

# USER MANUAL

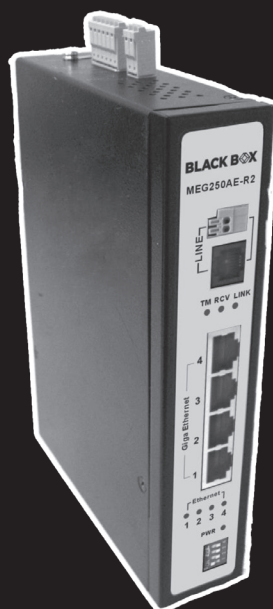
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MEG250AE-R2

# INDUSTRIAL- GRADE VDSL2 MODEM

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24/7 TECHNICAL SUPPORT AT 1.877.877.2269 OR VISIT [BLACKBOX.COM](http://BLACKBOX.COM)



**BLACK BOX®**

## MEG250AE-R2

Dear customer,

Thanks for purchasing MEG250AE-R2, a VDSL2 single-port bridge equipped with four 10/100Mbps Ethernet ports that provide an economical solution for your industrial-grade applications. Compliant with the ITU-T G.993.2 VDSL2 standard, the MEG250AE-R2 supports a maximum bandwidth of up to 100Mbps symmetric in VDSL2 Profile solution. The MEG250AE-R2 also supports both central office (CO) and customer-premises equipment (CPE) modes, selectable through a DIP Switch.

MEG250AE-R2 uses DIN-Rail and Industrial-grade design. It is compliant with quick, easy, economical, and high-performance broadband/multimedia services to industrial environments, such as Factory, MRT, Train station, Ticket vending machine, Parking system, Monitoring system, and point-to-point applications.

**Black Box MEG250AE-R2 is not compatible with MEG201AE, MEG201RAE, MEG201AE-R2, MEG201RAE-R2, or MEG821AE.**

Contact your nearest Black Box office if you have any product questions. Visit [www.black-box.eu](http://www.black-box.eu) for a list of countries, offices, phone numbers, and addresses.



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## MEG250AE-R2

### Warranty

MEG250AE-R2 is sold with a standard 12-month warranty unless your local dealer or Black Box office agreed to a longer warranty period.

The warranty does not include:

- Using any power supplies other than the one(s) included with your product. **Use ONLY** the dedicated power supply for your device. Connect the power to the right supply voltage (110V AC used for North America and 230V AC used for Europe. MEG250AE-R2 supports 15~48 VDC dual power input (redundant power).
- Opening the device
- Changing the device
- Placing screws or nails within or through the device
- Damages caused by surge or overpower
- Damages caused by heat, water, or direct sunshine

If you experience any error or problem, contact your local dealer or nearest Black Box office for support. If you are told to send the device for RMA and repair, **ALWAYS** ship the entire device, including its power supply.

### Safety warnings

- DO NOT open the device. Opening or removing covers can expose you to dangerous high voltage points or other risks.
- ONLY allow qualified service personnel to service the device.
- Place connecting cables carefully so that no one will step on them or stumble over them. DO NOT allow anything to rest on the power cord, and do NOT locate the product where anyone can walk on the power cord.
- DO NOT install nor use your device during a thunderstorm. There may be a remote risk of electric shock from lightning.
- DO NOT expose your device to dampness, dust, or corrosive liquids.
- DO NOT use this product near water, for example, in a wet basement or near a swimming pool.
- DO NOT obstruct the device's ventilation slots or staple the units, since insufficient air flow may harm your device.
- DO NOT place items on the device.
- DO NOT use the device for outdoor applications, and verify that all the connections are indoors or have waterproof protection.
- Keep the device and all its parts and accessories out of reach of children.
- Clean the device using a soft and dry cloth rather than liquid or atomizers. Power off the equipment before cleaning it.

## MEG250AE-R2

### MEG250AE-R2 Setup Steps

MEG250AE-R2 is an Industrial-Grade, point-to-point, Ethernet modem using simple telephony wires as a media. MEG250AE-R2 has an IP30 chassis, 4 LAN Ports (10/100), and an extended temperature range. MEG250AE-R2 is for DIN-Rail mounting and for DC powering from 15 to 48V DC. MEG250AE-R2 also has an alarm relay contact.

