User Manual

VISUALTV Startup Guide



Table of Contents

1 Specification 1
1.1 Dimensions 2
1.2 Connector pin designations 3
1.3 USB Host port 3
1.4 Ethernet port 3
1.5 DIP switch 3
1.6 LED indicator 4
1.7 Battery 4
1.8 Power connection 4
1.9 HDMI Output 5
2 System Settings 7
2.1 System Toolbar 7
2.2 System Information 7
2.3 OS Upgrade 12

1 Specification



Features

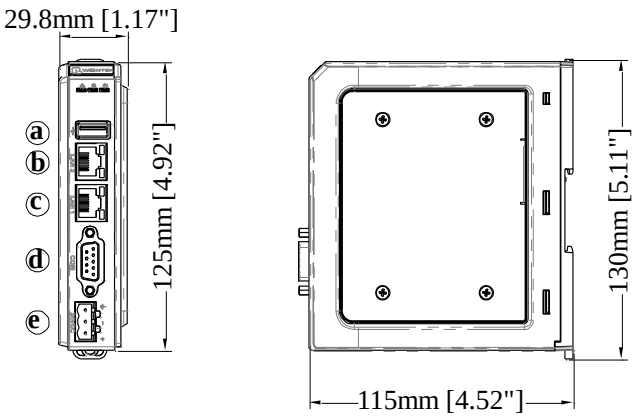
- Full HD 1080p High Resolution HDMI™ Output
- Quad-core Cortex-A17 CPU with High Performance dedicated 3D Processor
- Plays video in high resolution, video decode 1080p H.264
- Supports customized resolution for 16:9 / 4:3 LCD monitor.
- Compact Design and DIN-rail Mountable
- Fan-less Cooling System
- Built- in 4GB Flash Memory and RTC
- One USB Host Port
- Gigabit Ethernet Port
- Supports MPI 187.5K
- Built-in Power Isolator

Memory	Flash	4 GB
	RAM	1 GB
Processor		Quad-core 32-bit RISC 1.6GHz
I/O Port	SD Card Slot	N/A
	USB Host	USB 2.0 x 1
	USB Client	N/A
	Ethernet	LAN 1: 10/100/1000 Base-T x 1 LAN 2: 10/100 Base-T x 1
	COM Port	COM1: RS-232 COM2: RS-485 2W/4W COM3: RS-485 2W
	RS-485 Dual Isolation	N/A
	CAN Bus	N/A
	HDMI Output	Customizable (max. resolution 1920 x 1080)
	Recommended Resolutions (Please use these recommended screen resolutions to avoid compatibility issues.)	720x480, 720x576, 800x600, 1024x768, 1280x720, 1366x768, 1920x1080
	Audio Output	HDMI Audio Output
	Video Input	N/A
RTC		Built-in
Power	Input Power	24±20%VDC
	Power Isolation	Built-in
	Power Consumption	850mA@24VDC
	Voltage Resistance	500VAC (1 min.)
	Isolation Resistance	Exceed 50MΩ at 500VDC
	Vibration Endurance	10 to 25Hz (X, Y, Z direction 2G 30 minutes)
Specification	PCB Coating	Yes
	Enclosure	Plastic
	Dimensions WxHxD	29.8 x 130 x 115 mm
	Weight	Approx. 0.24 kg
	Mount	35mm DIN rail mounting
Environment	Protection Structure	IP20
	Storage Temperature	-20° ~ 60°C (-4° ~ 140°F)
	Operating Temperature	0° ~ 50°C (32° ~ 122°F)
	Relative Humidity	10% ~ 90% (non-condensing)
Certificate	CE	CE marked
	UL	cULus Listed
Software		EasyBuilder Pro V6.04.02 or later versions EasyAccess 2.0 (Optional) CODESYS® (Optional)*

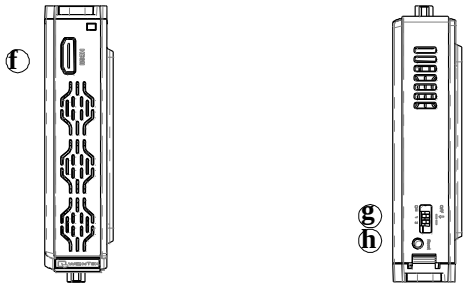
* The terms HDMI, HDMI High-Definition Multimedia Interface, and the HDMI Logo are trademarks or registered trademarks of HDMI Licensing Administrator, Inc.
* CODESYS® is a trademark of 3S-Smart Software Solutions GmbH.

