

AT-iMG616RF/RF+
INSTALLATION GUIDE

AT-iMG616RF/RF+ SERIES MULTISERVICE VOIP GATEWAY - USER MANUAL

This User Manual covers the following products:

AT-iMG616RF/RF+

For a description of detailed functionality please refer to the Reference Manual. For installation and safety instructions please refer to this User Manual.

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Thank you for choosing the AT-iMG616RF/RF+ Multiservice Gateway. Please read this manual carefully and use the device correctly. "The device", "this product", "AT-iMG616RF/RF+", "AT-iMG616" and "MG616" all refer to the Multiservice Gateway unit.

Please see below for the meaning of the icons used in this manual.

TABLE I: ICONS

Icon	Meaning
	Useful information
	Indication of risk of a serious injury and/or damage to the environment
	As above
	Indication of reference page and information

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Important safety instructions



DO NOT OPEN the product, remove screws or cover. To prevent ELECTRIC SHOCK during normal use, the plastic chassis of the product must be kept closed.

This unit contains HAZARDOUS VOLTAGES and should only be opened by a trained and qualified technician.



DANGER: DO NOT WORK on equipment or CABLES during periods of LIGHTNING ACTIVITY to avoid ELECTRIC SHOCK.



Do not use the telephone to report a gas leak in the vicinity of the leak.



To avoid risk of electrical shock or fire, this device, connecting peripherals and cables, should not be used in an outside environment.



Air vents must not be blocked. They must have free access to the environment air for cooling to prevent fire caused by excessive heating.



To avoid the possibility of ELECTRIC SHOCK or FIRE caused by a short in internal circuits, do not place the device in any of the environments listed on point 2.



To avoid FIRE risk, use this unit only with industry standard plugs and wiring suitable for your territory.



Be careful not to drop water or any other harmful substance onto the product. This could lead to fire or electric shock. If the unit might get in contact with liquids, unplug the power and contact your support center or sales stores.

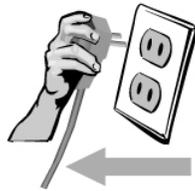


This product contains parts that are sensitive to static shock. Please avoid touching interface connectors with bare hands.



This could lead to fire or electric shock. Take care when handling the power cable and plug:

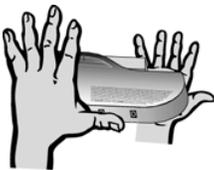
- Do not strain the power cable
- Do not place near a heater or stove
- Unplug the power cable using the plug



Keep the product free away from dust and maintain it clean. Unplug before cleaning.



Only the power adapter supplied with this unit is guaranteed to function correctly with it.



Do not drop the unit, handle with care.



If really dirt, clean using a soft, damp cloth with a neutral detergent. Then dry with a soft cloth.



Do not use oil, cleanser, thinner, petrol, wax, boiled water and powdered soap (please follow the instructions when you use a chemical duster).

I. Important notice

Do not use or store the device:

In direct sunlight.

In a hot environment.

In a low-airflow environment, such as a drawer or a closet, while the unit is turned on. *Restricting airflow can damage the unit or cause a fire.*

Where there could be a sudden temperature change

In a damp place or near a liquid such as water. Humidity must be less than 80%.

In areas subject to a lot of vibration.

In dusty and/or carpeted areas.

In the presence of corrosive gases.



