

DATA SHEET

Dual-display supportable HDMI / DVI IP KVM Extender

IPKVM-350-ED

Contents

- ◆ Description
- ◆ Features
- ◆ Technical Specification
- ◆ Connection Diagram
- ◆ Block Diagram
- ◆ Mechanical Drawing

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1. Description

The OPTICIS HDMI / DVI IP KVM Extender, IPKVM-350-ED is designed for extending of HDMI, keyboard / mouse and provides unicast (1 to 1) over IP network. But the key feature of dual-display mode function inside IPKVM-350-ED enables user to extend two (2) displays with keyboard / mouse.

The transmitter, IPKVM-350-E (Encoder) connected to a HDMI source, encodes the HDMI by H.264 and transmits the video signal via Ethernet. The receiver, IPKVM-350-D (Decoder) connected to a display, receives the H.264 encoded video signal via the Ethernet and decodes video signal into the HDMI display.

The USB keyboard and mouse interface in the receiver, IPKVM-350-D also can be accessed to the source via transmitter, IPKVM-350-E, if it is connected to the source by USB interface.

The IPKVM-350-ED supports the digital video data of full HD up to 1080p at 60Hz and stereo audio and transmits the signal via Intra network.

By using GUI interface and PC program, user can control the transmitters for connecting in the receiver side.

2. Features

- ◆ Supports Dual-display mode: extend two (2) displays with keyboard / mouse.
- ◆ LAN standard: 802.3 Ethernet 10/100/1000Mbps.
- ◆ Video Resolution: up to 1080p@60Hz
- ◆ H.264 CODEC
- ◆ OSD GUI
- ◆ Remote Manager: PC Program for User Setting and Control
- ◆ HDMI V1.3, DVI 1.0
- ◆ USB KVM via backchannel: USB HID mouse & keyboard on remote site (Rx).
- ◆ Provides mounting bracket (OPSCB) complying with VESA 75,100 – option.
- ◆ Certifications: CE / FCC

3. Technical Specifications

3.1 General Specifications

Item	Description
Display Resolution	Up to 1080p@60Hz
Network(LAN)	10/100/1000Mbps Base-T Ethernet: TCP/IP based wired network
Video Streaming protocol	RTSP, RTP, RTCP, UDP / TCPIP
Video Codec	MPEG-4 Part 10/AVC (H.264)
Video Interface Standard	HDMI 1.3 and DVI1.0
Tx Video Interface	Input: 1 HDMI/DVI Input Output: 1 HDMI/DVI Output (Loop-Through)
Rx Video Interface	Output: 1 HDMI/DVI Output
USB terminal	1x mini USB B type to PC on Local site (Tx)
USB KVM	2x USB USB A type for HID Keyboard /Mouse on Remote Site(Rx)
Dual display mode	Support KVM with video, keyboard and mouse on Dual displays
LAN Port	RJ-45 (Tx/Rx 1 port)
RX232 Port	3 Pin Terminal Block for Knob & alarm interface
Digital I/O Port	Terminal Block for Console Switch
Reset Switch	SW reset & Factory reset
External Console Switch (Tx, Optional)	Select Local/Remote Authority on the switch pad externally.
Key button	[M] menu, [▶] right, [▲] up, [▼] Down
Configuration access	OSD GUI via key button PC Program (Remote Manager) for user account, device setting and control
EDID	Built-in EDID & EDID Read/Write
Dimension	Tx: 112x28x104mm (WHD), Rx: 112x28x104mm (WHD)
Power	100-240VAC, 50-60Hz 5V 2A Adaptor
Power Consumption	Transmitter <6W Receiver <6W
Operating Temperature	0~50°C
Storage Temperature	-20~60°C
Certification	FCC, CE

3.2 Electrical Characteristics

	Parameter	Symbol	Minimum	Typical	Maximum	Units	
Power Supply	Supply Voltage, Temp 25°C	VCC	+ 4.75	+ 5.0	+ 5.25	V	
	Supply Current	Tx	ITCC	-	2	-	A
		Rx	IRCC	-	2	-	A
	Power Dissipation	Tx	PTX	5.5	6.5	7.5	W
Rx		PRX	5	6	7	W	
TMDS	Data Output Load	RLD		50		Ω	
	Graphic Supply Voltage	GVCC	+ 3.15	+ 3.3	+ 3.45	V	
	Single-Ended High Level Input Voltage	GVIH	GVCC - 0.01	GVCC	GVCC + 0.01	V	
	Single-Ended Low Level Input Voltage	GVIL	GVCC - 0.6	-	GVCC - 0.4	V	
	Single-Ended Input Swing Voltage	GVISWING	0.2	-	0.75	V	
Ethernet Link	Maximum Bit rate			40		Mbps	
	Network Speed			100/1000		Mbps	
	RGMII/GMII	-0.2		2.8		V	