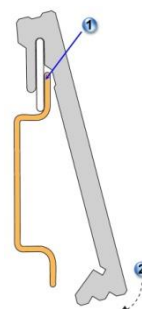
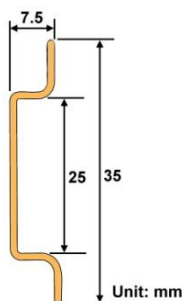
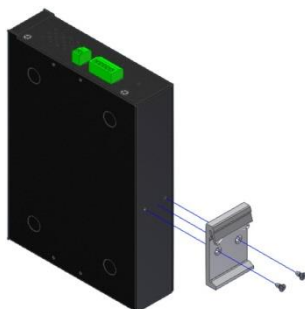
To get started, unpack the device.

After unpacking:

1. Take out the “2pin/6pin terminal block” from inside the accessory kit, and install to the modem properly.
2. Configure one device to be installed on side A to be the Transmitter (TM). Set DIP Switch #1 (Mode) to ON.
3. Configure one device to be installed on side B to be the Receiver (RCV). Set DIP Switch #1 (Mode) to OFF.
4. Leave the other DIP Switches #2 to #4 in factory default (OFF-OFF-OFF).
5. Route your two wires to the LINE Port by either using the RJ-11 (middle pins) or the terminal block.
6. Connect the power supplies and wait for the LINE LED to light up.

Troubleshooting:

1. If the line is unstable (LINE LED is on for some minutes, then again off for some seconds, then again on, etc.), change DIP Switch #3 (SNRM) to ON. Then reboot both units.
2. If you experience Network dropouts, change DIP Switch #4 (Interleave) to ON. Then reboot both units.
3. If you experience interferences or bad audio quality on nearby telephony transmissions, change DIP Switch #2 (Band) to ON. Then reboot both units.
4. Install the DIN-RAIL as follows:
  - Install the DIN-Rail mounting plate to the MEG250AE-R2.
  - Use the suitable DIN-Rail to install; refer to the dimensions of the DIN-Rail.
  - Insert the top of the DIN-Rail into the top slots on the DIN-Rail mounting plate. The DIN-Rail mounting plate will snap into place.



## MEG250AE-R2

The maximum bandwidth of MEG250AE-R2 is 100Mbps symmetrical up to a cable length of 300-400m. The exact number of meters depends upon various factors, including your wire diameter, quality, and number of interconnects.

The maximum cable length of MEG250AE-R2 is up to 3000m with quality thick cables. For longer cables (>300-400m) the bandwidth is lower and asymmetrical. Review the performance/reach table later in this manual.

**CAUTION: Avoid using telephony RJ-11 ribbon cables. These cables are built with very low diameter stranded cables. Using them will cause lower bandwidth and shorter reach.**

## What does Interleave mean?

This feature is used to protect the transmission and the stability of the connection against crosstalk issues. Crosstalk comes from signals on other cables. With the Interleave feature your connection and transmission will be more reliable.

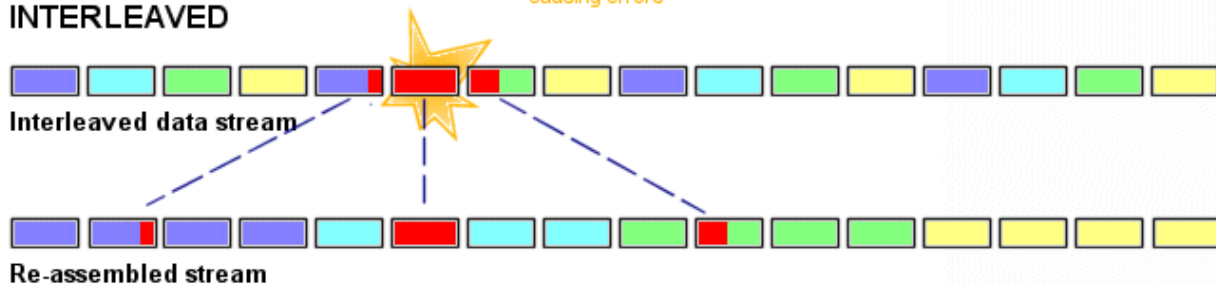
Without Interleave you may lose some data through noise caused by crosstalk. This leads to a rerequest of data, which slows down your overall bit rate and net bandwidth. With many lost data packets you may also lose synchronization between transmitter and receiver.

