



OPERATING MANUAL
FOR
HDMI 2.0 SWITCHER
(ML- 21HD-ARC-H2)

Milestone Electronics Pvt. Ltd.

HDMI 2.0 SWITCHER

HDMI SWITCHER by Milestone is a device that allows consumer to share multiple HDMI devices such as computers, laptops, DVD player, DVR, camera, with single projector or monitor or TV, providing single display having HDMI Ports. The features of the HDMI switcher can enable the device to act as a home entertainment box that can output upto 8 channel high quality audio signal for best audio effects.

Models available

ML 21HD-ARC-H2	2 HDMI Inputs with 1 HDMI output (ARC enabled) & 2 Audio outputs with EDID management.
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Features

INSTALLATION	<p>Easy to install – plug and play kind.</p> <ul style="list-style-type: none"> ● HDTV Compatible. ● Can work with DVI inputs & outputs ● Uses Equalization & re-clocking technology.
SHARING	2 Inputs with single projector or monitor or TV
COMPATIBILITY	Fully compatible to 4K HD Ports. 4Kx2K@60Hz. 4:4:4 & supports 3 D format. Support EDID management.
CONTROL OPTIONS	<p>Channels Controlled by</p> <ul style="list-style-type: none"> · Local keypad (Toggle) ● Build in IR Remote with IR Extender connector ● RS232C interface. ● IP, RS422/RS485 interface (optional). ● Active I/P selected automatically in auto mode with fall back feature. ● Scan mode & Manual mode also present
AUDIO FEATURES	<ul style="list-style-type: none"> ● Analog (Stereo) & 8 Channel Digital Audio output (SPDIF) provided for connecting to Audio amplifier. ● HDMI output is ARC enabled or disabled which allows Audio Return functions
INDICATION	LED indication for working set & SCAN Mode
CEC	Supports CEC functions.

SPECIFICATIONS

MODEL	ML 21HD-ARC-H2
INPUT CONNECTORS (HDMI)	2
OUTPUT CONNECTOR (HDMI)	1
OUTPUT CONNECTORS (AUDIO)	EP x 1 TOSLINK x1
DIP SWITCH	8 BIT
KEYPAD SELECTION	1 (Toggle)
BUILT IN IR REMOTE	Yes
IR EXTENDER CONNECTOR FOR REMOTE SENSOR	EP × 1
RS 232 INTERFACE	D9F × 1
MAINS INPUT (DC)	5V/1A
DIMENSION TABLE TOP (mm)	120 x 125x50
WEIGHT	700 g
OPERATING MODE	
1) MANUAL	Yes
2) AUTO WITH AUTO FALL BACK	Yes
3) SCAN	
4) RS232	Yes
5) BUILT IN IR REMOTE	Yes Yes

OPERATION

- ◆ **Operating Mode Selection:** Rear Panel has DIP Switch to Select Auto, Scan & Manual Mode. These modes are set before powering ON the unit. Refer Table 3.

- ◆ **Manual Mode** – (DIP Switch 4 & 5 OFF)

Selection of channel is done through front panel keypad (Toggle), built in IR Remote & RS232. In manual mode Scan & Auto are disabled.

- ◆ **Auto Mode** – (DIP Switch 4 ON & 5 OFF)

In Auto mode whenever cable is inserted in Input Channel, that channel gets selected automatically. If 2 inputs are connected, & if 1 input is removed, the selection automatically shifts to other active channel. In this mode, selection can also be done through front panel switches (Toggle), IR Remote & RS232.

- ◆ **Scan Mode:** (DIP Switch 4 OFF & 5 ON) or (4 ON & 5 ON)

Indicated by SCAN LED on Front Panel. Active I/P is scanned automatically. PWR ON the unit & confirm for the SCAN LED ON. Scanning time for each channel is 20 seconds (default).

To stop scanning, press any channel key from the remote keypad. To start scanning again, press scan Key from the remote keypad of IR. Front Panel has LED to indicate Scan mode status. In Scan mode DIP Switch 1 to 4 is used for setting the time of scanning. Also in scan mode ARC is disabled & Audio is 2.1.

The Scan time can be set anytime using DIP Switch.
Follow the following procedure

- 1) PWR OFF the unit.
- 2) Set the DIP switch for the required scan time as per Table 1 while keeping DIP switch 5 (SCAN) ON.
- 3) PWR ON the unit.
- 4) The active I/Ps will start scanning depending on the time set.

In this mode Auto, Front Keypad selection & RS232 are all disabled.
Selection (manual & scan) is possible only through IR Remote.

TABLE 1

DIP Switch (1□ON, 0□OFF)

1 2 3 4	TIME
0 0 0 0	20 Secs
1 0 0 0	10 Secs
0 1 0 0	20 Secs
1 1 0 0	30 Secs
0 0 1 0	40 Secs
1 0 1 0	50 Secs
0 1 1 0	60 Secs
1 1 1 0	70 Secs
0 0 0 1	80 Secs
1 0 0 1	90 Secs
:	:
:	:
0 1 1 1	140 Secs
1 1 1 1	150 Secs

◆ **RS232 Interface**

D9 female connector from rear panel is used for selecting the switcher through RS232C Interface.

The pin configurations are as per table 4.

TABLE 4

D-9 FEMALE	SIGNAL
2	T _x (OUT)
3	R _x (IN)
5	GRD

Communication parameters are 9600 baud, no parity, 8-bit and 1 stop bit. The simple commands used for selecting the channels are as per table 5.

TABLE 5

CHANNEL	ASCII	HEX
CHANNEL 1	1!	31, 21
CHANNEL 2	2!	32, 21

Whenever any channel is selected, respective LED lights up & also the following RS232C command is send via Tx line of RS232 as per table 6.

TABLE 6

CHANNEL	ASCII CODES
CHANNEL 1	MUXA1PORT 1
CHANNEL 2	MUXA2PORT 2

- ◆ **IR Interface (Remote):** - The Switcher has IR sensor on the front panel. IR-8 Remote is provided with the equipment to select the channels. On the rear side one EP Connector (IR.EXT) is provided

for connecting IR sensor cable (optional) which can be extended upto 30Mts.

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◆ DIP SWITCH

DIP Switch 1 to 4 are used in 2 different ways.

For setting the Scan time in Scan mode (as per TABLE 1).

The same DIP switch 1 to 4 is used for setting, ARC enable or disable, Audio 2.1, 5.1, pass through & for Auto Mode.

DIP 5 to 8 are used for setting SCAN mode ON or OFF & EDID setting.

TABLE-2

DIP Switch	1	2	3	4	5	6	7	8
	ARC	AUDIO		AUTO	SCAN	EDID		

TABLE-3 (0-OFF, 1-ON)

1 ARC	2	3	Audio	4	5	MODE	6	7	EDID	8
0 ARC OFF	0	0	PASS	0	0	Manual	0	0	4K@60Hz	-
1 ARC ON	1	0	2.1	1	0	Scan	1	0	720P@60Hz	
	0	1	5.1	0	1	Auto	0	1	4K@30Hz	
				1	1	Scan	1	1	1080P@60Hz	