(T_A = 0 °C to +50 °C, unless otherwise noted)

3.3 HDMI Pin Description

Pin	Symbol	Functional Description
1	CH2+	TMDS Data Signal Channel 2 Positive
2	GND	TMDS Data Signal Channel 2 Shield
3	Ch2-	TMDS Data Signal Channel 2 Negative
4	CH1+	TMDS Data Signal Channel 1 Positive
5	GND	TMDS Data Signal Channel 1 Shield
6	CH1-	TMDS Data Signal Channel 1 Negative
7	CH0+	TMDS Data Signal Channel 0 Positive
8	GND	TMDS Data Signal Channel 0 Shield
9	CH0-	TMDS Data Signal Channel 0 Negative
10	CLK+	TMDS Clock Channel Positive
11	GND	TMDS Clock Signal Shield
12	CLK-	TMDS Clock Channel Negative
13	CEC	Consumer Electronics Control
14	Reserved	Not used
15	SCL	HDCP/DDC communication clock
16	SDA	HDCP/DDC communication data
17	GND	DDC/CEC shield
18	5V	5 V Input for Transmitter from Host
		5 V Output for Monitor from Receiver
19	Hot plug Detect	Signal is driven by monitor to enable the system to identify the presence of a monitor

3.4 Absolute Maximum Ratings

Parameter	Symbol	Minimum	Maximum	Units
Supply Adaptor Voltage, Temp=25°C	VCC	-0.3	+5.25	V
Operating Temperature	Top	0	50	°C
Operating Relative Humidity	RHop	5	80*	%RH
Storage Temperature	Tsto	- 20	+ 60	°C
Storage Relative Humidity	RHsto	10	95*	%RH

3.5 Recommended Operating Conditions

Parameter	Symbol	Minimum	Typical	Maximum	Units
Ambient Operating Temperature	TA	0		+ 50	°C
Data Output Load (HDMI)	RLD		50		Ω
Power Supply Rejection (Note1)	PSR		100		mVp-p
Supply Voltage	VCC	+ 4.75	+ 5.0	+ 5.25	V

3.6 EMC Test



- EMI: Meet FCC class A or B (ICES-003) and CE class A or B

STANDARDS		CONDITIONS
EN 55 022 (CISPR22) FCC; PART 15 SUBPART B	CE (Conducted Emission) & RE (Radiated Emission)	Meet Class A or B
EN 61000-3-2 (IEC 61000-3-2)	Harmonics	Meet Class A or B
EN 61000-3-3 (IEC 61000-3-3)	Flickers	Meet Class A or B