Interleaving is a method of taking data packets, chopping them up into smaller bits, and then rearranging them so that once contiguous data is now spaced further apart into a non-contiguous stream. Data packets are reassembled into the right order of data by the receiver.

### FAST



### INTERLEAVED



If your line is particularly susceptible to bursts of noise, then interleaving should improve your VDSL experience. Noise on the line caused by crosstalk will not damage a complete block of data, but parts of data blocks, which can be reassembled by CRC.

Note: Higher interleave means higher latency.

## MEG250AE-R2

### What does SNRM mean?

SNRM is the Signal to Noise ratio. Any xDSL device puts a signal on a cable which degrades with every meter and kilometer of cable. The degradation comes from noise produced by other signals on nearby cables, by high power devices (such as elevators), by smartphones (EMI), and by other wireless devices.

At the end the signal of the xDSL device has a certain strength in comparison to the noise. You can compare this with two people talking in an empty room talking (no noise) or two people talking in a crowded room (high noise).

Many xDSL devices automatically adjust bandwidth and modulation. The better the signal in comparison to the noise comes through, the higher the bandwidth can be.

Setting the MEG250AE-R2 to a higher SNRM of 9db means that the modem will synchronize the line with a spare of 9db budget. If you experience high EMI at your installation, a higher spare budget means more stability but less bandwidth.

### What does G.INP mean?

All DSL lines suffer at various degrees from noise bursts. This interference may come from electric storms, power supplies, radio transmissions, or just general background electrical interference. This noise can drown out the signal which is used to transmit your broadband data. If the noise is stronger than the signal, then data packets are lost, which can cause slow page loading, interrupt video streams, etc.

G.INP is an Error Protection method which helps to prevent the loss of data in the event of noise bursts by using a retransmission buffer at the physical layer (in the Modem/Router/CO side). G.INP retransmission works in a similar way to TCP retransmission.

Notable differences between G.INP and TCP:

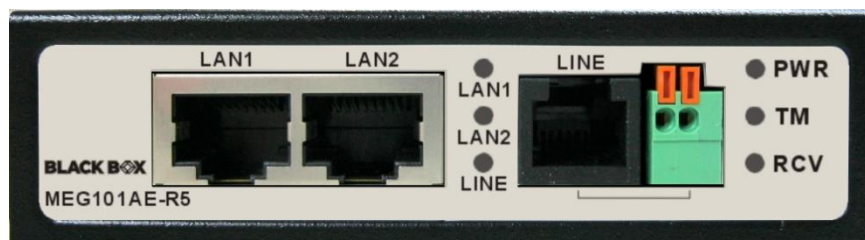
- TCP/IP is a software suite of protocols between two end-to-end points. For example, web browsers, such as Edge and Chrome, use the TCP/IP protocol HTTP to establish a connection between a PC and a remote web server. If data isn't received or is corrupt, then the web browser will attempt to rerequest the data direct from the server.
- G.INP is a software construct carried out at the physical layer. For example, data sent from the CO side is wrapped in a special packet (DTU). The router will check that data isn't corrupt and then either forward the data onwards to our PC, or, if corrupt, rerequest the data from the CO side. The transmitting end needs to retain a temporary buffer to store data in case data needs to be retransmitted.

Although G.INP as an invention has existed for several years and it is a software construct (for example, firmware), many Telco companies delayed rollout since it relies on hardware resources to process the DTU and store data in the retransmission buffer at the transmitting end.

Since the CO side will be doing ReTX buffering in the downstream direction and will have many users on each line card in the CO side, downstream retransmission will require significant hardware resources on the CO side.

### What else is available?

There is also commercial version MEG101AE-R5 available. It is a point-to-point, Ethernet bridge using simple telephony wires as a media. MEG101AE-R5 offers you two LAN 10/100/1000 Mbps ports. Therefore, MEG101AE-R5 is a fully switched L2 device.





## MEG250AE-R2

### Installing the Modem MEG250AE-R2 Hardware Installation

MEG250AE-R2 can be used for any indoor, dry, and well temperature environment. Do not exceed the temperature range (-20°C ~ +70°C). Stapling the MEG250AE-R2 is not permitted.

The Modem should be located in a cool and dry place with at least 10 cm (4") of space at the front and back for ventilation.

