ecler VIDEO SYSTEMS

VEO-XPT412

4K HDBaseT EXTENDERS
4K 18Gbps HDBaseT 150m Extender Kit

USER MANUAL

EN

VEO-XPT412

500466-0100

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1. PRECAUTIONS

1.1 Important Notice

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

WARNING: SHOCK HAZARD - DO NOT OPEN
AVIS: RISQUE DE CHOC ÉLECTRIQUE - NE PAS OUVRIR

The flashing light with an arrowhead symbol inside an equilateral triangle on it is intended to alert the user of the presence of non-insulated "dangerous voltage" within the enclosure, which might be of sufficient magnitude to pose a risk of electric shock to users.

The exclamation mark within an equilateral triangle is intended to alert the user of the requirement for important operating and maintenance (servicing), for which instructions may be found in the literature accompanying the appliance.

WARNING (If applicable): Terminals marked with symbol " ⚡ " may be of sufficient magnitude to pose a risk of electric shock. The external wiring connected to terminals requires installation by a technician, or the use of ready-made leads or cords.

WARNING: To prevent fire or shock hazard, do not expose this equipment to rain or humidity.

WARNING: A device with Class I manufacturing ought to be connected to a mains socket outlet with a protective earthing connection.

WARNING: Ecler products have a long lifetime of more than 10 years. This product must never be discarded as unsorted urban waste, but must be taken to the nearest electrical and electronic waste treatment centre.

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1.2 Key Safety Directions

1. Read the following directions.
2. Keep the following directions.
3. Heed all warnings.
4. Follow all directions.
5. Do not use this device in proximity to water.
6. Clean only with a dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other devices (including amplifiers) that may release heat.
9. Do not defeat the safety purpose of the polarized or grounding type plug. A polarized plug has two blades, being one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, contact a qualified electrician for a replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched, particularly at the plugs, convenience receptacles, and at the point of exit from the device.
11. Only use attachments/accessories specified by the manufacturer.
12. Unplug the device during lightening sorts or when unused for long periods of time.
13. Refer all servicing to qualified personnel. Servicing is required when the device has been damaged in any way, such as power supply cord or plug damage, liquid spillage or objects onto the device, the device has been exposed to rain or humidity, does not operate normally, or has been dropped.
14. Disconnecting from mains: When switching off the POWER switch, all the functions and light indicators of the unit will be stopped, but fully disconnecting the device from mains is done by unplugging the power cable from the mains input socket, therefore, it should always remain easily accessible
15. Equipment is connected to a socket-outlet with an earthing connection by means of a power cord.
16. The marking information is located at the bottom / rear of the unit.
17. The device shall not be exposed to dripping or splashing liquids, and no liquid-filled objects, such as a filled up glass, shall be placed on top of the device.

1.3 Cleaning Directions

⚠️ **Clean the unit with a soft, dry clean cloth** or slightly wet with water and neutral liquid soap only, then dry it with a clean cloth. Be careful that water never gets into the unit through any hole. Never use alcohol, benzine, solvents or abrasive substances to clean this unit.

NEEC AUDIO BARCELONA, S.L. accepts no liability for any damage that may be caused to people, animal, or objects due to failure to comply with the warnings above.

2. WARRANTY & ENVIRONMENT

Thank you for choosing our Ecler VEO-XPT412!
We greatly value your trust.

It is **VERY IMPORTANT to carefully read this manual and to fully understand its contents before any connecting takes place** in order to make the best use of this equipment, as well as to get the best performance from it.

To ensure optimal operation of this device, **we strongly recommend that its maintenance be carried out by our authorised Technical Services.**

All ECLER products are covered by warranty, please refer to www.ecler.com or the warranty card included with this product for the period of validity and conditions.

Ecler is truly committed with the environment and planet sustainability, energy saving and CO$_2$ emission reduction. Recycling materials and using non-contaminant components are also top priorities in our green crusade.

Ecler has deeply evaluated and analyzed the environmental impacts of all the processes involved in the production of this product, including packaging, and has alleviated, reduced and/or compensated for them.