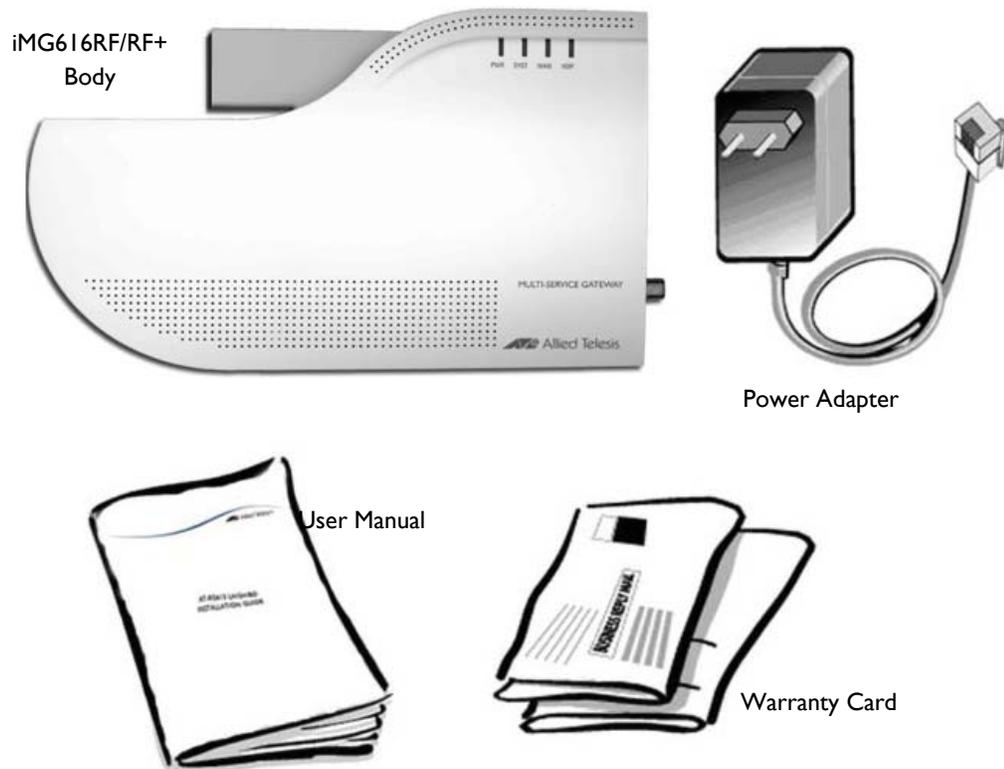
I.1. Emission Statement

CE Marking Warning: This is a class B product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Please install and use it in accordance with this user manual.

2. Contents of the package

FIGURE 1: CONTENTS OF THE PACKAGE



(Notice) The package does not contain screws.

The following items are included with each AT-iMG616RF/RF+. Contact your sales representative if any items are damaged or missing.

One AT-iMG616RF/RF+

One AC/DC power adapter

One AT-iMG616RF/RF+ Series Multiservice VoIP Gateway User Manual

One warranty card

2.1. What can the AT-iMG616RF/RF+ do for you?

The AT-iMG616RF/RF+ is Customer Premise Equipment (CPE) designed for being installed in a customer residence, it interfaces with new generation fibre networks designed to support broadband communications.

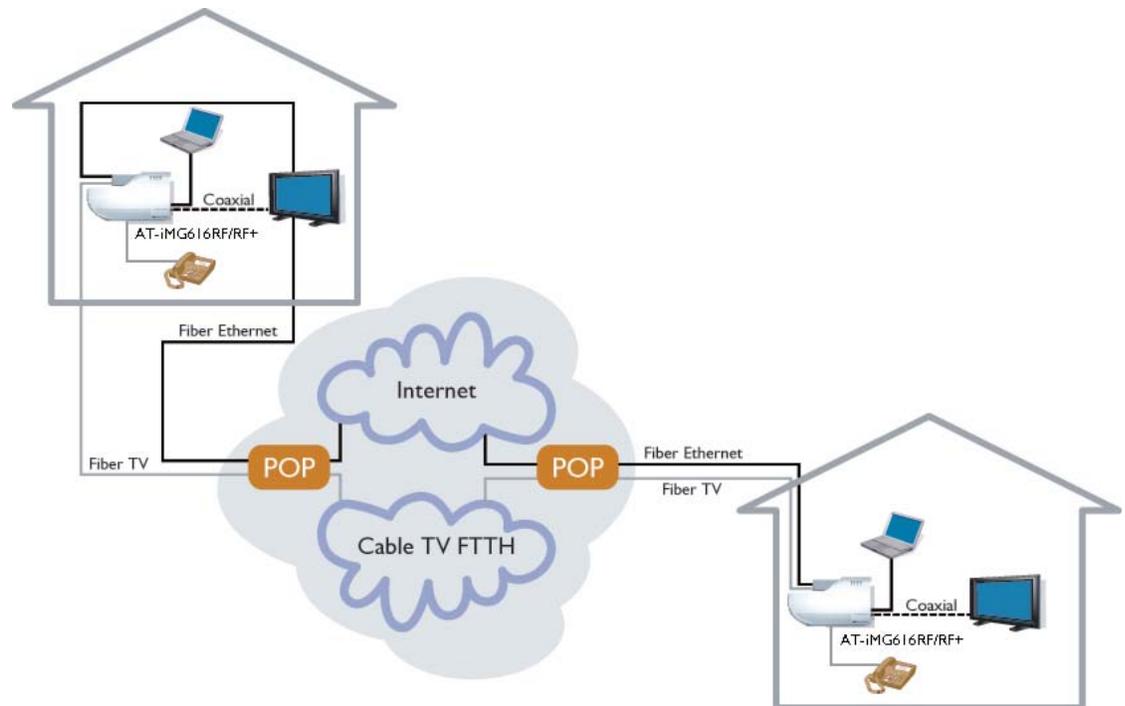
The AT-iMG616RF/RF+ is the ideal platform for operators and service providers who can access native cable TV content for their entry-level deployment of IP Triple Play services over FTTH networks. It also offers Cable operators and MSOs the ability to maintain their investment in video delivery and leverage their existing video content format for delivery over Next-generation IP/Ethernet FTTH-based broadband networks.