- EMS: Meet CE standards (EN 55024) and CISPR24 equivalents

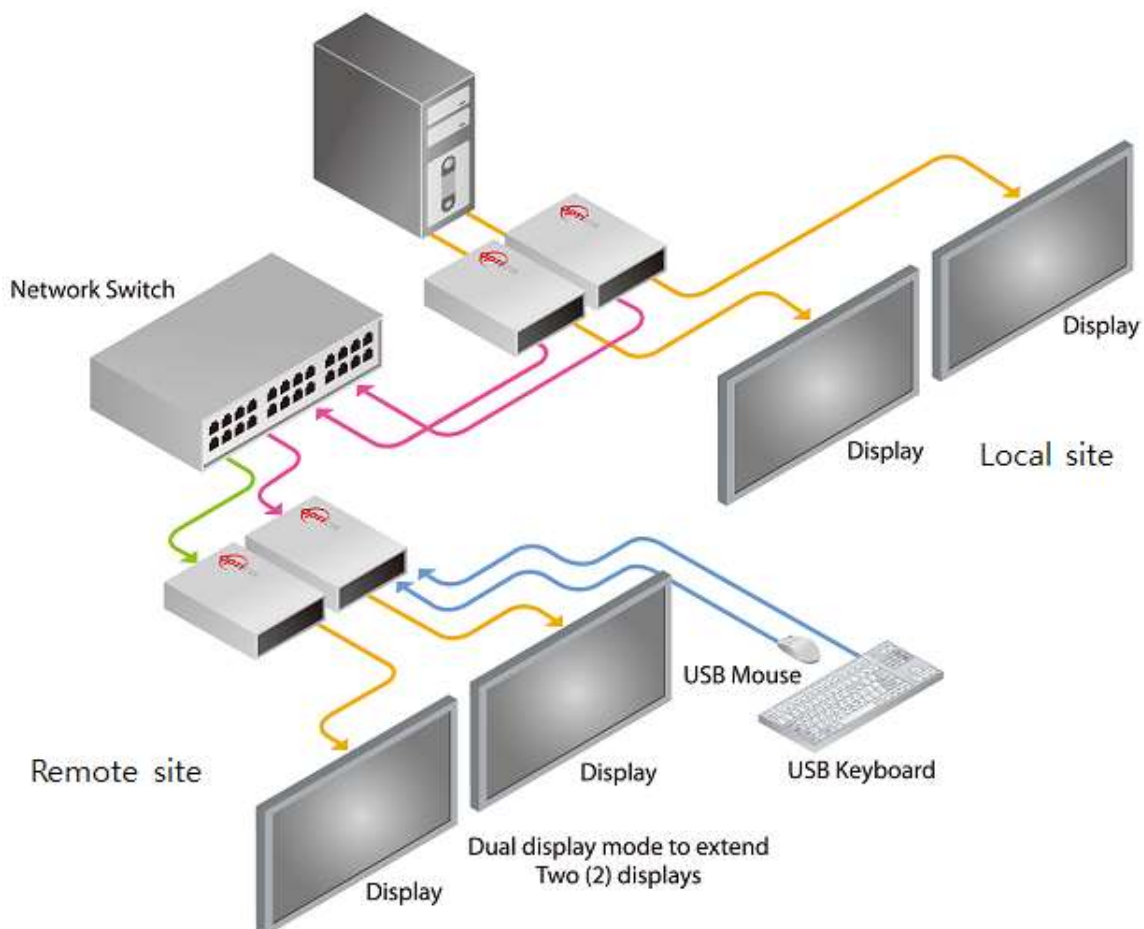
STANDARDS		CONDITIONS
EN 61 000-4-2:1995	Electrostatic Discharge Immunity (Air: 8kv, Contact: 4kv)	Meet Criterion A or B
EN 61 000-4-3:1996	Radiated RF E-Field (80~1000 MHz) 3V/m (AM 80%, 1kHz)	Meet Criterion A or B
EN 61 000-4-4:1995	Fast Transients (5kHz, 60Seconds)	Meet Criterion A or B
EN 61 000-4-5:1995	Surge Transients	Meet Criterion A or B
EN 61 000-4-6:1996	Conducted Susceptibility (CS) Radiated Susceptibility (RS)	Meet Criterion A or B
EN 61 000-4-11:1994	Voltage Dips, Interruption & Variation	Meet Criterion A or B, and C

3.7 Supporting Resolutions

- 480i60, 576i50
- 480p60, 576p50
- 720p50, 720p60
- 1080i30, 1080i50, 1080i60
- 1080p24, 1080p30, 1080p50, 1080p60
- 640x480p60
- 800x600p60
- 1024x768p60
- 1280x768p60
- 1280x960p60
- 1280x1024p60
- 1600x1200p60
- 1920x1080p60