3. PACKAGE CONTENTS

- 1 x VEO-XPT412 Transmitter Unit
- 1 x VEO-XPT412 Receiver Unit
- 1 x 24VDC International Power Supply (One PSU for both units)
- 1 x IR Blaster unit
- 1 x IR Receiver unit
- 4 x Euroblock plugs for RS-232 and audio cable termination
- 4 x Mounting ear
- 8 x Mounting screw
- First Steps Guide.
- Warranty card.

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4. DESCRIPTION & FEATURES

VEO-XPT412 is a professional HDBaseT extension kit that includes both a transmitter and a receiver. Its 18 Gbps HDMI® connectors allow for the extension of 4K video signals at 60Hz 4:4:4 up to 120 meters, or 1080p signals up to 150 meters, over a single Cat 5e or higher cable. Both the transmitter and receiver feature a stereo unbalanced output on an Euroblock connector for easy integration. Additionally, the VEO-XPT412 includes a bidirectional PoH feature, enabling the transmitter to be powered by the receiver and vice versa. It also supports RS-232 and bidirectional IR extension, making it a compact, flexible, and easy-to-use solution for applications requiring AV and control signal extensions.

4.1 Main Features

- Transmitter and receiver set for HDBaseT signal extension over a single Cat 5e or higher cable.

- Support for HDMI® 18Gbps 4K 60Hz 4:4:4 (with Colour Space Conversion technology) as specified in HDMI® 2.0b.

- Transmission distance for 4K/60Hz up to 120 meters and 1080p/60Hz up to 150 meters.

- Stereo unbalanced audio extraction via Euroblock connectors on both the transmitter and receiver.

- Support for HDR10, HDR10+, Dolby Vision, and HLG video signals.

- Support for audio formats LPCM 2.0/2.1/5.1/6.1/7.1, Dolby Digital, Dolby TrueHD, Dolby Digital Plus(DD+), DTS-ES, DTS HD Master, DTS HD-HRA, DTS-X.

- HDCP 2.2 compliant.

- Bidirectional IR control extension.

- Bidirectional PoH function.

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5. PANEL FUNCTIONS

5.1 Transmitter: Front and Rear Panel

1. **POWER LED:** This LED will be lit when the transmitter is power supplied.

2. **SERVICE**: Micro-USB port for firmware upgrade and user-defined EDID upload.

3. **DC 24V port:** Connect to this port the 24Vdc included power supply.

4. **HDBT OUT**: HDBaseT Output signal. Connect it to the HDBaseT receiver input port using a Cat 5e or higher cable. Only point-to-point connections are allowed.

5. **AUDIO OUT:** Stereo unbalanced audio extraction.

6. **HDMI® IN:** HDMI® input.

7. **IR IN:** 3.5mm jack to connect the IR receiver for IR pass-through.

8. **IR OUT:** Connect it to the included IR Blaster for extending an IR signal from the display to the source.

9. **RS-232 port:** 3-pin terminal block to connect the RS232 control device (e.g. PC) or a third-party device to be controlled.

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5.2 Receiver: Front and Rear Panel

1. **POWER LED:** This LED will be lit when the receiver is power supplied.

2. **SERVICE**: Micro-USB port for firmware upgrade and user-defined EDID upload.

3. **DC 24V port:** Connect to this port the 24Vdc included power supply.

4. **HDBT IN**: HDBaseT Input signal. Connect it to the HDBaseT transmitter output port using a Cat 5e or higher cable. Only point-to-point connections are allowed.

5. **AUDIO OUT:** Stereo unbalanced audio extraction.

6. **HDMI® OUT:** HDMI® output. Connect it to the end device (e.g. TV screen).

7. **IR IN:** 3.5mm jack to connect the IR receiver for IR pass-through.

8. **IR OUT:** Connect it to the included IR Blaster for extending an IR signal from the display to the source.