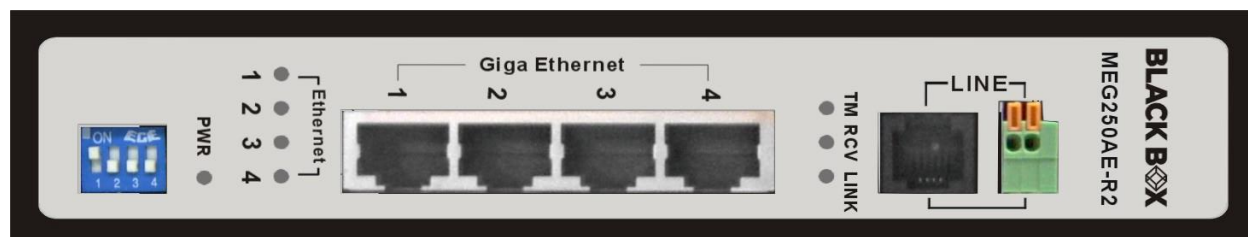
Place the Modem out of direct sunlight and away from heat sources or areas with a high amount of electromagnetic interference.

Check if network cables and connectors needed for installation are available.

Avoid installing this device where a radio amplifying station or transformer station is nearby.

Do not use any telephony ribbon cables.

Do not use any low diameter cables. At least AWG26 is recommended, and AWG24 is better.



MEG250AE-R2 is not capable of doing PoE PSE or PD. You may connect PoE devices, but they will not be powered.

Read page 4 for setup steps.

**MEG250AE-R2****Front Panel Description:**

The front panel shows from left to right:

LAN1~LAN4 Port	Network Ports 10/100/1000Mbps, RJ-45, Auto-negotiation
LAN1~LAN4 LED	Off if no link, On if link and flashing while transferring data
LINE LED	Off if no link, On if linked, flashing slowly if just synchronizing, flashing fast if transferring data.
LINE Port	2 Wire VDSL2 Connection. Use either RJ-11 (middle pins)
or	Terminal Block, never both. You can use RJ-11 on Transmitter and Terminal Block on Receiver side
PWR LED	Off if unpowered, On if powered
TM LED	On if running in Transmitter mode
RCV LED	On if running in Receiver mode
DIP Switches	

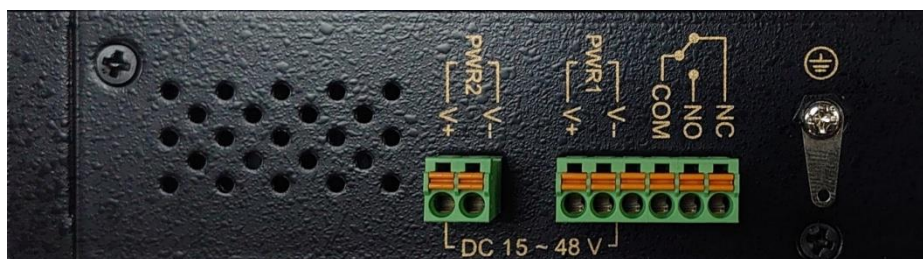
DIP Switch on rear panel				Config Mode	Description
PIN1	PIN2	PIN3	PIN4		
OFF	OFF	OFF	OFF	Sy-Auto I_8/2 (SNRM 8/8)	Symmetric Auto, Max. Interleave=8, Min.Inp=2, SNRM=8 (Default)
OFF	ON	OFF	OFF	NSy-Auto I_8/2 (SNRM 8/8)	non symmetric Auto, Max. Interleave=8, Min.Inp=2, SNRM=8
OFF	OFF	ON	OFF	Sy-Auto I_8/2 (SNRM 6/6)	Symmetric Auto, Max. Interleave=8, Min.Inp=2, SNRM=6
OFF	ON	ON	OFF	NSy-Auto I_8/2 (SNRM 6/6)	Non symmetric Auto, Max. Interleave=8, Min.Inp=2, SNRM=6
OFF	OFF	OFF	ON	Sy-Auto G.INP_17/2/41 (SNRM 12/12)	Symmetric Auto, enable G.INP, enable retransmission, SNRM=12
OFF	ON	OFF	ON	NSy-Auto G.INP_17/2/41 (SNRM 12/12)	non symmetric Auto, enable G.INP, enable retransmission, SNRM=12
OFF	OFF	ON	ON	Sy-30a-D2.2M G.INP_17/2/41 (Rate 20/20) (SNRM 24/24)	Symmetric 30a, disable 0~2.2MHz, enable G.INP, enable retransmission, Max.Line rate=20Mbps, SNRM=24
OFF	ON	ON	ON	Annex-A-17a-eu32_I-8/2 (SNRM 6/6)	17A Annex A Eu32, Max. Interleave=8, Min. Inp=2, SNRM=6
ON	NA	NA	NA	RCV Mode	Switching to Receiver mode



