

HDBASET EXTENDER SET · TRANSMITTER + RECEIVER

BLU-HDTX120-C / BLU-HDRX120-C

18 Gbps HDMI over one Cat cable.

Uncompressed 4K60 4:4:4 with HDR, plus bi-directional IR, RS-232 and CEC, carried up to 150 metres on a single Cat 5e/6 run. Power either end — the other end runs on PoC.



18 Gbps

VIDEO BANDWIDTH

120 m

4K60 4:4:4

150 m

1080P60

HDCP 2.2

AND 1.4 / DVI 1.0

PoC

24 V, EITHER END

SPECIFICATION SUMMARY

HDCP compliance	HDCP 2.2 / HDCP 1.4	Link distance	120 m 4K / 150 m 1080p
Video bandwidth	18 Gbps	Control	IR 20–60 kHz, RS-232, CEC
Maximum resolution	4K2K 50/60 Hz 4:4:4	Power	DC 24 V / 1 A, PoC either end
HDR	HDR10+, Dolby Vision, HLG	Consumption	9.36 W
Colour depth	8 / 10 / 12-bit	Dimensions	140 × 65 × 18 mm, each
HDMI audio	to LPCM 7.1, TrueHD, DTS:X	Weight	TX 160 g / RX 155 g
Analogue audio	PCM 2.0, receiver	Housing	Metal enclosure, black
EDID	Automatic management	Operating range	0 – 40 °C, 20 – 90 % RH
Link cable	One Cat 5e/6, point to point	ESD protection	±8 kV air / ±4 kV contact

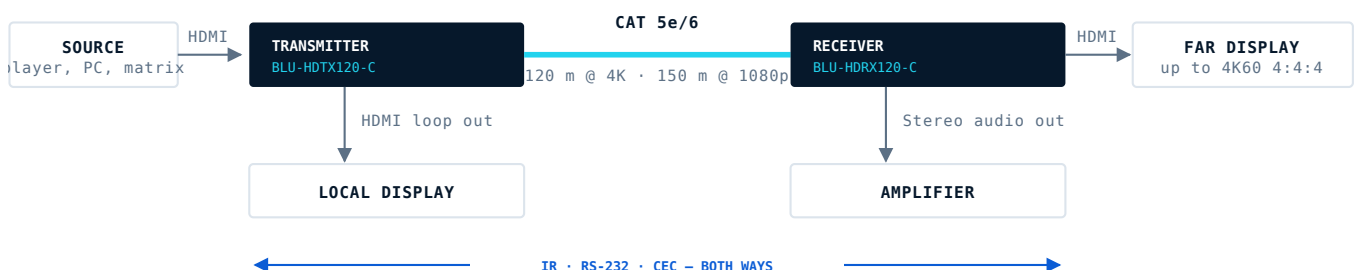
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TYPICAL USE

- Boardrooms and huddle spaces
- Lecture theatres and classrooms
- Digital signage and command walls
- Residential cinema and rack-to-room runs

Before you connect anything. Read the manual, fit surge protection on the mains and the cable run, and keep the manual with the installation record.



SIGNAL PATH · ONE CABLE, BOTH DIRECTIONS

01 Overview

What the set does, what it ships with, and where it belongs in a system.

The extender set carries an uncompressed HDMI signal — video, audio, HDCP, EDID and control — between two rooms over a single Cat 5e/6 cable. The **BLU-HDTX120-C** transmitter sits at the source and loops the picture out to a local display; the **BLU-HDRX120-C** receiver sits at the far display and de-embeds stereo audio for a local amplifier. IR and RS-232 pass in both directions, so the source can be driven from the display end and the display from the source end.

CAPABILITIES

- **18 Gbps** video bandwidth, HDCP 2.2 / 1.4 and DVI 1.0 compliant
- **4K2K 50/60 Hz 4:4:4** down to 480i, plus all HDMI 3D formats and PC resolutions to 1920×1200
- **HDR, HDR10+, Dolby Vision and HLG** passed through untouched
- **120 m at 4K, 150 m at 1080p** over one Cat 5e/6 run
- **HDMI loop output** on the transmitter for a local display
- **De-embedded stereo** on the receiver's analogue audio output
- **Bi-directional IR, RS-232 and CEC** pass-through
- **Automatic EDID management**, dual stream with separate HDMI and audio paths
- **PoC** — one 24 V supply powers both units over the link
- **Metal chassis**, 140 mm wide, with mounting ears in the box

DIP switches are fitted to 1080p models only. On this model EDID is handled automatically.

