⚡**PoE**
Power Over Ethernet

HDMI™
HIGH-DEFINITION MULTIMEDIA INTERFACE

PB7000-PoE | HDMI KVM Over IP Broadcaster w/ USB, IR & RS232 Pass-Thru

Sender

Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ Ⓕ   Ⓖ

Ⓘ   Ⓙ   Ⓚ   Ⓟ Ⓠ Ⓣ Ⓤ

Receiver

Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ Ⓕ   Ⓗ

Ⓘ   Ⓛ Ⓜ Ⓝ   Ⓞ   Ⓡ Ⓢ Ⓤ
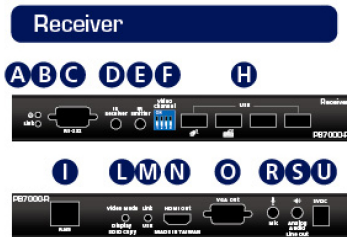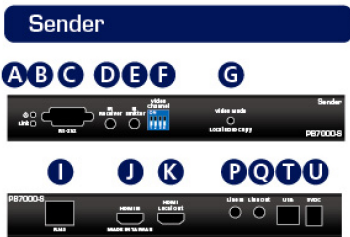
Ⓐ Power LED Indicator
Ⓒ RS-232 Port
Ⓔ IR Emitter Port
Ⓕ Video Channel Dip Switch
Ⓖ Video Mode / Local EDID Copy Button
Ⓗ Receiver USB ports x 4
Ⓘ RJ45 Port
Ⓙ HDMI In from Video Source
Ⓚ HDMI Out for Local Display/TV at Sender side
Ⓛ Video Mode/Display EDID Copy Button
Ⓜ Ethernet / USB Link Button (Short press Ethernet Link On/Off, Long press USB Link On/Off.)
Ⓝ HDMI Out for Display/TVs at Receiver side
Ⓞ VGA Out for Non-HDCP Video
Ⓟ Line In Audio Jack (Audio from PC to Sender)
Ⓠ Line Out Audio Jack (Audio from Sender to PC)
Ⓡ Mic in/ Line In Audio Jack (from Mic or Audio Source to Receiver)
Ⓢ Line Out Audio Jack (Audio from Receiver to External Speaker)
Ⓣ USB Host port (from PC to Sender)
Ⓤ 5V DC Jack

Ⓑ Ethernet Link LED Indicator
Ⓓ IR Receiver Port

Specification	
HDMI Video Resolution	Up to 1080p@60Hz, 720p 3D
PC DVI Resolution	Up to 1920x1200@60Hz
HDMI Audio In/Out	Up to 7.1 ch LPCM, DTS™, Dolby®
HDMI Specification	v1.3 Compatible
DVI Specification	v1.0 Compliant
HDCP Specification	HDCP 1.1 / 1.2
Distance	Point to Point 100M Unlimited within LAN
USB Extension	USB 2.0 Type A ports x 4 on Receiver USB 2.0 Type B ports x 1 on Sender
RS-232 Baudrate	300~230,400bps Default 115,200bps
IR Control Pass Thru*	20~60KHz, Two Way IR Pass-Thru
Power Adapter	DC 5V
Power Consumption	5W
Dimensions	197x115x28mm(LxWxH)
Weight	450g
Optional Accessory	Wall Mount Kit, IR Remote, IR Emitter/Receiver

HDMI Over IP | **1080p Full HD** | **HD KVM Over IP** | **USB 2.0** | **IR Control Pass Thru** | **RS-232 UniCast Broadcast** | **Video Mode Switching** | **EDID Copy** | **HDCP compliant** | **PC DVI compatible** | **Multi-Casting**

1 to Many Displays

HDMI Cables
CAT5e/6/7 Cables
RS-232 Cable
IR Emitter/Receiver

Sender
IR Emitter
HDMI Source:
• PC W/HDMI • Satellite Receiver • Blu-Ray / DVD player
• Set Top Box • PS3,Xbox 360