9. **RS-232 port:** 3-pin terminal block to connect the RS-232 control device (e.g. PC) or a third-party device to be controlled.
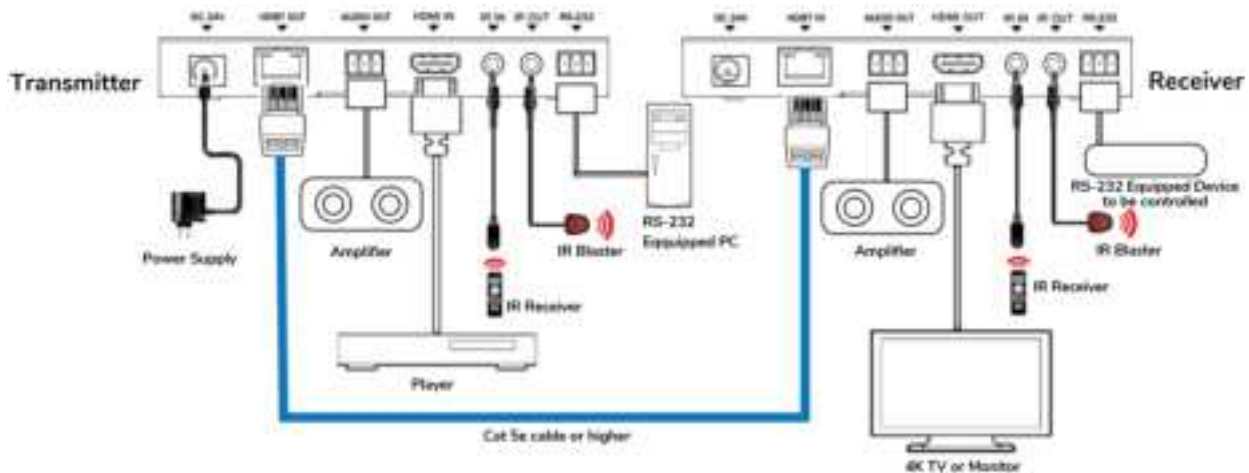
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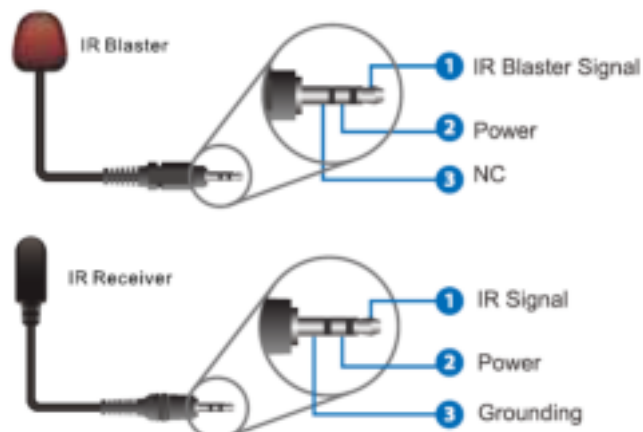PANEL FUNCTIONS

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6. INSTALL & CONNECT

⚠️ **Good quality standard Ethernet Cat 5e cable (or higher) are required to connect transmitter and receiver** in order to avoid connection issues and malfunctioning. **Shielded cables and shielded connectors are mandatory to ensure a good ground signal reference** to the receiver and avoid electromagnetic interferences along the cable.

⚠️ **Please insert/extract the HDMI® cables gently.**

1. **HDMI® signal sources such as Blu-Ray Player, STB, etc**: connect devices to the HDMI® input of VEO-XPT412 transmitter.

2. **HDMI® Display devices such as a 4K or 1080p display or projector**: connect devices to the HDMI® port of VEO-XPT412 transmitter/receiver.

3. **IR Blaster**: connect it to the IR-Out port of VEO-XPT412 transmitter and/or receiver

4. **IR Receiver**: connect it to the IR-In port of VEO-XPT412 transmitter and/or receiver.