Using this intelligent equipment, called a "multi-service gateway", you can use broadband integrated services for telephony, Internet, Internet Video and CATV (Community Antenna Television of Cable TV).

The VoIP multi-service gateway is fitted with a number of ports for connection of telephones, faxes, PC's, set top box for TV and Cable TV.

Using the internal Ethernet router you can easily build a firewall-protected Local Area Network (LAN) in your home supporting multiple PC's as well as a set top box for TV/video services (see figure below).

FIGURE 2: LAN CONNECTIONS



3. Product Details

3.1. Top view of Unit

FIGURE 3: TOP VIEW

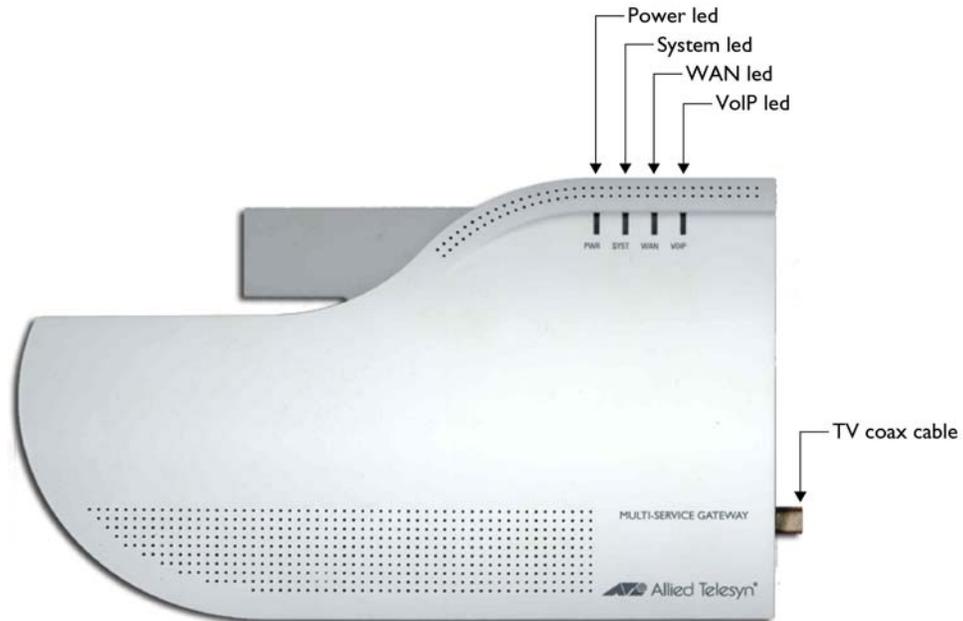


TABLE 2: POWER/SYSTEM LED INDICATIONS IMG616RF/RF+

Led	State	Function
Power	Green light on	The device is receiving power and the voltage is within the acceptable range
	Red light off	The system is working normally
	Red light on	The unit is starting up or is malfunctioning
System	Red light flashing (4 flashes followed by 1 second off)	The unit is downloading the software
	Red light flashing (2 flashes followed by 1 second off)	The unit is writing the software into flash