Gigabit Switch*   Gigabit Switch*

Receiver   Receiver   Receiver   Receiver

Display   Remote Control of Video Source   Display   Display   Display

* required 8K Jumbo frame/Packet & IGMP enabled

Multi-Casting

BluRay DVD Players
Remote Control of Remote of Display
PS3
Digital Signage Player
HD TV Set Top Box
PC w/ RS-232 control

Sender   Sender   Sender   Sender

Gigabit Switch*

Receiver   Receiver   Receiver   Receiver

Display   Remote Control of Video Source   Display   Display   Projector   PB7000 Remote To Switch Video Channel

Broadcasting & MultiCasting Installation

1 Make sure all PB7000 Senders and PB7000 Receivers have Correct Video Channel setting.

Scenario	Dip Switch
1 to 1,1 to Many	All Same
Multicast w/ Dip Switch Matching	Refer Instruction below
Multicasting w/ VLAN	All Same

2 Power On Senders and Receivers (Plug-in DC adapter).

3 Connect all sources to each Sender with HDMI cable.

4 Plug IR Emitter cable into IR Emitter port on PB7000 Sender for IR Pass Thru function. Place IR Emitter toward the IR receiving window of video source. Plug IR Receiver cable into IR Receiver port on PB7000 Receiver, place IR Receiver toward to IR Remote location.

5 Connect all displays to Receiver by HDMI cable, or VGA cable if non-HDCP video source.

6 Connect all PB7000 Senders and Receivers to Gigabit Ethernet Switch (8K Jumbo Frame/IGMP enabled) with Cat5e cables.
If 1 to 1 extender, Connect Sender and Receiver with Cat5e cable to its RJ-45 directly.

7 Power On Displays and Video Sources, Play Video.

Multicast w/ Dip Switch Matching

1 Setting up a unique Video Channel setting on each PB7000 Sender with video source. Make sure the setting on each sender won't be duplicated.

2 On Video Channel Setting, PB7000 Receivers' Video Channel selection always match that of the Senders with the video sources you want to display.

3 Following Standard Installation procedure to setup all senders and receivers connected to Gigabit switch.

Receiver Change Video Channel

1 Change Dip Switch, after two seconds, it will change video channel automatically.

2 Use IR Remote control, toward to IR receiver connected to Receiver, and press Video Channel number button.

MultiCasting with Layer 2 Managed Switch

1 Make Sure Same Video Channel setting on all PB7000 senders and PB7000 receivers.

2 Managed Switch with 802.1Q VLAN

Only One Sender is allowed in Each VLAN Group.
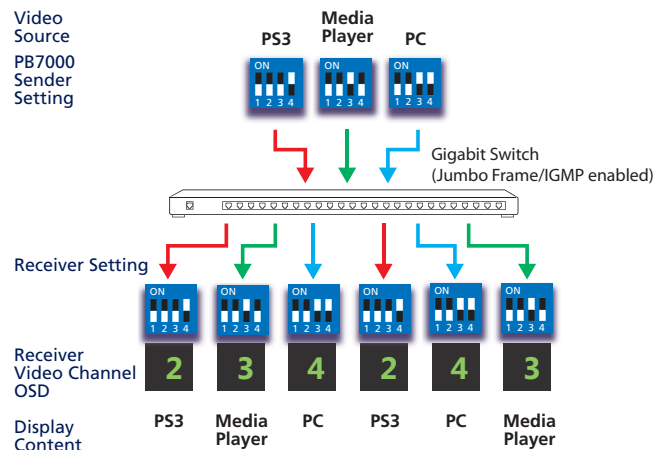
Multiple Receivers Ok in Each VLAN Group.