## Rear Panel Description:



## Right Side Panel Description:



The rear panel shows from left to right:

### Power

The MEG250AE-R2 has two sets of power inputs, power 1 and power 2, which are located on the MEG250AE-R2's side panel. Power 1 is the bottom two contacts on the upper 6-contact terminal block, and power 2 is the top two contacts on the lower 2-contact terminal block.

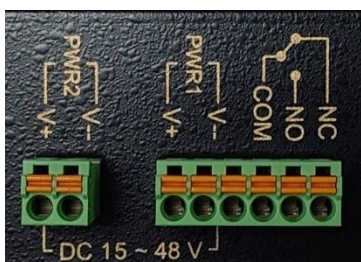
### Ground Clip

Connect to ground/earth. The surge protection inside MEG250AE-R2 can only work with a proper ground connection on both sides.

## MEG250AE-R2

**STEP 1:** Insert the negative/positive DC wires into the V-/V+ terminals, respectively.

**STEP 2:** Place the DC wires into terminal block connector: Push the orange switch of the terminal block with a small flat-blade screwdriver, then the DC wires insert the orange button below the circle hole, and release the small flat-blade screwdriver.



**STEP 3:** Insert the plastic terminal block connector prongs into the terminal block receptor, which is located on the MEG250AE-R2 's side panel.

**Attention:**

1. Please note that the negative DC wire must connect into the V- terminal, and the positive DC wire must connect into the V+ terminal. If contrary to the location of the wiring, MEG250AE-R2 will enable Reverse Polarity Protection function automatically. DC power will not be able to flow directly through the machine.
2. Please note that if the DC power current exceeds 3A, MEG250AE-R2 will enable the Overload Current Protection function automatically. DC power will not be able to directly flow through the machine.

### Safety Caution!

1. Be sure to disconnect the power when installing/uninstalling the terminal block and power cable.
2. Please note that the user can use 15~48VDC dual power input (Redundant Power). Do not exceed DC 48V.
3. Be sure to disconnect the power before installing and/or wiring your MEG250AE-R2 modem.
4. Please calculate the maximum possible current in each power wire and common wire. Observe all electrical codes dictating the maximum current allowable for each wire size. If the current goes above the maximum ratings, the wiring could overheat, causing serious damage to your equipment.

## MEG250AE-R2

### Wiring the Relay Contact

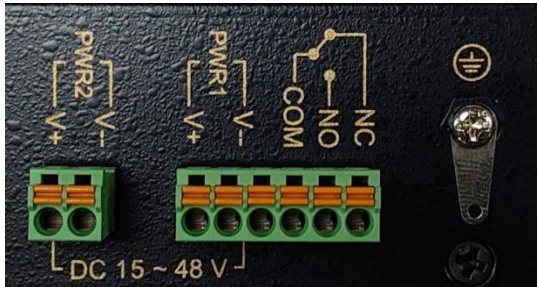
The MEG250AE-R2 has a set of relay outputs. The relay contact uses two of the terminal block's contacts located on the MEG250AE-R2's side panel. The following table shows how to connect the wires to the terminal block connector. In this section, we illustrate the meaning of the two contacts used to connect the relay contact.

#### Fault Tip:

The relay contacts of the 6-pin terminal block connector are used to detect user-configured events. The three wires attached to the fault contacts form an open circuit when a user-configured event is triggered. If a user-configured event does not occur, the fault circuit remains closed. The relay output has current carrying capacity of 1 A @ 24 VDC.

The following Table shows the Relay circuit and power status.

**Table** Relay Circuit Status and Power ON/OFF Status.

	Power ON	COM & NC	Open Circuit
		COM & NO	Short Circuit
	Power OFF	COM & NC	Short Circuit
		COM & NO	Open Circuit

### Grounding the MEG250AE-R2

MEG250AE-R2 is designed to enhance EMS performance by grounding. MEG250AE-R2 comes with metal DIN-Rail brackets for grounding the switches. For optimal EMS performance, connection of the right of the MEG250AE-R2 side panel ground lug to the grounding point.