IN THE BOX

- 1 BLU-HDTX120-C transmitter
- 1 BLU-HDRX120-C receiver
- 1 IR blaster cable, 1.5 m
- 1 IR receiver cable, 20–60 kHz, 1.5 m
- 4 Mounting ear
- 2 3-pin Phoenix connector
- 1 24 V / 1 A locking power adapter
- 1 User manual

BEFORE YOU INSTALL

Fit surge protection. The unit contains components that spikes, surges and lightning strikes can damage. Protecting the mains and the cable run extends the life of the whole system.

Read the manual first. Check connections and settings before powering up, and keep the manual with the installation record.

QUICK START

01

Connect the source

HDMI into the transmitter. Loop a local display off HDMI OUT if the room needs one.

02

Run the cable

One Cat 5e/6 from HDBT OUT to HDBT IN, terminated to 568B at both ends.

03

Power one end

24 V adapter at whichever unit is reachable. PoC feeds the other.

04

Add control

IR receiver and blaster at each end; RS-232 on the Phoenix connectors.

05

Check the LEDs

Link steady first, then data steady. The picture follows.

02 Specifications

Figures apply to both units unless a unit is named.

VIDEO

HDCP compliance	HDCP 2.2 / HDCP 1.4
Video bandwidth	18 Gbps
Video resolution	4K2K 50/60 Hz 4:4:4 4K2K 50/60 Hz 4:2:2 4K2K 50/60 Hz 4:2:0 4K2K 30 Hz 4:4:4 1080p, 1080i, 720p, 720i, 480p, 480i All HDMI 3D TV formats All PC resolutions to 1920 × 1200
Colour space	RGB / YCbCr 4:4:4 YCbCr 4:2:2, YCbCr 4:2:0
Colour depth	8 / 10 / 12-bit – 1080p60, 4K30, 4K60 YCbCr 4:2:2 and 4:2:0 8-bit – 4K60 4:4:4
HDR	HDR, HDR10+, Dolby Vision, HLG
EDID	Automatic management

AUDIO

HDMI 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
L/R audio format	PCM 2.0 (receiver)

CONTROL

IR	Bi-directional, 20–60 kHz
Serial	RS-232 pass-through, both ways
CEC	Pass-through
Firmware	Mini-USB SERVICE port, both units

MECHANICAL

Housing	Metal enclosure
Colour	Black
Dimensions (<i>each unit</i>)	140 mm W × 65 mm D × 18 mm H
Weight	Transmitter 160 g Receiver 155 g
Mounting	2 ears per unit, supplied

POWER

Adapter input	AC 100–240 V, 50/60 Hz
Adapter output	DC 24 V / 1 A, locking connector
Consumption	9.36 W
PoC	Supported – power either unit and the other draws from the link

ENVIRONMENT

Operating temperature	0 – 40 °C / 32 – 104 °F
Storage temperature	–20 – 60 °C / –4 – 140 °F
Relative humidity	20 – 90 % RH, non-condensing
ESD protection	Human body model ±8 kV air-gap discharge ±4 kV contact discharge

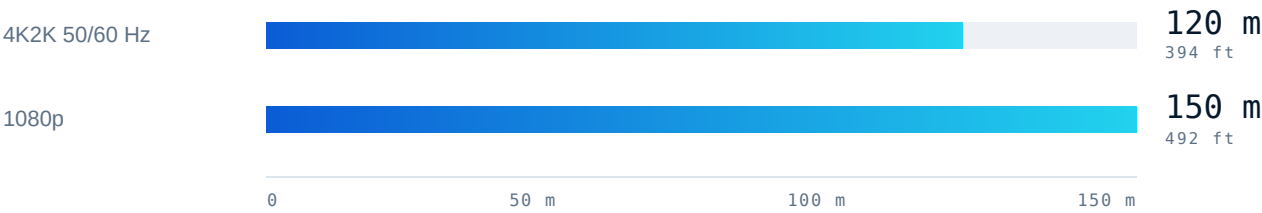
STANDARDS & BEHAVIOUR

Transport	HDBaseT over one Cat 5e/6
Compliance	HDCP 2.2, HDCP 1.4, DVI 1.0
Stream handling	Dual stream – separate HDMI and audio paths
DIP switches	1080p models only – not fitted to this model

