Outdoor Multi-Router 3-2
Outdoor Multi-Router 1-1
Outdoor Multi-Router 1-1 LITE

Installation Manual

Outdoor Multi-Router 3-2

Outdoor Multi-Router 1-1 and 1-1 LITE

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Characteristics

Outdoor Multi-Router product line are special high-performance outdoor routers. They are suitable for creating access points or backbone connections for wireless networks in unlicensed bands 2,4 GHz and 5~6 GHz.

Outdoor Multi-Router 3-2 has three 10/100 Mbps Ethernet ports and two dual-band IEEE 802.11 a/b/g wireless ports. It is powered using the IEEE 802.3af Power Over Ethernet standard which allows a long powering Ethernet cable.

Outdoor Multi-Router 1-1 has one 10/100 Mbps Ethernet port and one dual-band 802.11 a/b/g wireless port. It is also powered using the IEEE 802.3af Power Over Ethernet standard.

Outdoor Multi-Router 1-1 LITE has the same Ethernet port and Wireless port as Multi-Router 1-1 and uses Passive Power Over Ethernet. This passive standard allows a short length of Ethernet cable.

Warning!

- This device is for networking professionals who install and manage outdoor products. To use this manual, you should have experience working with the TCP/IP configuration and be familiar with the concepts and terminology of wireless networks.

- This device should be installed only by person instructed about risk coming from atmospheric discharges, static electricity, inducted electricity, power surges and works at height. Ferimex is not responsible for any property damage, injury or death that these risks may cause.

Package Contents

a) Multi-Router 3-2 and Multi-Router 1-1

1. Ferimex Outdoor Multi-Router unit
2. Mounting bracket
3. Active Power over Ethernet Injector
4. Power cord
5. CD with Reference manual and utilities.

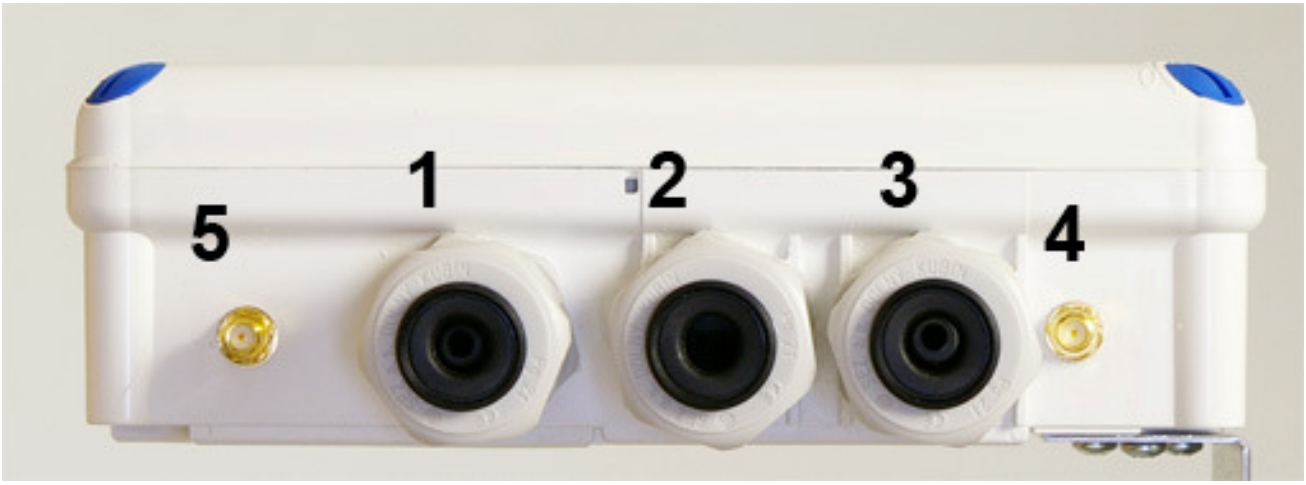
b) Multi-Router 1-1 LITE

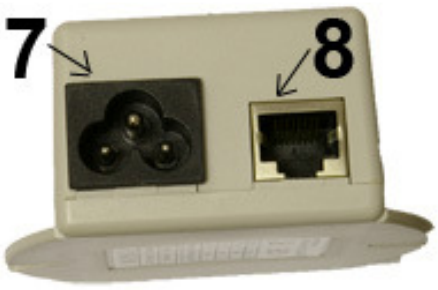
1. Ferimex Outdoor Multi-Router unit
2. Mounting bracket
3. Passive Power over Ethernet Injector with standard DC jack
4. CD with Reference manual and utilities.