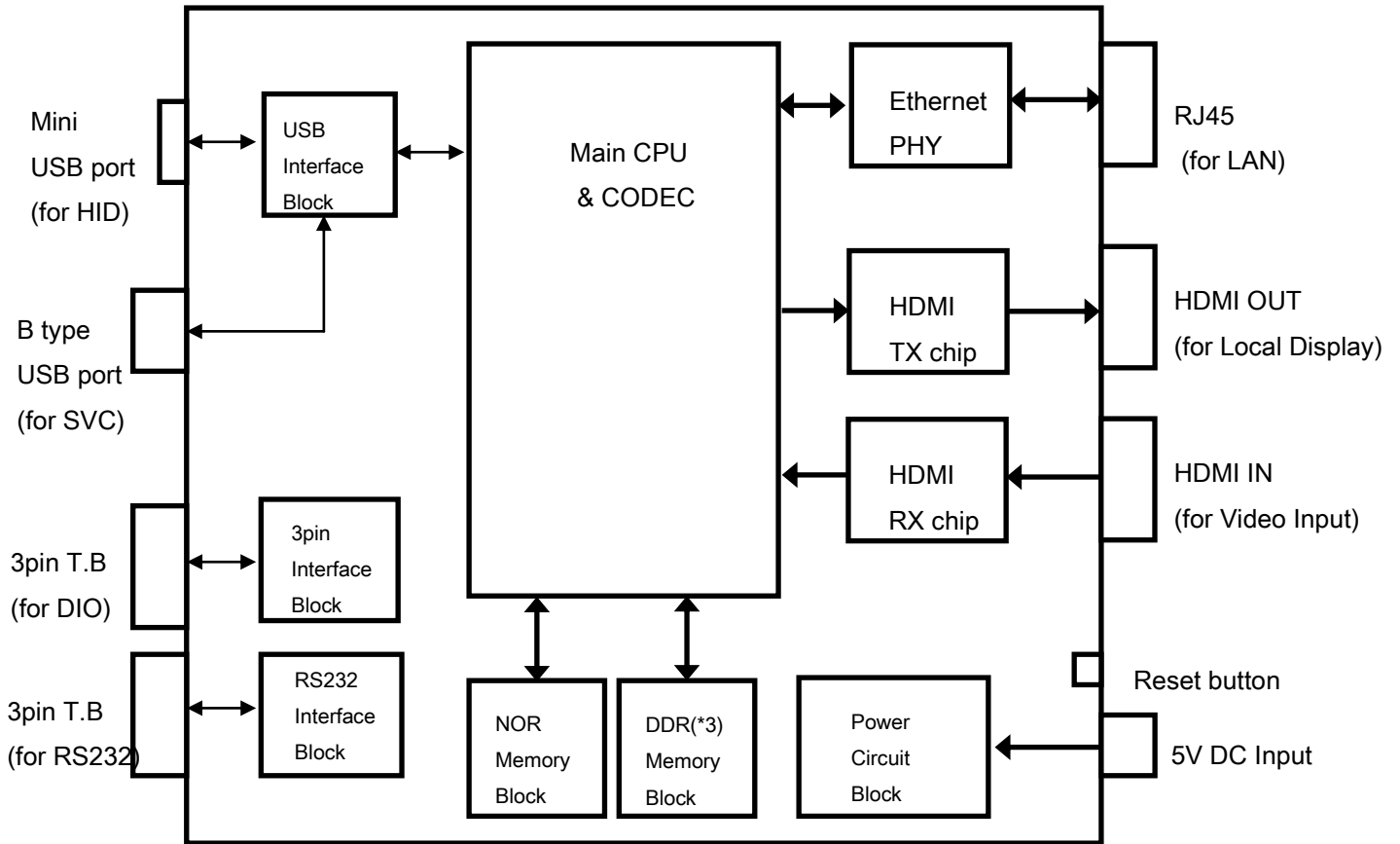
Note: Some DVI resolutions may not be shown properly on the display. The image would be shifted to one side.