03 Cabling & reach

How far the link runs, and how long the HDMI tails at each end can be.

HDBASET LINK – ONE CAT 5E/6 RUN, TRANSMITTER TO RECEIVER



HDMI CABLE AT EACH END

4K60	5 m / 16 ft
4K30	10 m / 32 ft
1080p60	15 m / 50 ft

Use Premium High Speed HDMI cable. The figures above assume certified cable; anything less will show up first as sparkle or dropout at 4K60.

GETTING THE FULL DISTANCE

- Solid-core, unshielded Cat 5e or better; Cat 6 or 6A for the longest runs
- One continuous run, point to point — no patch panels, couplers or switches
- Terminate to **TIA/EIA-568B** at both ends
- Keep the run away from mains cable, ballasts and motors
- Do not exceed the bend radius or over-tighten cable ties

PORT INVENTORY

Transmitter BLU-HDTX120-C

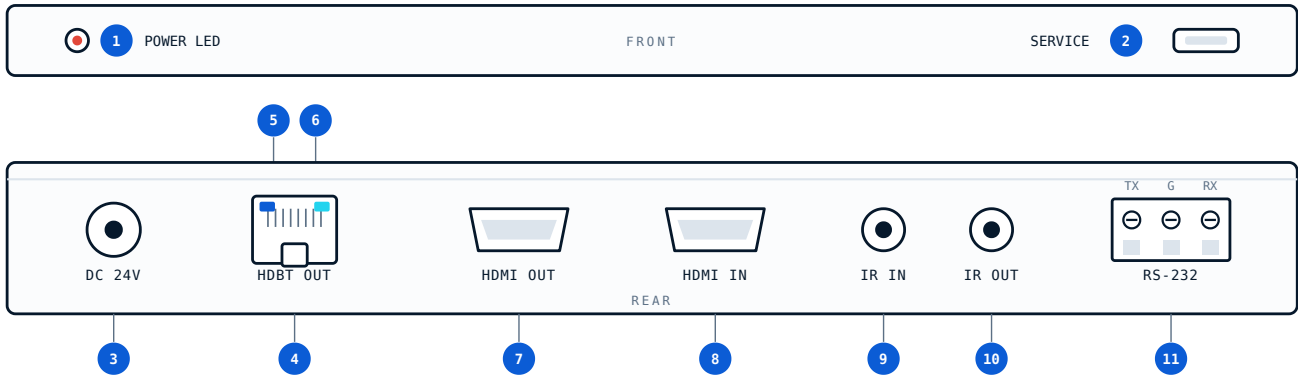
IN	HDMI IN	Type A, 19-pin female
OUT	HDMI OUT	Type A, 19-pin female
OUT	HDBT OUT	RJ45, 8-pin female
IN	IR IN	3.5 mm stereo mini-jack
OUT	IR OUT	3.5 mm stereo mini-jack
I/O	RS-232	3-pin Phoenix
IN	SERVICE	Mini-USB, firmware update
IN	DC 24V	Locking barrel connector

Receiver BLU-HDRX120-C

IN	HDBT IN	RJ45, 8-pin female
OUT	HDMI OUT	Type A, 19-pin female
OUT	AUDIO OUT	3.5 mm stereo mini-jack
IN	IR IN	3.5 mm stereo mini-jack
OUT	IR OUT	3.5 mm stereo mini-jack
I/O	RS-232	3-pin Phoenix
IN	SERVICE	Mini-USB, firmware update
IN	DC 24V	Locking barrel connector

04 Transmitter BLU-HDTX120-C

Sits at the source. Takes HDMI in, loops a copy to a local display, and sends the signal down the Cat run.