TABLE 3: WAN LED INDICATIONS IMG616RF/RF+

WAN	Orange light off	WAN link not established
	Orange light on	WAN link established
	Orange light flashing	Activity on WAN link

TABLE 4: VOIP LED INDICATIONS WHEN THE IMG616RF/RF+ TEL1 AND TEL2 PORTS ARE REGISTERED ON A REMOTE SERVER (THE PORTS ARE ENABLED TO CALL A REMOTE NUMBER VIA A VOIP NETWORK)

Led	State	Function
VoIP	Green light on	LED is fixed on when you lift the receiver of the telephone or fax connected to TEL1 or TEL2 port and remains on during the call.
	Green light flashing	The VoIP network is operating. (Both TEL1 and TEL2 receivers are in on-hook state).
	Green light off	The VoIP network is not operating.

TABLE 5: VOIP LED INDICATIONS WHEN THE IMG616RF/RF+ TEL1 AND TEL2 PORTS ARE NOT REGISTERED ON A REMOTE SERVER (THE TEL PORTS ARE ENABLED TO CALL EACH OTHER)

Led	State	Function
VoIP	Green light on	LED is fixed on when you lift the receiver of the telephone or fax connected to TEL1 or TEL2 port and remains on during the call.
	Green light off	Both TEL1 and TEL2 receivers are in on-hook state.

3.2. Front view of unit

FIGURE 4: REAR VIEW OF AT-IMG616RF/RF+

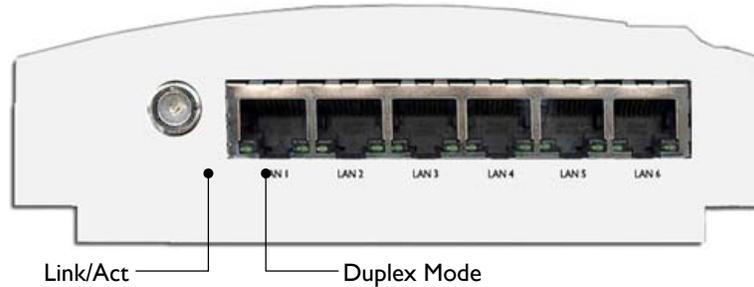


TABLE 6: SPEED AND LINK/ACT LED INDICATIONS

Led	State	Function
Duplex Mode	Green light off	Transmission and Reception of packets in half duplex mode
	Green light on	Transmission and Reception of packets in full duplex mode
Link/act	Green light off	Link not established
	Green light on	Link established
	Green light flashing	Link activity

3.3. Side view of unit

FIGURE 5: SIDE VIEW OF AT-IMG616RF/RF+



TABLE 7: POWER CONNECTION

Port	Function
Power Cable	Provides the 12V DC power to this product. This product doesn't have a power switch, you have to plug or unplug the power cable to turn the unit off.
Tel2/Tel1	Connects analog telephone and fax.
LAN port (MDI-X)	Connects computer, HUB and switch with UTP cable.
TV	Connects TV set with coax 75 ohm cable.

3.4. 3D view of unit

FIGURE 6: 3D VIEW OF AT-IMG616RF/RF+

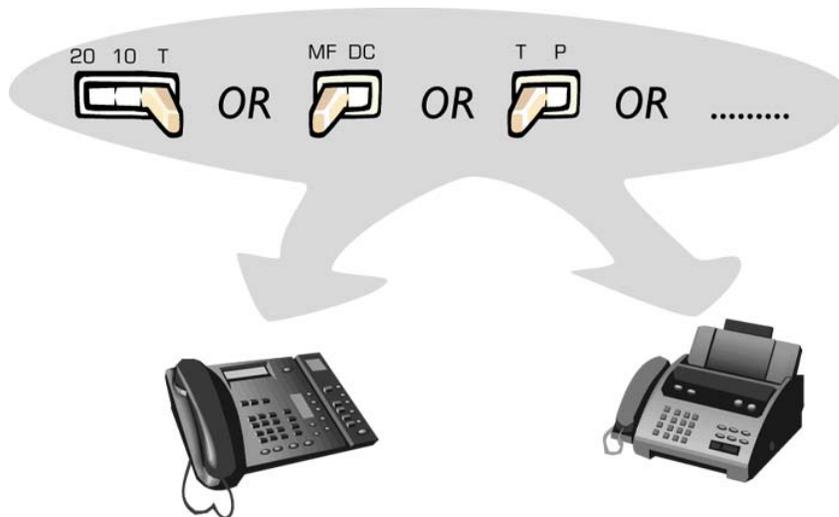


4. Telephones and cables

4.1. AT-iMG616 - POTS Telephone and Fax Operation

Check if the dial mode is set up for tone mode (T, Tone). If not, set the switch as shown below.