#### Note:

Please connect the ground clip to the earth to prevent an electric shock when the user touches the device.

**Before user installed power and device, please read and follow these essentials:**

- Use separate paths to route wiring for power and devices. If power wiring and device wiring paths must cross, make sure the wires are perpendicular at the intersection point.

**Note:**

Do not run signal or communications wiring and power wiring through the same wire conduit. To avoid interference, wires with different signal characteristics should be routed separately.

- You can use the type of signal transmitted through a wire to determine which wires should be kept separate. The rule of thumb is that wiring sharing similar electrical characteristics can be bundled together.
- You should separate input wiring from output wiring.
- We recommend that you mark all equipment in the wiring system.



## MEG250AE-R2

### General Rules

#### Ethernet Port (RJ-45)

All network connections to the Modem Ethernet port must be made using Category 5, 5e, 6a, or 7. No more than 100 meters of cabling may be used between the HUB or Computer.

#### VDSL Port (RJ-11 or Terminal Block)

All connections to the VDSL RJ-11 Port or terminal block must use 24~26 Gauge phone wiring. We do not recommend using 28 Gauge or above phone line. The active pins are the two middle pins (2 and 3). To have a clear setup, we recommend having the VDSL line 1:1 straight through. This VDSL device works crossed and straight through.

##### **VDSL Port RJ-11 Pin out (6 pin wide, 4 pins existing, 2 pins active)**

Pin#	FUNCTION
1	Unused
<b>2</b>	<b>TIP</b>
<b>3</b>	<b>RING</b>
4	Unused

As an alternative to using the RJ-11 port, you can use the Terminal Block. Choose to use either or, but do not use both in parallel. The Terminal Block allows you to use simple wires without crimping a connector to it.

## **xDSL cabling**

No two cables are exactly identical. Physics, including cable length, matters for every cable..

Once you talk to your customer about the cables, you will get an estimation of the necessary cable length. Watch out for interconnects, and ask your customer about them. Every interconnect box influences the main physical factors of the cable:

### **Impedance and Capacitance**

With a good multimeter you should be able to measure the impedance of your cable. The impedance of a telephone wire should be between 50 and 150 Ohm per kilometer. Note that thin cables have high impedance, and thick cables have lower impedance.

Disconnect all equipment on Side A and Side B. Then do a short on Side A of the two wires you want to use. Next, measure the impedance with a digital multimeter on Side B from wire 1 to wire 2. Divide that value by two to get a rough idea of the cable's impedance. You should also measure the cable's isolation impedance. Therefore disconnect the short of Side A again and measure from wire 1 to wire 2. The value you get should be several MOhms.

This means, once your customer tells you the route would be 500m long, for example, but your result measuring the impedance is 200 Ohms or more, something is incorrect. Although not science, 200 Ohms is equal to a thick cable of 4 km or a thin cable of 1 km.

If the physics of your cable are within the functional limit of your xDSL device, you get a link. Otherwise, you will not get one. It is all about physics.





## Cabling Guidelines and Rules

In general, there are four rules about xDSL cabling:

- 1.) The thicker the cable, the better
- 2.) The weakest part of the cable makes up the quality of the whole
- 3.) Watch out for EMI sources
- 4.) Use twisted cabling

Rule 1 means that using an AWG24 cable is always better than using an AWG28. Watch out for stranded cables. Stranded cables are not as good as solid cables with the same AWG value.

Rule 2 means that one bad interconnect or a few meters of AWG28 cable is significant, even if the whole rest of the route is thick and good. That is why you should never use telephony ribbon cables to connect the xDSL modem. That is similar to a four-lane highway ending with one lane.

Rule 3: Any device using cables may have issues with EMI and interference. Check the route of the cables. Are they running near an elevator or any other device using high power/amps?

Rule 4: Use twisted cabling if available. Twisted cables are better because, without twisted cables, the crosstalk effect from other cables and signals is remarkable. Out there are also cables where four wires being twisted together (Quad cabling). Avoid using both cable pairs for the same type of technology.

**MEG250AE-R2****Compatibility**

Which one is compatible with which one?