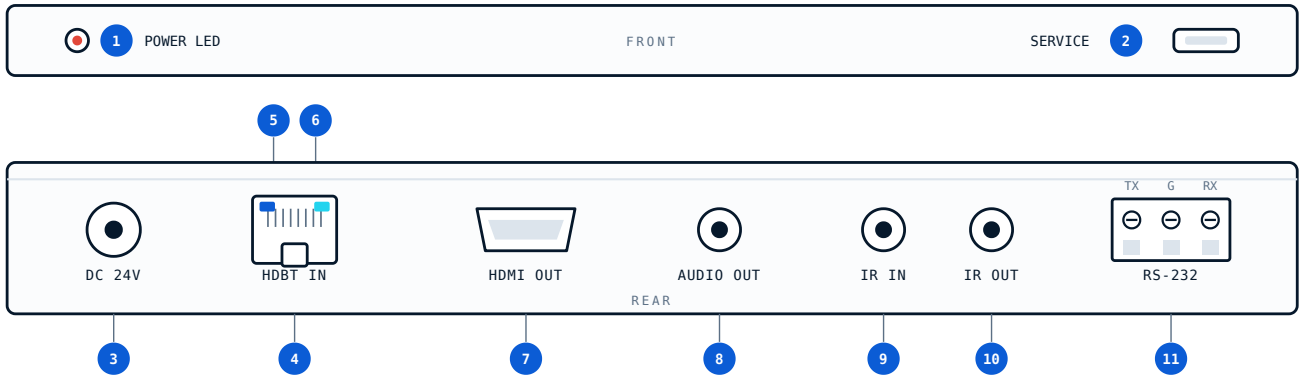


1	POWER LED	Red when the transmitter has power, whether from its own adapter or over the link.
2	SERVICE	Mini-USB firmware update port.
3	DC 24V	24 V / 1 A input, locking connector. <i>Power one unit only — PoC feeds the other end over the Cat cable.</i>
4	HDBT OUT	RJ45 to the receiver's HDBT IN, over one Cat 5e/6 cable.
5	LINK LED	<i>Connection signal indicator lamp.</i> Steady — transmitter and receiver are linked and stable. Flashing — the link is poor; check the cable, terminations and run length. Dark — no link.
6	DATA LED	<i>Data signal indicator lamp.</i> Steady — HDMI signal with HDCP. Flashing — HDMI signal without HDCP. Dark — no HDMI signal.
7	HDMI OUT	Loop output for a display in the source room.
8	HDMI IN	Source input.
9	IR IN	Takes the supplied IR receiver cable. Commands picked up here are emitted at the receiver's IR OUT — use it to control the far display.
10	IR OUT	Takes the supplied IR blaster cable; place the emitter over the source's IR window. Carries whatever arrives at the receiver's IR IN.
11	RS-232	3-pin Phoenix. Serial commands pass in either direction, transmitter to receiver or receiver to transmitter.

Reading the LEDs. Link first, then data. A dark link LED is a cabling fault; a dark data LED with a steady link means the source is not sending a picture.

05 Receiver BLU-HDRX120-C

Sits at the far display. Recovers HDMI, de-embeds stereo audio, and passes control back up the cable.