3 Following Standard Installation procedure to connect all senders and receivers to managed switch.

Video Channel Matching Table

Receiver OSD Video Channel #	Sender Dip Switch Setting	Receiver OSD Video Channel #	Sender Dip Switch Setting
1		9	
2		10	
3		11	
4		12	
5		13	
6		14	
7		15	
8		16	

Video Channel Matching Config Example

Video Source — PS3 — Media Player — PC

PB7000 Sender Setting

Gigabit Switch (Jumbo Frame/IGMP enabled)

Receiver Setting

Receiver Video Channel OSD: 2 3 4 2 4 3

Display Content: PS3 — Media Player — PC — PS3 — PC — Media Player

* If use IR Remote control to change Video Channel, OSD number will not match Dip Switch setting.

Video Mode Switching (By Short Press of Receiver EDID button)

- Video mode(Auto) — Smooth Motion, Auto switch between video mode and Grpahic mode depends on motion of video.
- Graphics mode — Fixed at High Video Quality & Sharp Clear Detail, but High Bandwidth Required.

Display EDID Copy

1. On Receiver web page, Click "Functions" Tab
2. Check "Copy EDID from this Video Output" and Click Apply
3. Reboot Sender and Receiver

Video over IP

☑ Enable Video over IP

☑ Copy EDID from this Video Output (Default disabled under multicast mode)

Apply

To Find PB7000 on Ethernet Network

To finding and Linking Sender or Receiver by PC/NB with MS Windows OS, please download the Apple Bonjour SDK from following URL:

https://developer.apple.com/bonjour/
* Not needed in Apple Max Os X PC/NB, it's built-in in Mac OS X.

1 Change PC/NB Ethernet RJ45 port IP setting to 169.254.100.200 or IP address within 169.254.???.??? C class. And, netmask 255.255.0.0

2 To Link Sender or Receiver to Switch or to PC directly by Cat5e cable and Power On. May use third party's Bonjour Browser software (Google it and download) to find all PB7000 senders and receivers on the Ethernet switch network.

PB7000	Host Name Rule
Sender	Aavara-gateway0000.local * 0000 repesent video channel setting, 0 is Off, 1 is On
Receiver	Aavara-client123456789012.local * 123456789012 is Receiver's Mac Address

3 Launch Web Browser with IP address of the unit you like to config.
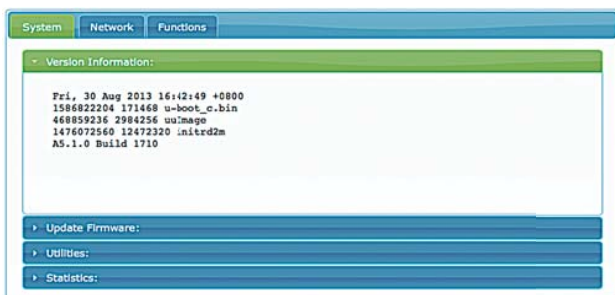
RS-232 Pass-Thru Installation

Customize RS-232 Baudrate Setting

RS-232 preconfigured baud rate setting (is 115200-8n1) It can be changed by following ways to match RS-232 Control Device or Display/TV/Projector:

1 Launch PB7000 Web page by Web browser, Click " "Functions" Tab.

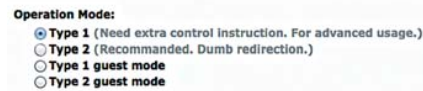**2** In Serial Over IP section, change Baudrate setting to match RS-232 control device or display Rs-232 setting.

Type 1 RS-232 Unicasting

1 Sender to 1 Receiver at Same Video Channel

Select Type 1 Operation Mode, Click Apply Button and reboot the unit to take effect. Both Sender and Receiver need to be at same Operation Mode.

Switch between "command mode" and "redirection mode" by sending **"Ctrl+N" (0x0E)** control code in RS-232 console.

2 Press "Ctrl+N" to Stop redirection mode, you will see a command prompt ">" shows up.

3 Enter following Unicast command in RS-232 Console as **ast_c [Receiver's ID] [baudrate-8n1]**

ie. to connect to Receiver which has hostname Aavara-client0300000000F2.local & connected Display's RS-232 baudrate 9600bps:

"ast_c 0300000000F2 9600-8n1".