- A MEG101AE
- B MEG101AE-R2
- C MEG101AE-R3
- D MEG101AE-R4
- E MEG101AE-R5
- F MEG201AE
- G MEG201AE-R2
- H MEG250AE
- I MEG250AE-R2
- J MEG801AE
- K MEG801AE-R2
- L MEG821AE
- M MPG101AE-R2

	A	B	C	D	E	F	G	H	I	J	K	L	M
A	Y	N	N	N	N	N	N	Y	N	N	N	N	N
B	N	Y	Y	N	N	N	N	N	N	N	N	N	N
C	N	Y	Y	N	N	N	N	N	N	N	N	N	N
D	N	N	N	Y	Y	N	Y	N	Y	Y	N	Y	N
E	N	N	N	N	Y	Y	N	N	Y	Y	N	N	N
F	N	N	N	N	N	Y	N	N	N	Y	N	Y	N
G	N	N	N	Y	N	N	Y	N	Y	Y	N	Y	N
H	Y	N	N	N	Y	N	N	N	Y	N	N	Y	N
I	N	N	N	Y	Y	N	N	Y	Y	N	N	N	N
J	N	N	N	Y	Y	Y	Y	N	N	N	N	N	N
K	N	N	N	N	N	N	N	N	N	N	Y	N	N
L	N	N	N	Y	N	Y	Y	Y	N	N	N	N	N
M	N	N	N	N	N	N	N	N	N	N	N	N	Y

You always need matching pairs, meaning one Transmitter and one Receiver.  
MEG801AE, MEG801AE-R2, and MEG821AE are always functional as a Transmitter.

MEG101AE, MEG101AE-R2, MEG101AE-R3, MEG101AE-R5, MEG201AE,  
MEG201AE-R2, and MPG101AE-R2 are either Transmitter or Receiver and cannot be  
changed from one to the other.



## MEG250AE-R2

### What can I do if my line is too long?

Often there are different routes to get to the “other side.” Try to find out if there is another one. If not, Black Box has other xDSL devices that will work in your circumstances.

Also check our Etherlink modems. Check [www.black-box.eu](http://www.black-box.eu) for product details, features and more.

### Firmware Upgrade

The MEG250AE-R2 units cannot be firmware upgraded. The switches MEG821AE can be firmware upgraded by TFTP or RS-232. Check the switches’ manual for instructions.

### Tech Support

If you have any questions, contact Black Box Tech Support. Check [www.black-box.eu](http://www.black-box.eu) for phone numbers of your local office.

**D** Data   **V** Voice   **H** Hotline



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 <a href="#">Canada</a>	 <a href="#">Japan</a>	 <a href="#">Sverige</a>
 <a href="#">Chile</a>	 <a href="#">México</a>	 <a href="#">Schweiz</a>
 <a href="#">Danmark</a>	 <a href="#">Nederland</a>	 <a href="#">United Kingdom</a>
 <a href="#">Deutschland</a>	 <a href="#">Norge</a>	 <a href="#">United States of America</a>

**MEG250AE-R2****Product Specification**

<b>Standard:</b>	IEEE802.3 / IEEE802.3u / IEEE802.3ab standard G993.2 VDSL2 standard
<b>Physical Interface:</b>	(4) RJ-45 10/100/1000Mbps autoneg. Ethernet port (1) RJ-11/Terminal Block connector for VDSL2 line port (1) DIP Switch (1) removable 6-contact terminal blocks for power1 and alarm contact (1) removable 2-contact terminal blocks for power2 (1) Grounding Connector
<b>Cable Connections:</b>	RJ-45 (Ethernet): Category 3~7 UTP/STP RJ-11 (VDSL2): Twisted Pair phone wire
<b>LED Indicators:</b>	(1) Power LED (4) Link/Active Status for Ethernet port (1) Link/Speed LED for VDSL2 port (1) Transmitter Mode indicator LED (1) Receiver Mode indicator LED
<b>VDSL2 Line Code:</b>	Discrete multitone (DMT) modulation
<b>VDSL2 Transmission Mode:</b>	Packet Transfer Mode (PTM)
<b>VDSL 2 Chipset:</b>	Metanoia
<b>Typical Power Consumption:</b>	6 W
<b>Power Requirement:</b>	Input Voltage: 15 to 48VDC Input Current: 0.5~0.125A
<b>EMC:</b>	EMI Compliant: FCC class A EMS Compliant: CE mark
<b>Operating Temperature:</b>	-20 ~ +70°C (-4 ~ +158°F) Fanless, free air cooling
<b>Storage Temperature:</b>	-40 ~ +70°C (-40 ~ +158°F)
<b>Humidity:</b>	5 to 95% (non-condensing)
<b>Weight:</b>	About 0.63 kg
<b>Dimensions:</b>	170 x 121 x 35 mm ( 6.7" x 4.76" x 1.37")



## MEG250AE-R2

### Performance / Reach Table

This test was conducted with AWG24 simulation cards, Windows® 7/10/11 machines at 26 degrees Celsius. Simulation cards do not simulate EMI, Interference, and Interconnects. Consequently, your results will vary.