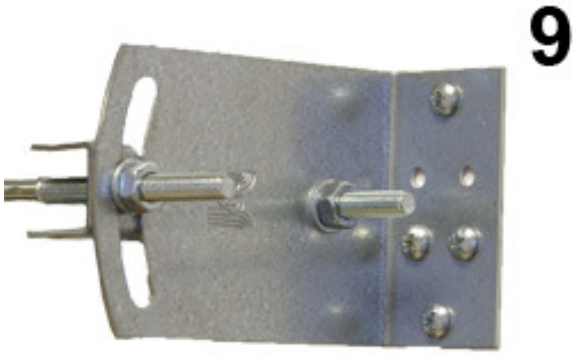
Package does not contain Ethernet cables. You should prepare Ethernet cables by yourself in the lengths you need. Ferimex can sell you Ethernet cables separately.

Hardware Description

a) Outdoor Multi-Router 3-2

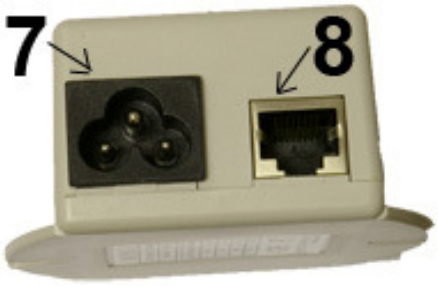




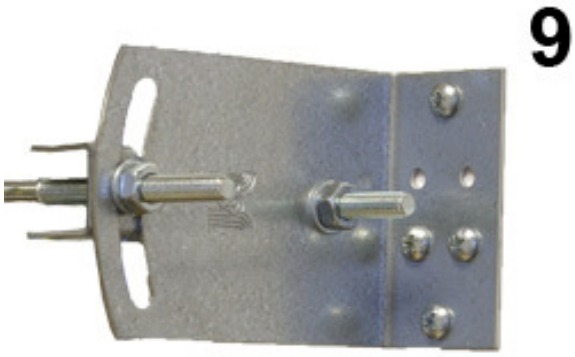


1. **ETH 1 + POE IN**
2. **ETH 2**
3. **ETH 3**
4. **WLAN 1**
5. **WLAN 2**
6. **PoE OUT (to outdoor device)**
7. **Power Input**
8. **Lan IN**
9. **Mounting bracket**

b) Outdoor Multi-Router 1-1

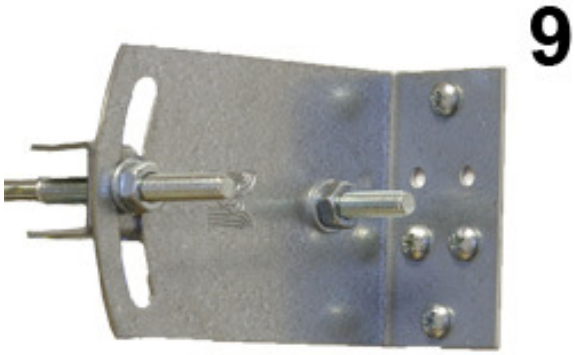


1. ETH 1 + POE IN
4. WLAN 1
6. PoE OUT (to outdoor device)
7. Power Input
8. Lan IN
9. Mounting bracket
(numbers 2,3 and 5 are unused)



c) Outdoor Multi-Router 1-1 LITE

1. ETH 1 + POE IN
4. WLAN 1
6. PoE OUT (to outdoor device)
7. Power Input DC jack
8. Lan IN
9. Mounting bracket
(numbers 2,3 and 5 are unused)