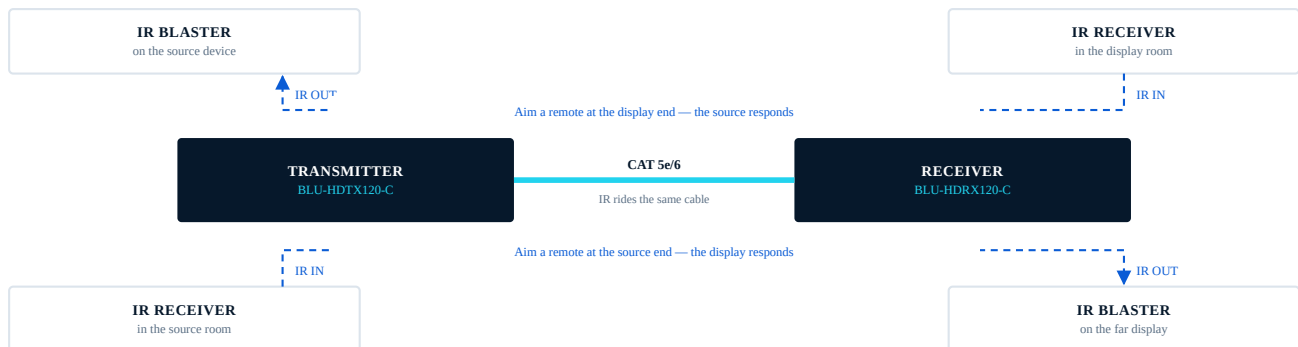


1	POWER LED	Red when the receiver has power, whether from its own adapter or over the link.
2	SERVICE	Mini-USB firmware update port.
3	DC 24V	24 V / 1 A input, locking connector. <i>Power one unit only — PoC feeds the other end over the Cat cable.</i>
4	HDBT IN	RJ45 from the transmitter's HDBT OUT, over one Cat 5e/6 cable.
5	LINK LED	<i>Connection signal indicator lamp.</i> Steady — transmitter and receiver are linked and stable. Flashing — the link is poor; check the cable, terminations and run length. Dark — no link.
6	DATA LED	<i>Data signal indicator lamp.</i> Steady — HDMI signal with HDCP. Flashing — HDMI signal without HDCP. Dark — no HDMI signal.
7	HDMI OUT	Output to the display.
8	AUDIO OUT	3.5 mm stereo, de-embedded from the HDMI stream. PCM 2.0 to an amplifier or active speakers.
9	IR IN	Takes the supplied IR receiver cable. Commands picked up here are emitted at the transmitter's IR OUT — use it to control the source.
10	IR OUT	Takes the supplied IR blaster cable; place the emitter over the display's IR window. Carries whatever arrives at the transmitter's IR IN.
11	RS-232	3-pin Phoenix. Serial commands pass in either direction, transmitter to receiver or receiver to transmitter.

Audio output. The analogue output carries a stereo PCM downmix. Multichannel bitstreams stay on the HDMI output for the display or AV receiver to decode.

06 IR control

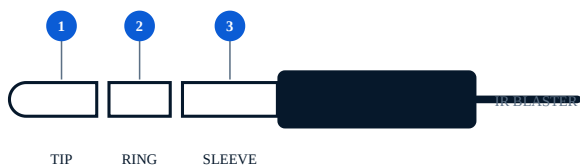
IR travels in both directions at once. Each direction needs a receiver cable at one end and a blaster cable at the other.