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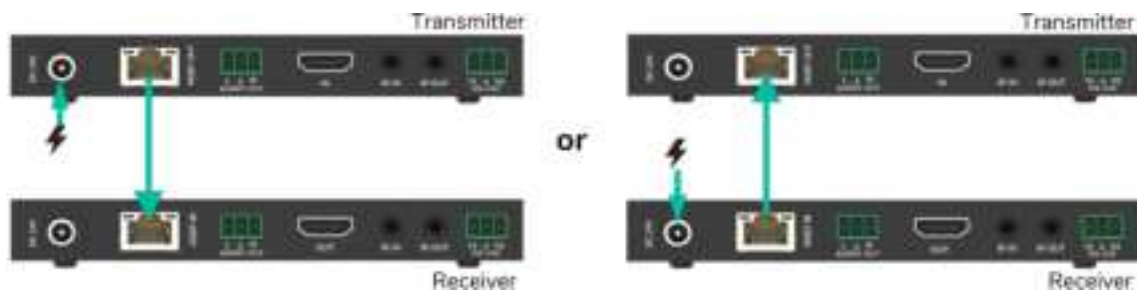PACKAGE CONTENTS

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5. **RS-232 Source and Endpoint devices (such as PC, Serial Controller, etc.):** connect to Euroblock RS-232 ports.

6. **Amplifiers or Audio devices:** connect to Audio ports of VEO-XPT412 transmitter and/or receiver.

7. **Connecting Transmitter & Receiver:** connect a Cat 5e or higher cable from RJ-45 output of transmitter to RJ-45 input of receiver

8. **Power on:** connect the 24VDC power supply to the VEO-XPT412 transmitter or receiver. Please note that **only one of them needs to be plugged into the mains socket and both will work.**

> 💡 **Bidirectional powering enables power sharing between transmitter and receiver over the same HDBaseT cable, reducing the need for a second power source.**

7. TECHNICAL DATA

7.1   Technical Specifications

VEO-XPT412

Video Performances	
Video Input Connectors	Transmitter: 1 x HDMI® Type A Female, 2.0, 18Gbps; 1 x RJ-45 Female , HDBaseT 1.0
Video Output connectors	Receiver: 1 x HDMI® Type A Female, 2.0, 18Gbps; 1 x RJ-45 Female , HDBaseT 1.0
Video Input Resolutions	480i, 480p, 720i, 720p, 1080i, 1080p up to 60Hz, 1920 x 1200/60Hz, 4K up to 60Hz
Video Output Resolutions	480i, 480p, 720i, 720p, 1080i, 1080p up to 60Hz, 1920 x 1200/60Hz, 4K up to 60Hz (with Colour Space Conversion Technology)
Chroma Subsampling	4:4:4, 4:2:2, 4:2:0
Colour Depth	8-bit (4K 60Hz 4:4:4) , 10-bit / 12-bit (4K 60Hz 4:2:2 – 4:2:0)
Colour Space	RGB, YCbCr, YUV
HDCP	2.2, 1.4
HDR	HDR10, HDR 10+, Dolby Vision, HLG
HDMI® Distance	Up to 4K/60Hz: 5m with IN/OUT HDMI® Cable Up to 1080p/60Hz: 10m with IN/OUT HDMI® Cable
Audio Performances	
Audio Output Connectors	3-pin Euroblock
Audio Formats	LPCM 2.0/2.1/5.1/6.1/7.1, Dolby Digital, Dolby TrueHD, Dolby Digital Plus(DD+), DTS-ES, DTS HD Master, DTS HD-HRA, DTS-X
Sample Rate	48KHz, 96KHz, 192KHz
Bit Depth	Up to 24-bit
Frequency Response	20Hz-20KHz (±3dB)
Device Control	
EDID Management	Pass-through
Status Indicators	Power LED, HDBaseT status LED's
Pass-Through Control	
Pass-through Connectors	1 x 3-pin Euroblock, 1 x Jack 3,5mm, 1 x HDMI®
Pass-through Protocols	RS-232, IR, CEC
HDBaseT Specification	
HDBaseT Version	HDBaseT 1.0
Transmission Distance	4K/60Hz up to 120m with Cat 5e or higher 1080p/60Hz up to 150m with Cat 5e or higher
Electrical	
Power Supply	PoH; External: Input 100-240VAC @ 50/60Hz 0.6A, Output 24VDC-1A
AC Mains Connector	External PSU. Included 4 region power blades (UK,US,AU,EU)
DC Mains Connector	DC Locking
Power Consumption	9.36W
Physical	
Operating Temperature	Min: 0°C; 32°F Max: 40°C; 104°F
Operating Humidity	20% to 90% HR, non-condensing
Storage temperature	Min: -20°C ; -4°F Max: 60°C ; 140°F