Hardware Installation

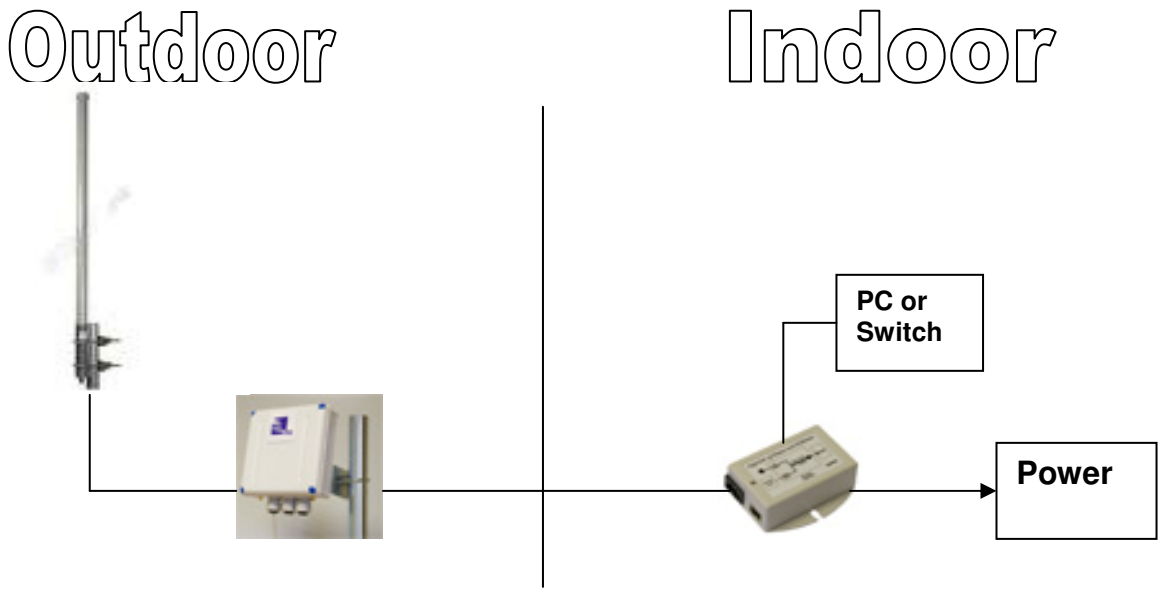
1. Assemble the mounting bracket (**9**) and connect it to the back side of plastic housing of the outdoor unit using 4 screws. The holes for screws are on both right and left sides, so you can choose where you connect the holder.
2. Mount the outdoor unit to a pipe or a pole. The arrow mark on the back side must always point up.
3. Plug the Antenna cable to port WLAN1 (**4**) or WLAN2 (**5**) or both.
4. Properly insulate SMA connectors against the water or moisture. Use rubber insulating tape (not included). **Remember that any small amount of moisture inside a connector will strongly reduce the performance of the device.**
5. Plug the RJ-45 network cable to the ETH1 + POE IN (**1**) port.
6. Plug the other end of the RJ-45 cable to the POE OUT port **(6)** of PoE Injector. **The PoE Injector is guaranteed only in indoor environment.**
7. Connect PoE Injector to your computer or network using the LAN IN port of PoE (**8**)

8a. Outdoor Multi-Router 3-2 and Outdoor Multi-Router 1-1:
Connect the PoE Injector to electrical power using the included power cord.

8b. Outdoor Multi-Router 1-1:
Use the Power Adapter of 10~28 Volts to supply power for the device.

Caution: DON'T plug the Power Cord or Power Adapter into PoE device before you finish installing the antenna to ensure safety.

We recommend you refer to the following illustration as a guideline for hardware installation.



Caution: Always install the outdoor unit with the arrow mark pointing UP. At the bottom of device there is small aperture. Always keep this aperture facing down so condensate moisture can leak out from the device. Otherwise the water may leak into the device during the rain and damage the device. This kind of damage is not covered by warranty.