TWO INDEPENDENT IR PATHS ON THE SAME CABLE

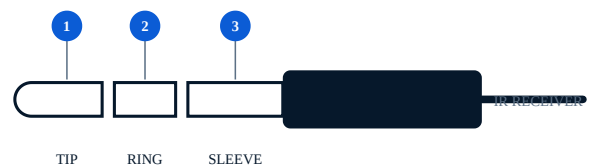
PIN ASSIGNMENT – 3.5 MM STEREO PLUG

IR blaster cable – emits at the device



1	TIP	IR blaster signal
2	RING	Power
3	SLEEVE	Not connected

IR receiver cable – listens to the room



1	TIP	IR signal
2	RING	Power
3	SLEEVE	Ground

PLACING THE RECEIVER

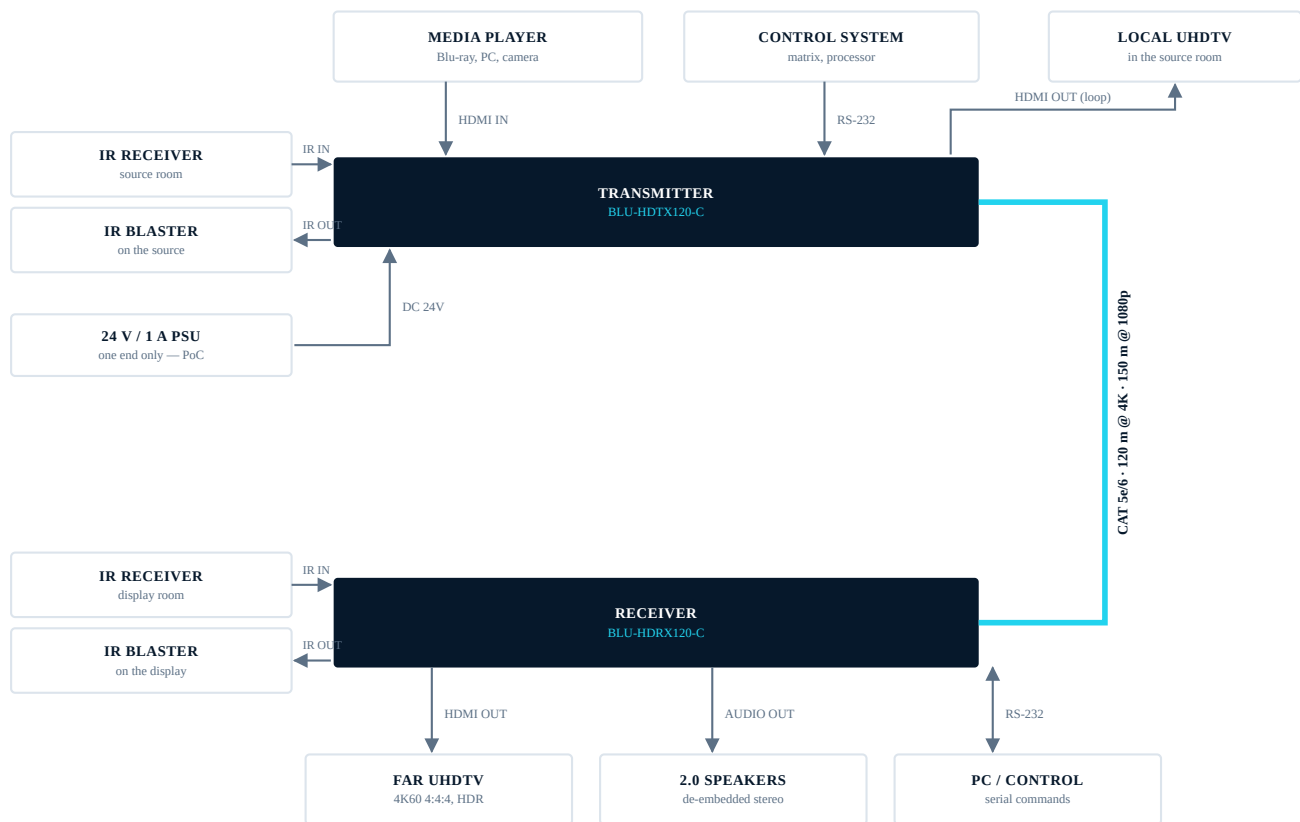
Remote within $\pm 45^\circ$	0 – 5 m from the receiver
Remote within $\pm 90^\circ$	0 – 8 m from the receiver
Carrier range	20 – 60 kHz
Cable length	1.5 m, both cables supplied

COMMON MISTAKES

- Blaster and receiver swapped — the blaster is the small dome that sticks to the device; the receiver is the flat eye that faces the room
- Receiver eye placed behind glass or in direct sunlight, or inside a rack where the remote cannot reach it
- Blaster not sitting squarely over the device's IR window
- Only one end wired — each direction needs both a receiver and a blaster

07 Application example

A fully populated system: source and control at one end, display and audio at the other, everything between them on one cable.



One cable does the work. Video, audio, HDCP, EDID, CEC, IR, RS-232 and power all share the single Cat 5e/6 run between the two units.

Power once. The 24 V adapter goes at whichever end is accessible. Do not fit a second adapter at the other end.

ORDERING

BLU-HDTX120-C	18 Gbps HDMI over HDBaseT transmitter, 120 m, with bi-directional IR, RS-232 and PoC
BLU-HDRX120-C	18 Gbps HDMI over HDBaseT receiver, 120 m, with de-embedded stereo audio, bi-directional IR, RS-232 and PoC



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