RS-232 Console will show:

====<Start of Aavara-client0300000000F2.local>====

Then, Unicasting mode start to that Receiver.

* Receiver's ID can be found on left bottom corner of Display show when unit booting.

Type 2 RS-232 Broadcasting (Factory Defaut)

1 Sender to All Receivers at Same Video Channel

Under this mode, the RS232 redirection is automatically established between Sender and Receivers.

Pre-configured baud rate setting is 115200-8n1(default, can be changed).

Sender will Keep talking to all Receivers connected in same network or same VLAN group and same Video Channel.

Once one of Receivers starting RS-232 communication, other Receivers won't be able to send data at same time.

When that Receiver finishes RS-232 communication, Sender will keep waiting for a period of time without any data input then reopen RS-232 talking to other Receivers.

RS-232 Guest Mode

PB7000 provides RS-232 guest mode which allow installer/user can do RS-232 command pass-thru over IP directly by Telnet session.
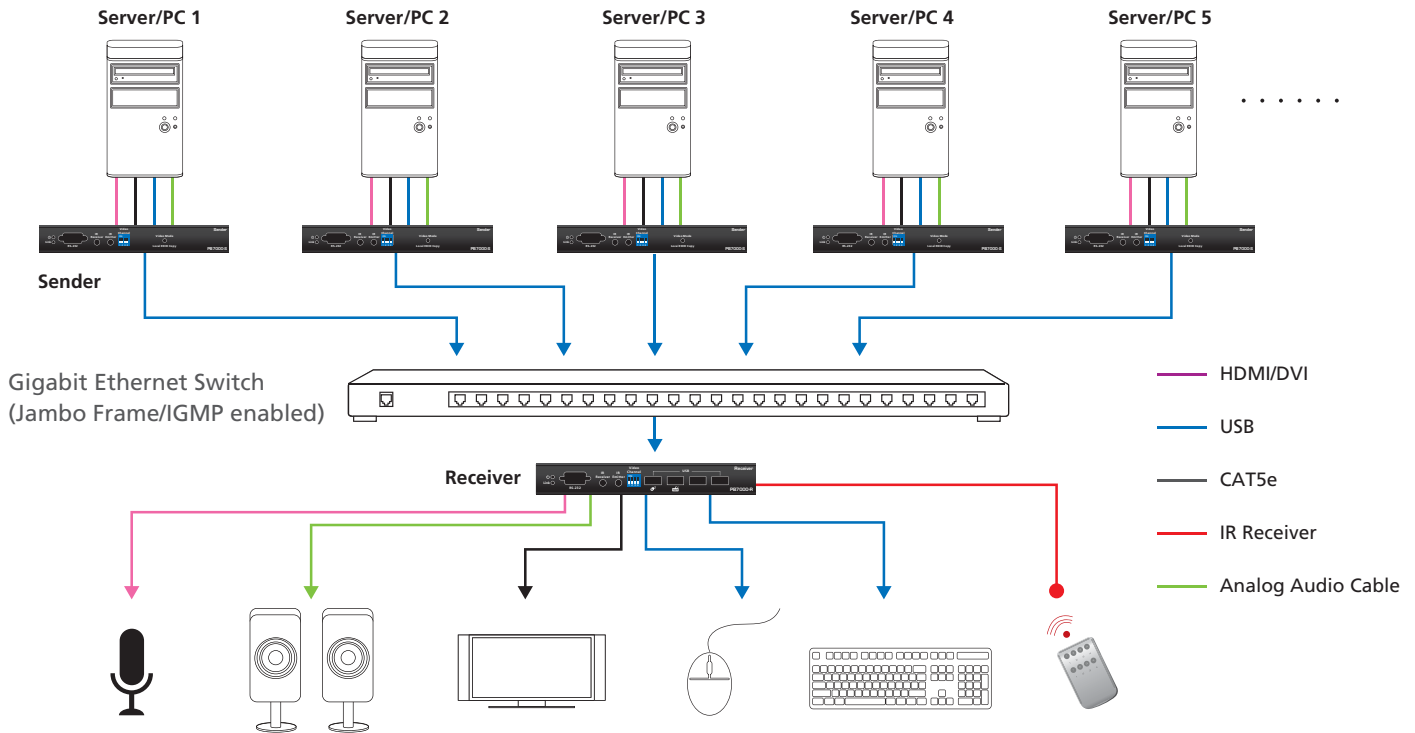
The most easy way to use "Guest Mode" is to configure as "Type2 guest mode", then use telnet utility to connect to the box's port 6752.