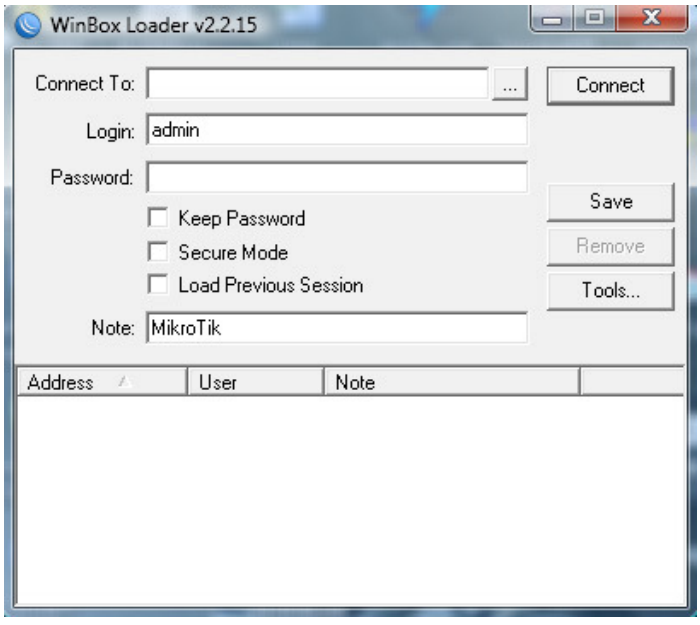
Accessing the configuration

There are three ways to configure device:

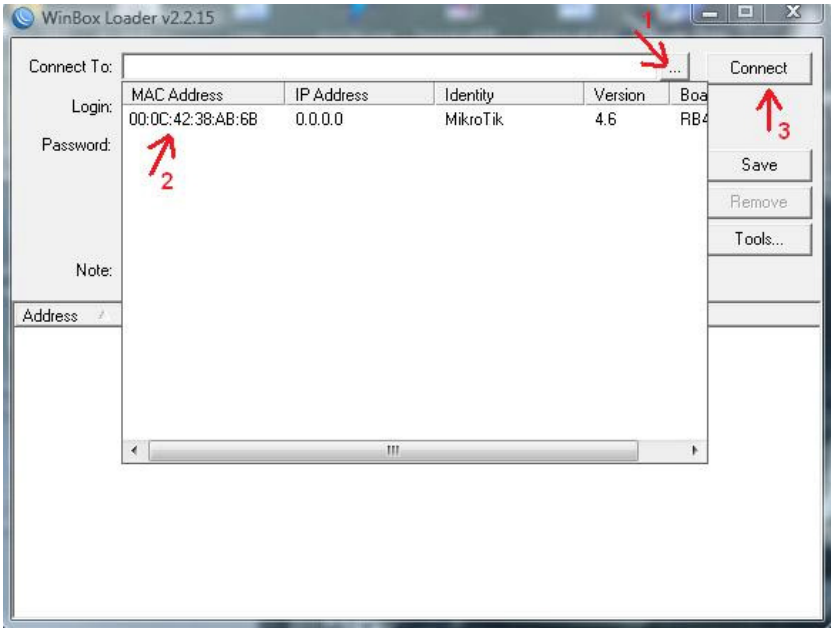
a. Command Line Interface, which can be accessed over IP address using telnet or SSH or over MAC address using MAC telnet
b. Winbox configuration utility, which can access to device over IP or MAC address
c. Web based configuration, which can be accessed over IP address only, using regular web browser

To access the configuration interfaces, make sure you are using the computer connected to the same network as the device. The device has **no default IP address** assigned. Default user name is **admin** and there is no password. If you configure the device for first time, use the **Winbox configuration utility,** because it can search MAC address or IP address of the device.

1. **Winbox configuration utility** - This is the most recommended method to configure the device. The **winbox.exe** program is on the attached CD. You can run this program natively on Windows operating systems or using WINE on Linux.