MEG250AE-R2(TM) ->MEG250AE-R2(RCV) Max. Datarate (Down speed/Up speed) Mbps								
Length	Profile 1	Profile 2	Profile 3	Profile 4	Profile 5	Profile 6	Profile 7	Profile 8
100m	147.68/147.68	196.51/95.35	162.21/154.48	162.21/154.48	144.66/139.88	189.13/87.99	19.78/19.78	121.95/49.06
200m	138.20/132.74	187.81/78.84	144.19/138.74	144.19/138.74	122.30/116.98	168.87/68.46	19.78/19.78	114.89/49.06
300m	109.67/117.50	157.64/65.76	117.51/124.17	117.51/124.17	91.83/101.99	142.68/49.65	19.78/19.78	101.06/46.67
400m	80.91/91.01	131.94/41.05	89.54/98.62	89.54/98.62	65.75/70.87	109.96/35.23	19.78/19.78	85.57/42.23
500m	56.72/72.57	99.23/36.79	65.46/78.49	65.46/78.49	44.43/59.03	88.25/27.12	15.25/19.77	74.74/34.87
600m	44.21/51.75	76.68/25.83	52.38/55.17	52.38/55.17	32.82/43.32	61.50/21.47	12.02/10.43	58.90/29.37
800m	21.85/28.91	48.31/10.87	22.77/33.41	22.77/33.41	21.62/20.28	43.10/9.83	x	37.29/16.69
1000m	23.24/14.29	36.90/7.92	23.42/16.84	23.42/16.84	26.34/12.04	32.12/6.00	x	39.18/6.16
1200m	22.07/10.55	28.69/3.27	23.69/11.50	23.69/11.50	20.85/8.51	10.24/2.56	x	27.74/3.99
1400m	15.56/8.75	27.39/2.48	17.78/9.29	17.78/9.29	12.65/8.76	9.03/2.50	x	27.09/1.25
1600m	6.66/7.77	23.11/2.37	8.98/9.26	8.98/9.26	6.49/4.90	7.39/2.45	x	26.96/0.50
1800m	6.38/4.69	17.24/2.08	6.52/5.93	6.52/5.93	5.81/2.68	4.92/2.14	x	22.76/0.46
2000m	5.88/2.82	13.16/1.91	6.28/3.72	6.28/3.72	5.68/0.93	2.82/1.82	x	17.89/0.46
2200m	5.39/1.46	10.35/1.66	5.89/2.19	5.89/2.19	x	x	x	14.48/0.42
2400m	4.74/1.08	7.51/1.43	4.58/1.31	4.58/1.31	x	x	x	11.17/0.41
2600m	4.14/0.64	5.76/1.17	4.47/0.87	4.47/0.87	x	x	x	8.21/0.35
2800m	2.29/0.90	3.84/0.89	3.38/0.86	3.38/0.86	x	x	x	6.86/0.33
3000m	x	2.66/0.47	x	x	x	x	x	5.57/0.30

#### Remark:

##### MEG250AE-R2Config Mode

1. Sy-Auto I\_8/2 (SNRM 8/8)
2. NSy-Auto I\_8/2 (SNRM 8/8)
3. Sy-Auto I\_8/2 (SNRM 6/6)
4. NSy-Auto I\_8/2 (SNRM 6/6)
5. Sy-Auto G.inp\_17/2/41 (SNRM 12/12)
6. NSy-Auto G.inp\_17/2/41 (SNRM 12/12)
7. Sy-30a-D2.2M G.inp\_17/2/41 (Rate 20/20) (SNRM 24/24)
8. Annex-A-17a-eu32\_I-8/2 (SNRM 6/6)

##### Profile

- 30a/17a Auto
- 30a/17a Auto
- 30a/17a Auto
- 30a/17a Auto
- 30a/17a Auto
- 30a/17a Auto
- 30a
- 17a

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