4. Connection Diagram

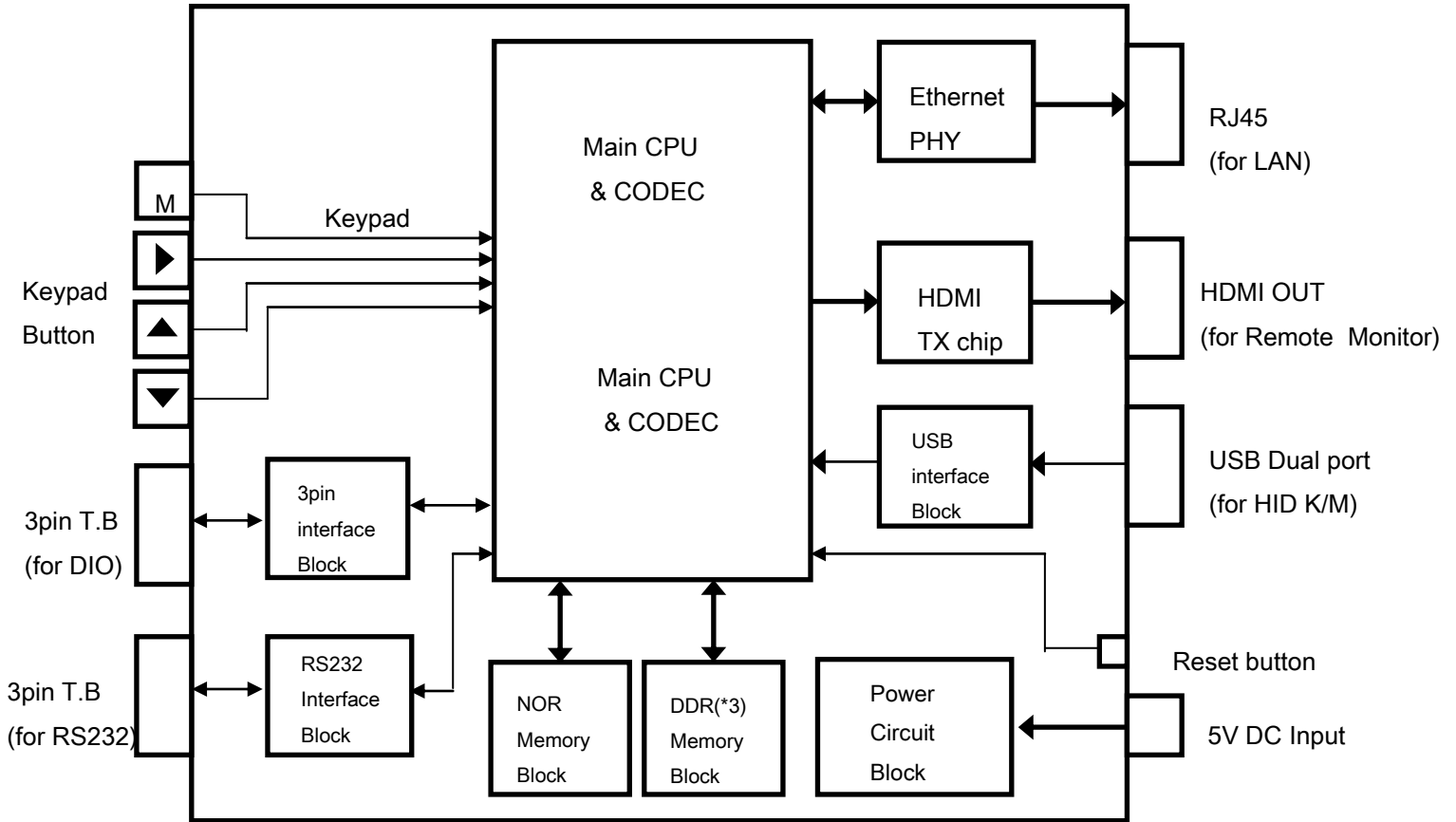


5. Block Diagram

6.1 Transmitter, IPKVM-350-E: Internal schematic circuit diagram & I/O port



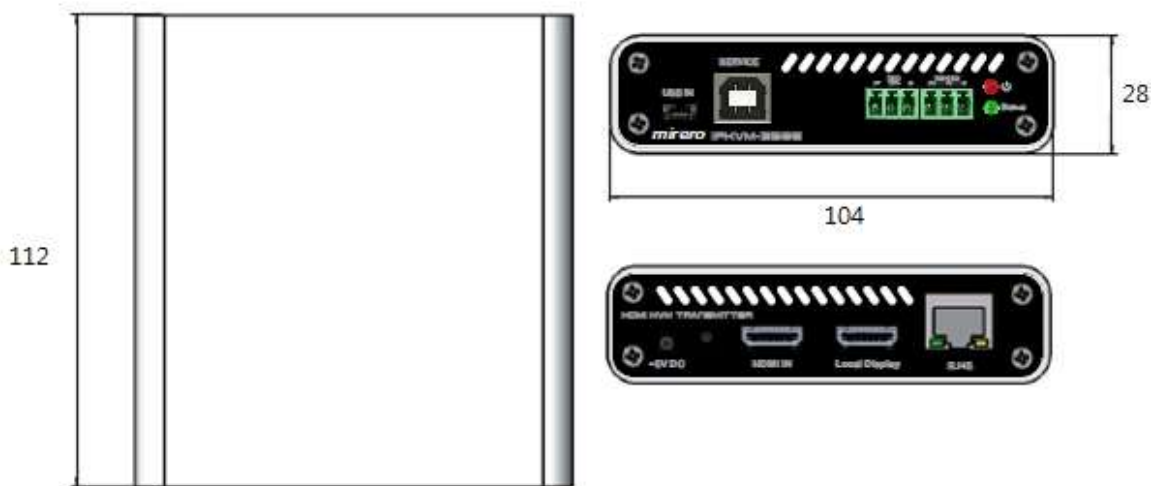
5.2 Receiver, IPKVM-350-D : Internal schematic circuit diagram & I/O port



6. Mechanical Drawing

6.1 IPKVM-350-E (Transmitter) : 112x104x28mm

- mini-USB port for PC, B type USB ports for SVC, DIO, LED (Power/Status)
- Power Jack, RJ45, HDMI input/ HDMI output (for Loop-through)



6.2 IPKVM-350-D (Receiver) : 112x104x28mm

- 4 Key button for GUI, DIO, LED (Power/Status)
- Power Jack, RJ45, HDMI output for Display, Dual USB ports for HID