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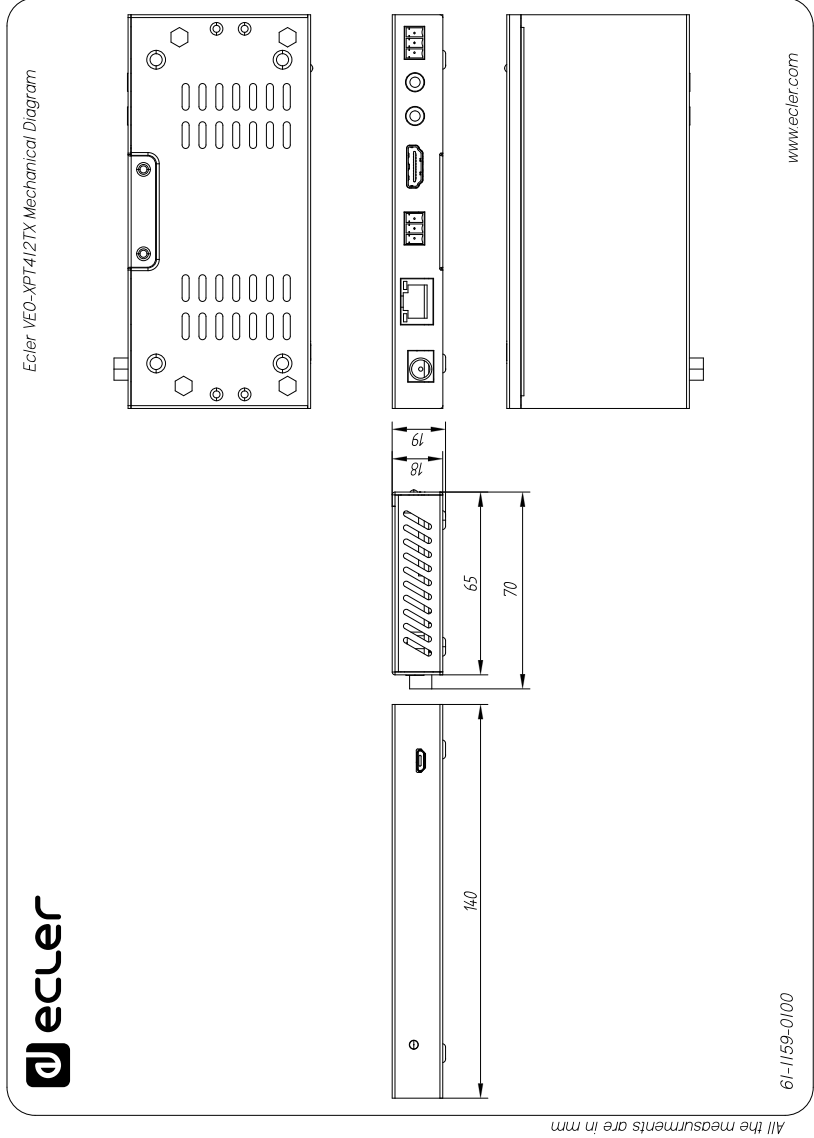PANEL FUNCTIONS

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Storage humidity	40% to 60% HR, non-condensing
Installation options	Mounting ears for table, wall or screwed
Included Accessories	1 x IR Receiver cable (1.5 meters), 1 x IR Blaster cable (1.5 meters), 4 x 3-pin 3.5mm Euroblock connector, 4 x Mounting ears, 8 x Mounting screw, 1 x PSU 24V/1A
Dimensions (WxHxD)	Transmitter / Receiver: 140 x 19 x 65 mm / 5.51 x 0.75 x 2.56 in.
Shipping Dimensions (WxHxD)	245 x 75 x 185 mm / 9.65 x 2.95 x 7.28 in.
Weight	Transmitter: 0.160 Kg / 0.35 lb Receiver: 0.155 Kg / 0.34 lb
Shipping Weight	1.08 kg / 2.38 lb
Chassis Material	Metal
Finished Colour	Black