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

1.1 Dimensions



Front View *Side View*



Top View *Bottom View*

a	USB Host Port	e	Power Connector
b	LAN 2	f	HDMI Port
c	LAN 1	g	DIP Switch
d	COM1: RS-232, COM2: RS-485 2W/4W, COM3: RS-485 2W	h	Reset Button

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

1.2 Connector pin designations

PIN#	COM1 RS-232	COM2 RS-485		COM3 RS-485 2W
		2W	4W	
1				Data+
2	RxD			
3	TxD			
4				Data-
5	GND			
6		Data+	RX+	
7		Data-	RX-	
8			TX+	
9			TX-	

1.3 USB Host port

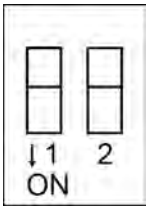
USB 2.0 full speed host interface supports USB mouse devices, keyboards, printers, barcode scanners, and USB disks. While using an external hard drive, please use an external power supply. Do not use USB port to charge external devices.

1.4 Ethernet port

The unit has one 10/100/1G Ethernet port and one 10/100 Ethernet port.
The LED indicators on the Ethernet ports indicate:
Orange LED: LAN link status
Green LED: Active status

1.5 DIP switch

Each HMI is equipped with a reset button and a set of DIP switches. When using DIP switches to change modes, the corresponding functions will be triggered.



SW1	SW2	Mode
OFF	OFF	Normal mode
ON	OFF	Hide HMI System Setting Bar
OFF	**ON**	Update OS
ON	**ON**	Restore factory default

Note: Reboot HMI after adjusting DIP switches to enter the corresponding mode.

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

1.6 LED indicator

LED indicators show the operation status of HMI.

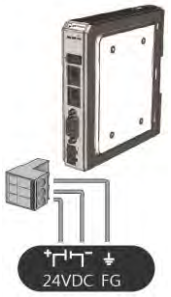
Power (Orange)	Indicates power status.
CPU (Green)	Indicates CPU status.
Communication (Blue)	Indicates communication status, blinks during communication. When communication is good, it may stay on.

1.7 Battery

VISUALTV requires a coin type lithium battery CR1220 to keep the RTC running.

1.8 Power connection

Power: The unit can be powered by DC power only, voltage range: 24±20% Volts DC, compatible with most controller DC systems. The power conditioning circuitry inside the unit is accomplished by a switching power supply. The peak starting current can be as high as 2A.
Connection: To make a connection, use AWG24~12 wires and insulated terminals. Turn the connector screw counterclockwise until the gap is wide open, insert the wire all the way in, and turn the screw clockwise until it is tight.



Note: Connect positive DC line to the '+' terminal and the DC ground to the '-' terminal.

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

1.9 HDMI Output

Supports 1920 × 1080 high resolution HDMI output. Displays image via HDMI or DVI interface LED / LCD.

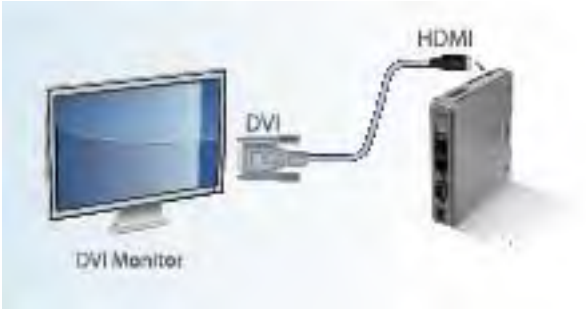
Note: When VISUALTV enters backlight saver mode, an external keyboard or mouse is needed for turning on the backlight.



The following shows how cMT-FHDX's HDMI connector can be used.