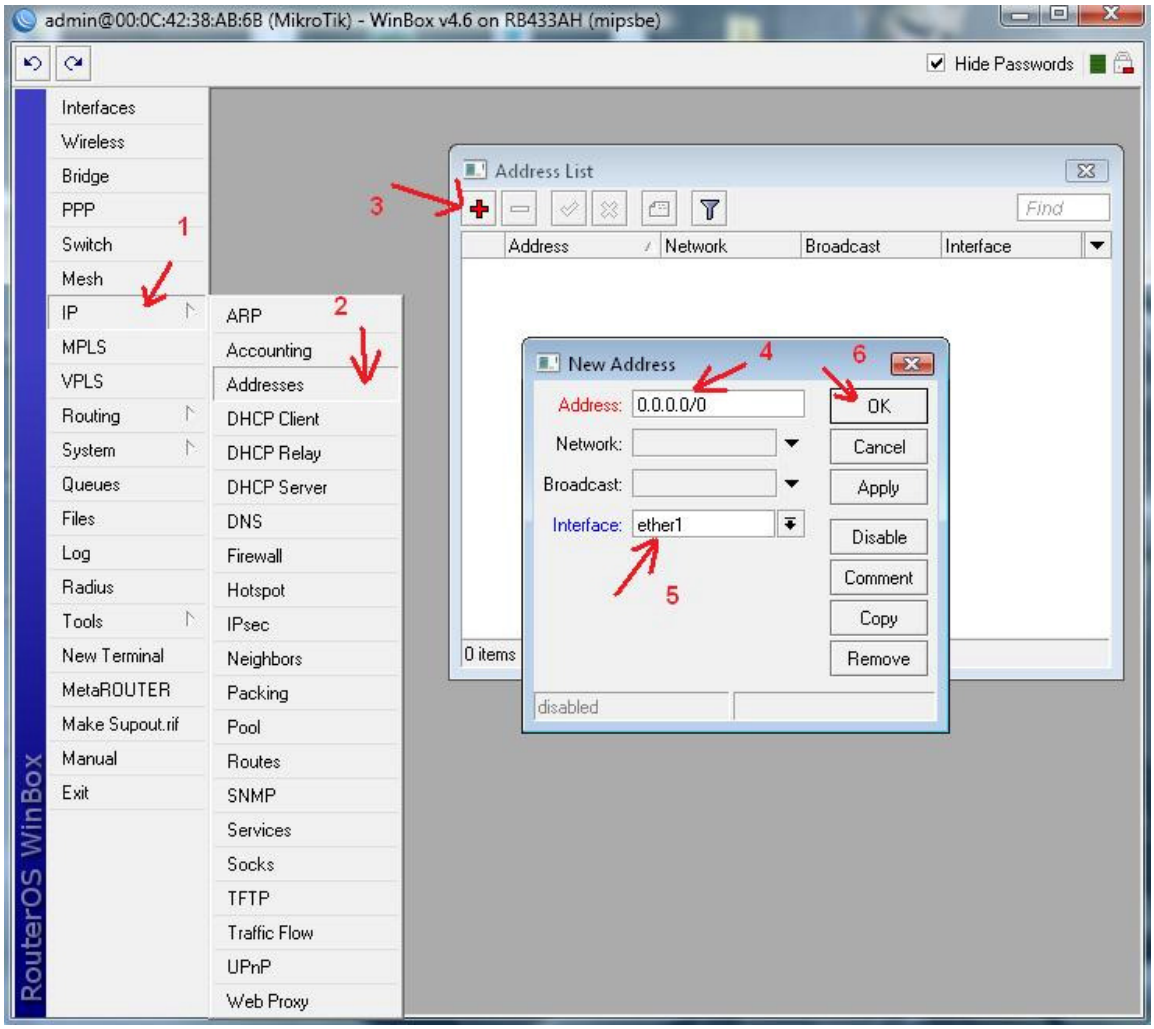


Put the IP address or MAC address of device in to the “Connect To” field. You can use the “…” button to search MikroTik based devices in your network and show their MAC and IP address. Then put user name to the “Login” field (default: admin) and password to the “Password” field (default left blank). Then click connect button.



Searching MikroTik devices in your network

To assign the IP address to the device in the menu click “IP -> Addresses”. Then click “+”, fill IP address to the “Address” field and select the interface to which the address should be assigned. Then click OK.



In the same way you can assign IP addresses to other interfaces. See attached Reference manual for more configuration advice.

2. **Command Line Interface (CLI)** – The build-in CLI can be accessed using telnet or SSH over IP address or using MAC telnet over MAC address.

   In Windows you can use standard telnet client which is part of operating system. Or you can use PuTTY program which is advanced Telnet and SSH client. PuTTY is available for free. Use Google to find the download link.

   On the attached CD there is terminal.exe program, which is MAC telnet client.

   To access CLI from the Linux system you would need to have installed related telnet client and SSH client packages.

3. **Web based configuration Interface (WBCI)** – WBCI can be accessed from your regular web browser. Use address http://xxx.xxx.xxx.xxx, where xxx.xxx.xxx.xxx is the IP address of the device. Web based configuration has **limited possibilities**. You can use it to change IP address, set basic wireless parameters, set routes, simple firewall rules and simple queues. You can not use it to set advanced wireless parameters, DHCP, advanced firewall rules, advanced routing protocols, hotspot, access advanced diagnostic tools and many other useful features.

