Specifications

Physical Specifications

Ports

2 10/100BASE-TX ports, RJ-45 connector, auto MDI/X

10BASE-T: RJ-45 (100-ohm, UTP cable; Category 3 or better)

100BASE-TX: RJ-45 (100-ohm, UTP cable; Category 5 or better)

1 FXS port (PHONE), RJ-11 connector

1 FXO port (LINE), RJ-11 connector

LED Indicators

Power, Internet, Wireless (802.11b/g Wireless Link/signal strength),

WAN (Ethernet Link/Activity, Speed), LAN (Ethernet Link/Activity, Speed)

AC Power Adapter

Vendor: PHIHONG

Model Number: PSC05R-050

Input: 100-240 VAC, 50-60 Hz, 0.2 A

Output: 5 VDC, 1A

Unit Power Supply

DC Input: 5 VDC, 1 A maximum

Power Consumption: < 5 W

Physical Size

105 x 78.67 x 24.7 mm (4.13 x 3.1 x 0.97 in)

Weight

0.1 kg (0.22 lbs)

Temperature

Operating: -10 to 50 °C (14 to 122 °F)

Storage: -40 to 70 °C (-40 to 158 °F)

Humidity

5% to 95% (non-condensing)

Wireless Specifications

Maximum 802.11b/g Channels

FCC/IC: 1-11

ETSI: 1-13

France: 10-13

MKK: 1-14

Operating Frequency

2.4 ~ 2.4835 GHz (US, Canada, ETSI)

2.4 ~ 2.497 GHz (Japan)

Maximum Wireless Clients

32

Data Rate

802.11g: 6, 9, 11, 12, 18, 24, 36, 48, 54 Mbps (automatic fall back)

802.11b: 1, 2, 5.5, 11 Mbps (automatic fall back)

Modulation Type

802.11g: CCK, BPSK, QPSK, OFDM

802.11b: CCK, BPSK, QPSK

RF Output Power

802.11b: 17 dBm

802.11g: 15 dBm

VoIP Specifications

Voice Signaling Protocol

SIP v2

Voice Codec

G.711

G.726

G.729 a, b

Voice Quality

VAD (Voice Activity Detection)

CNG (Comfortable Noise Generation)

Echo cancellation (G.165/G.168 echo canceller) up to 16 milliseconds

Adaptive jitter buffer, 70 to 200 milliseconds

DTMF tone detection and generation

Call progress generation

Custom tone generation

Call Features

Call transfer
Call waiting/hold/retrieve
3-way conference call
Call-ID number and name
Call-ID block
Anonymous call blocking
T.38 fax relay
Dial plan (E.164 dialing plan)
Do not disturb setting
Speed dial
Repeat dialing on busy
Call return
Call forwarding: No Answer/Busy/All
Distinctive ringing

Compliances

Emissions

FCC Part 15B Class B
VCCI Class B
EN 55022 Class B
EN 55024
EN61000-3-2
EN61000-3-3

Radio Signal Certification

FCC Part 15C
EN 300-328
EN 301 489-1
EN 301 489-17
ARIB STD-T66
ARIB STD-33
SRMC
DGT LP0002

Public Telecommunications

FCC Part 68
JATE (Japan)
DGT (Taiwan)

Temperature

IEC 68-2-14

Vibration

IEC 68-2-36, IEC 68-2-6

Specifications

Shock

IEC 68-2-29

Drop

IEC 68-2-32

Safety

UL/cUL (UL 60950-1)

IEC 60950-1 (CB)

Standards

IEEE Std. 802.3-2002 10BASE-T and 100BASE-TX

IEEE 802.11b, g

Wi-Fi 11b/g, WPA, WPA2, WMM

UPnP