FIGURE 7: DIAL MODE SETTING



Note, as shown in the diagram, different models of phone are likely to have different labelling on this switch.



Some models do not have this switch or the possibility to set up the tone mode with a button. In this case please follow the instructions of the telephone and fax used.

4.2. Telephone cord, UTP cable and TV cable

There are 3 kinds of user connection cables: telephone cables, Unshielded Twisted Pair (UTP) cables used for data and TV coax cable for TV set.

See Below.



This product does not include any LAN, phone or TV cables. The service provider or end user must provide these.

FIGURE 8: TELEPHONE CABLE



Note: The telephone cable uses the RJ11 connector



CAUTION: To reduce the risk of fire, use only No. 26AWG or larger telecommunication line cord.

FIGURE 9: LAN CABLES



Use UTP cable category 3 or higher on 10Base-T, and UTP cable category 5 or higher on 100BASE-TX.



There are two types of LAN cable, straight cable and crossed cable; for the AT-iMG616RF/RF+, it does not matter which of these types of LAN cable you use. The LAN interfaces on the AT-iMG616RF/RF+ can auto-sense whether the cable is straight or crossed.



If you buy a new cable, it is recommended that you choose UTP cable - category 5 or higher

4.3. TV

FIGURE 10: TV CABLES



4.4. Optical fibers for Ethernet and CATV

There are 2 kinds of user connection fibers: Ethernet bi-directional fiber and CATV fiber.

Ethernet fiber is a single mode fiber provided with an UPC-SC connector.

CATV fiber is a single mode fiber provided with an APC-SC connector.

5. Connecting the AT-iMG616RF/RF+

5.1. Connecting the PSTN telephone ports

Connect PSTN (POTS) telephone and PSTN fax units to the TEL ports with the appropriate telephone cords. Push in the plug of the telephone cord to the TEL port until you hear a “click” and make sure it is correctly fixed by pulling the telephone cord lightly.



CONNECT TO TEL 1 WHEN YOU USE ONLY ONE TELEPHONE OR FAX MACHINE

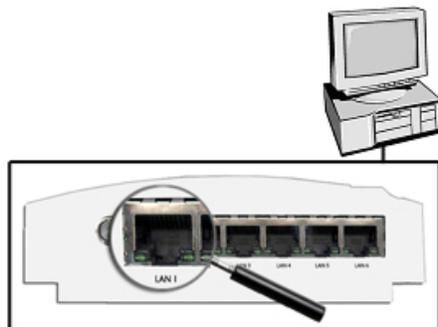
FIGURE 11: TELEPHONE PORTS CONNECTION



5.2. UTP Cable Connection

To connect devices to the LAN ports using UTP cables follow the procedure below:

FIGURE 12: UTP CABLE CONNECTIONS



Push in the plug of the UTP cable into the LAN port until you hear a “click” and make sure it is correctly fixed by pulling the UTP cable lightly. In the same way connect the plug on the other end of the UTP cable to the network interFace card of the computer, or other LAN device.

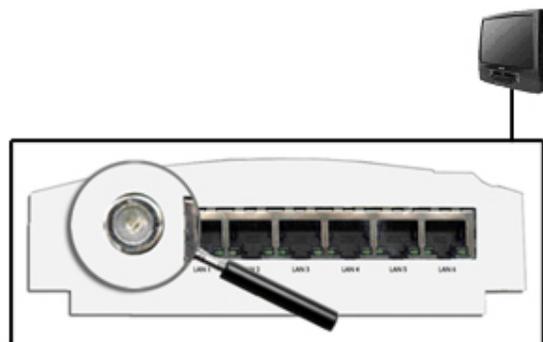


THE LENGTH OF ALL CABLES MUST BE LESS THAN 100 M.