1. Connect to DVI monitor.

Use HDMI-to-DVI converter to connect the monitor.



Note: VISUALTV supports resolution 1920x1080p, please use DVI monitor / converter.

2. Directly connect to HDMI monitor.



Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

3. Use HDMI splitter to connect multiple HDMI monitors.



4. Use HDMI switch to connect two VISUALTV with one HDMI monitor.



Note: If not connecting a repeater, the maximum length of HDMI cable allowed is 15m. To reach a longer distance, please use CAT6 cable or a repeater. HDMI converter is used to detect the monitor and correctly output.

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

2 System Settings

For the first time operating the unit, please complete the following system settings. When finished, the project files designed using EasyBuilder can be used on VISUALTV.

2.1 System Toolbar

After rebooting VISUALTV, the Setting window can be opened by tapping the round start button on the screen (video output by HDMI).





How to hide HMI System Setting Bar

When [DIP Switch 1] is set ON, the system setting bar is hidden; when set OFF; the system setting bar is shown. Please reboot HMI for the DIP switch setting to take effect.

System register [LB-9020] can also be used to show/hide system setting bar.

When [LB-9020] is set ON, the system setting bar is shown, and when the register is set OFF, the system setting bar is hidden.

2.2 System Information

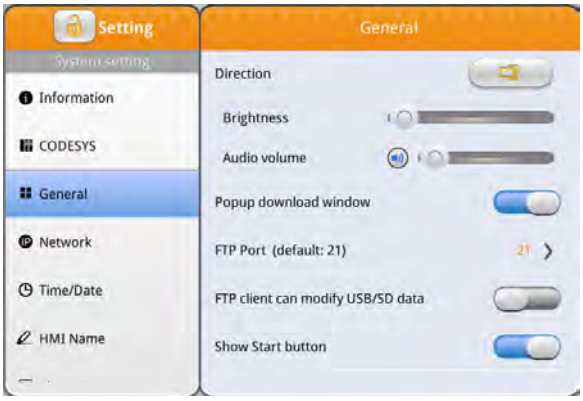
For safety, please set a password to protect HMI parameters from being modified by an unauthorized party. By default, the password is 111111.



CODESYS

Enter the activation code to activate CODESYS.

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000



General

General settings including FTP settings.

[Direction]

Set screen orientation mode to landscape or portrait by selecting degrees from 0 / 90 / 180 / 270.

[Brightness]

Adjust screen brightness.

[Volume]

Adjust volume of HDMI sound output. The monitor used must support DDC/CI.

[Popup download window]

When enabled, the download window can pop up.

[FTP Port]

Select an FTP port.

[FTP client can modify USB/SD data]

When enabled, an FTP client can change the data in the external device connected to HMI.

[Show Start button]

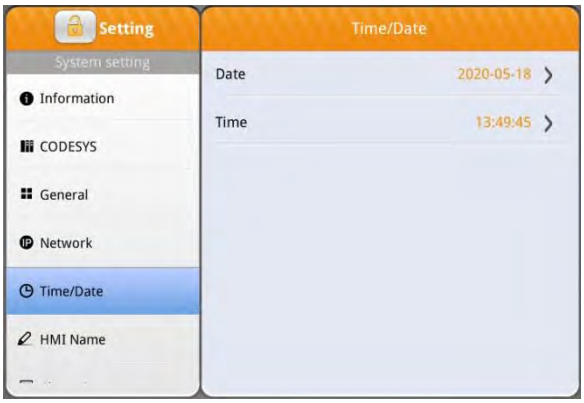
When enabled, the Start button is shown.



Network

Download project file to HMI via Ethernet. The IP address of the target device (HMI) must be correctly set. Users can choose from obtaining an IP address automatically or entering an IP address manually. To use Email or EasyAccess 2.0, please set DNS correctly. ETH1 and ETH2 must use different domains. When CODESYS is activated, HMI can only use ETH2.

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000



Time/Date

Set HMI local date and time.



HMI name

Set the HMI name for identification when downloading / uploading a project.



Clear History

Clear historical data stored on HMI.



Project Management

HMI can be rebooted by clicking the Restart button.