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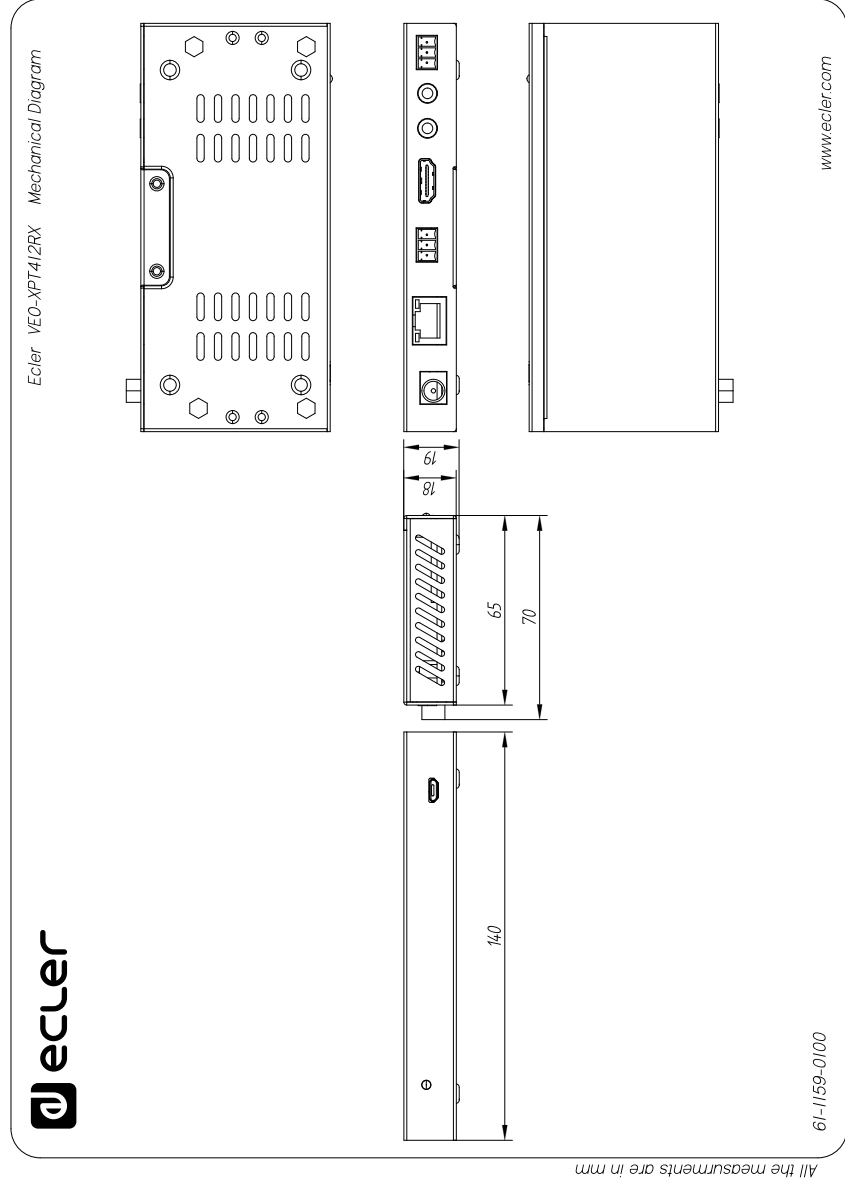
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7.2 Mechanical Diagram

All measurements are in mm.

7.2.1 Transmitter

Ecler VEO-XPT412TX Mechanical Diagram

www.ecler.com

61-1159-0100

All the measurements are in mm

7.2.2 Receiver

Ecler VEO-XPT412RX   Mechanical Diagram

www.ecler.com

61-1159-0100

All the measurements are in mm

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