The telnet session will become the RS232 redirection session immediately.
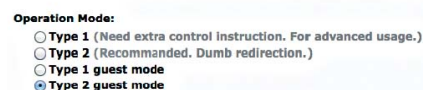
HD KVM Over IP Scenario

The HD KVM over IP Scenario is to extend HDMI/DVI, USB, analog audio(optional) over a Gigabit LAN. Video resolutions support up to 1080p Full HD and 1920 x 1200 DVI. 4 x USB 2.0 ports on Receiver for 1 to 1 Extension which support USB Keyboard, Mouse, camera, Flash Drive/Portable Hard Drive(need external power). Max. 16 x Senders w/ Server/PC, and 1 or 200 more Receivers can be connected as a massive HD KVM Matrix.

Server/PC 1   Server/PC 2   Server/PC 3   Server/PC 4   Server/PC 5   . . . . . .

Sender

Gigabit Ethernet Switch
(Jambo Frame/IGMP enabled)

Receiver

	HDMI/DVI
	USB
	CAT5e
	IR Receiver
	Analog Audio Cable

USB KVM Installation

1. Plug-in USB cable (Type B to Type A) between PC/Server and Sender's USB port. And, repeat for all PC/Server and Sanders.
2. Plug-in USB Keyboard and Mouse to Receiver USB ports which with Keyboard & Mouse Icon.
   This two USB ports got Keyboard/Mouse emulation for smooth switching between different Sender/PC/Server.
   Another two USB ports can be used with USB Flash Drive, USB hub, Webcam, and other USB device.

Video
Channel

Link   RS-232   IR Receiver   IR Emitter   USB   Receiver
PB7000-R

Mouse   Keyboard
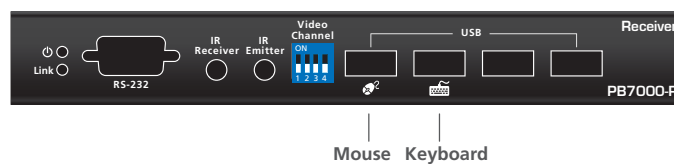
3. Optional Audio Setup, use 3.5mm stereo audio plug cables to connect between:
   - PC/Server's Audio Line Out to Sender's Line In, Receiver 's Audio Line Out to Speaker Line In for Audio from PC to Speaker.
   - Mic/Audio out to Receiver's Audio In/Mic In, Sender's Line Out to PC/Server's Mic In (Line In) to for Audio from Receiver to PC.
4. Following same Broadcasting & Multicasting Installation Procedure for whole system setup.

To Switch Video Channel (Switch to other Video Source)

1. Use IR Remote of PB7000 (Need to install IR Receiver on PB7000 Receiver's IR Receiver Jack, and Receiver's Dip Switch all off 0000), press the Target Video Channel Number target to IR Receiver of Receiver to select the Video Channel Number.
2. Change Receiver's Dip Switch to match target Sender Dip Switch setting , Receiver will change Video channel after 2 seconds.

To Establish USB Connection

If only one Receiver connected to the Target Sender (1 to 1), USB Link will establish automatically.
If multiple Receiver connected to same sender, Just push the USB button on Receiver about 5 seconds till "Starting USB" message show on screen.