   The main purpose of WBCI is to **display graphs and statistics**, which you need to configure over Winbox or CLI.

   You also use WBCI to download the Winbox utility in case you lost CD with utility.

Configuration Manual

Please read the MikroTik RouterOS Reference manual for advanced configuration. You can find it on the CD attached to this product.

Warranty Information

Device is covered by 2 year manufacturer warranty. Ferimex repairs or replaces at no charge any defective items that do not function because of Ferimex production flaws. Ferimex does not replace items with customer damage or customer misuse, or damage by lightning, electricity, power surges, mechanical damage from dropping or misuse, etc.

The warranty will be voided if the device is opened.

Technical Parameters

a) Outdoor Multi-Router 3-2

Manufacturer	Ferimex IT
Purpose	multi-function router
Software	MikroTik RouterOS™
Processor	680MHz MIPS
Ethernet LAN	3x 10/100Base-T
Wireless port	2x 2,4 Ghz/5Ghz 802.11a+b+g
Chipset	Atheros AR5414
Output Power/ Receive Sensitivity	
IEEE 802.11a:	17dBm/-88dBm @ 6Mbps
	13dBm/-71dBm @ 54Mbps
IEEE 802.11b:	19dBm/-95dBm @ 1Mbps
	19dBm/-90dBm @ 11Mbps
IEEE 802.11g:	18dBm/-90dBm @ 6 Mbps
	15dBm/-73dBm @ 54Mbps
Connector	2x SMA reverse polarity
Power supply	POE, 802.3af
Warranty	2 years
Temperature range	-30 to +50℃ (operating)
Humidity of surroundings	max. 95% (non-condensing)

Power Over Ethernet Injector

Type	Active PoE Injector
AC Input Voltage	100-240V
AC Input Frequency	50 Hz
AC Input Current	0.3A MAX
DC Output Voltage	48 V
DC Output Current	0.35A

b) Outdoor Multi-Router 1-1

Manufacturer	Ferimex IT
Purpose	multi-function router
Software	MikroTik RouterOS™
Processor	300MHz MIPS
Ethernet LAN	0x 10/100Base-T
Wireless port	1x 2,4 Ghz/5Ghz 802.11a+b+g
Chipset	Atheros AR5414
Output Power/ Receive Sensitivity	
IEEE 802.11a:	17dBm/-88dBm @ 6Mbps
	13dBm/-71dBm @ 54Mbps
IEEE 802.11b:	19dBm/-95dBm @ 1Mbps
	19dBm/-90dBm @ 11Mbps
IEEE 802.11g:	18dBm/-90dBm @ 6 Mbps
	15dBm/-73dBm @ 54Mbps
Connector	1x SMA reverse polarity
Power supply	POE, 802.3af
Warranty	2 years
Temperature range	-30 to +50°C (operating)
Humidity of surroundings	max. 95% (non-condensing)

Power Over Ethernet Injector

Type	Active PoE Injector
AC Input Voltage	100-240V
AC Input Frequency	50 Hz
AC Input Current	0.3A MAX
DC Output Voltage	48 V
DC Output Current	0.35A

c) Outdoor Multi-Router 1-1 LITE

Manufacturer	Ferimex IT
Purpose	multi-function router
Software	MikroTik RouterOS™
Processor	300MHz MIPS
Ethernet LAN	0x 10/100Base-T
Wireless port	1x 2,4 Ghz/5Ghz 802.11a+b+g
Chipset	Atheros AR5414
Output Power/ Receive Sensitivity	
IEEE 802.11a:	17dBm/-88dBm @ 6Mbps
	13dBm/-71dBm @ 54Mbps
IEEE 802.11b:	19dBm/-95dBm @ 1Mbps
	19dBm/-90dBm @ 11Mbps
IEEE 802.11g:	18dBm/-90dBm @ 6 Mbps
	15dBm/-73dBm @ 54Mbps
Connector	1x SMA reverse polarity
Power supply	POE, 802.3af
Warranty	2 years
Temperature range	-30 to +50℃ (operating)
Humidity of surroundings	max. 95% (non-condensing)

Passive Power Over Ethernet Injector

Type	Passive PoE Injector
DC Input Voltage	10 V ~ 28 V
DC Input Current	1,3 A MAX

Manufacturer

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End of manual.