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000



System Password

By default the password is 111111.
User-defined passwords can be used after verification.



Enhanced Security

Add or delete user accounts and manage user privileges.



VNC Setting

When enabled, the device can be connected remotely using VNC.



EasyAccess 2.0

Activate EasyAccess 2.0 service.

Click the icon to download the demo project. Please check your internet connection before downloading the demo project.

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000



Printer

Please see Chapter 23.3 in EasyBuilder Pro user manual for more information about printer installation.



OS Upgrade

Select an OS file saved in a USB disk to upgrade OS. When OS is upgrading, please do not cut off HMI power. For more information about upgrade steps or notes, see the OS upgrade manual of the model in use.



Reset options

Restore HMI to factory settings.

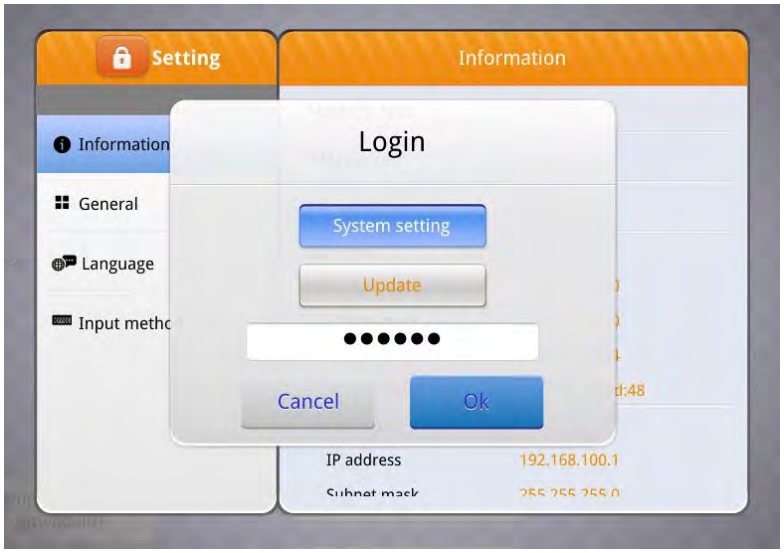
Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

2.3 OS Upgrade

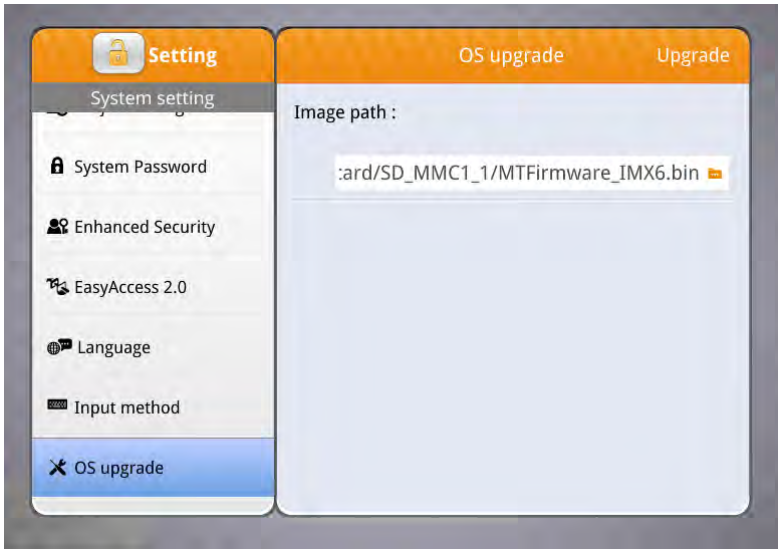
Please follow the steps below to upgrade OS.

Step 1. Copy “MTFirmware.bin” file to a USB disk. (The format of the external storage device should be FAT32.)

Step 2. Tap the Start Button, tap the lock icon of Setting, and then enter the password to log in to System Setting.



Step 3. Tap [OS upgrade] and browse for the file path of the OS image. (pccard stands for SD card and usbdisk stands for USB disk).



Step 4. Tap [Upgrade] in the upper-right corner and OS upgrade will start.

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000