5.3. CATV Cable Connection

To connect the TV set to the CATV port using a coax 75-ohm cables follow the procedure below:

FIGURE 13: CATV CABLE CONNECTIONS



5.4. Disconnecting power supply

This product doesn't have a power switch; it automatically turns on when you connect the power cable.

When you want to turn it off, just unplug the power cable.

FIGURE 14: POWER CABLE



Notice about functions and services

When using the VoIP telephony service it might be that some services usually offered by standard telephone networks are not available. Similarly, some telephone or fax functions may not be available on the VoIP network. Please contact your VoIP Telephony provider for further details.

Appendix A: Troubleshooting

This Appendix describes some of the more common problems that may occur during AT-iMG616RF/RF+ installation and use.

In the event of a problem, please look at the LED indications and then refer to this Appendix.

6. Fault Finding

Is the **POWER LED** on?

If the power LED is off, please check if the power cable is not damaged, the power cable is correctly connected and you are using the plug with the correct power voltage.

Check if the AC plug of the power cable of the product is connected correctly. This product doesn't have a power switch. To turn the unit on or off you have to plug or unplug the power cable.

Is the **SYSTEM LED** red?

If the SYSTEM LED lights up red, unplug the AC plug and plug it in again after 20 seconds. If you do not resolve the problem, unplug the power plug of this product and contact your supplier

Is the **WAN LED** off?

Check to ensure that the iMG616 is seated correctly into the wall mounted RG001. If you have ensured that it is correctly seated, and the WAN LED remains unlit then contact your supplier.

Are the **LAN LINK/ACT LED** off?

Check if the power of the connected device is on, check that there are no problems with the network interFace cards installed in the attached devices, also check if the cables are correctly connected to the network interF/RF+ace cards.

Check also if the length of the cable is over the limit. UTP cable must be less than 100 m.

Do you have a problem with the **UTP cable**?

Swap out with a known good cable.

Does **VOIP LED** remain off when you lift up the receiver?

Please ensure that the telephone cable is connected correctly, that the correct cable is being used and that the cable is not damaged.

Do you have a problem with the **telephone cord**?

Swap out with a known good telephone cord.

For POTS phones and faxes check if the setting of the dial mode for the telephone and fax is correct, follow the instructions of the telephone and/or fax device.



For further information on dial mode set up please refer to Chapter 5

Do you have a problem with the **CATV signal**?

Please, check the connections of the CATV fiber and the coax TV cable.

In case of malfunctioning, replace with a known good fiber or cable. If the problem persists, check with your CATV provider.

Appendix B: Technical Specifications

6.1. Product Specifications AT-iMG616RF/RF+

Supported standards	
	IEEE 802.3 10 BASE-T, 100 BASE-TX
	IEEE 802.3u 100 BASE-FX,
	RFC 791, RFC 1144, RFC 1112, RFC 2236, RFC 2516,
	RFC 1334, RFC 1994, RFC 1631, RFC 2131,
	RFC 3261, RFC 1350, RFC 318, RFC 826,
	RTP/RTCP, H.323 4.0, MGCP/NCS 1.0, SNMP v1
Interface	
WAN port	1 100BASE-FX (SC connector)
LAN port	6 10/100BASE-TX (8 pin RJ45 connector)
TEL port	2 FXS (6 pin RJ11 connector)
TV port (IN)	1 SC connector
TV port (OUT)	1 female 75-ohm F-type connector
Power	
AC Input voltage	AC100-240V
Standard Frequency	50-60Hz
AC Input current	0.1A (240V)
Average power	10W
Average heat	7.0kcal/h
Environment condition	
Storage Temperature	-20° to 70°C
Humidity	Less than 95% (non condensing)
Operating Temperature	0° to 40° C
Humidity	Less than 80% (non condensing)
Size (with no projection)	
	240(W) x 150 (D) x45 (H) mm
Weight	
	400g
MAC address table size	
	1024
Memory Capacity	
RAM memory	16Mbyte
Flash memory	4Mbyte
Product Certification	
	CE
Compliances	
	IEC60950, EN60950
	EN55022, EN61000-3-2, EN61000-3-3, EN55024
	Class I Laser Product, IEC825

Appendix C: Contact information

In the event of any problem please contact your service provider or installer.