

# HD-1603 Single Input MPEG-4 DVB-T HD Encoder/Modulator User Guide and Install Manual

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## Safety Precautions

The presence of this symbol is to alert the installer and user to the presence of uninsulated dangerous voltages within the product's enclosure that may be of sufficient magnitude to produce a risk of electric shock.



**TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS DEVICE TO RAIN OR MOISTURE. DO NOT OPEN THE UNIT. REFER SERVICING TO QUALIFIED PERSONNEL ONLY.**

- **Do not** apply power to the unit until all connections have been made, all components have been installed and all wiring has been properly terminated.
- **Do not** terminate, change or uninstall any wiring without first disconnecting the unit's power adapter from the device.
- This device is supplied with the appropriately rated power supply. The use of any other power supply could cause damage and invalidate the manufacturer's warranty.
- **Do not** connect the power cord to the device if the power cord is damaged.
- **Do not** cut the power cord.
- **Do not** plug the power cord into an AC outlet until all cables and connections to the device have been properly connected.
- The device should be installed in an environment consistent with its operating temperature specifications. Placement next to heating devices and ducts is to be avoided as doing so may cause damage. The device should not be placed in areas of high humidity.
- **Do not** cover any of the device's ventilation openings.
- **Do not** cover or obstruct the device's fan or fan openings.
- If the device has been in a cold environment allow it to warm to room temperature for at least 2 hours before connecting to an AC outlet.

## Package Contents

This package contains:

- One HD-1603 Encoder / Modulator
- One Power Supply
- One installation / configuration manual

Inspect the package before starting installation to ensure there is no damage and all supplied contents are present. Contact your distributor or dealer should the device be damaged or package contents are incomplete.

## Product Description

The resi-linx digi-MOD HD-1603 Encoder/Modulator provides an MPEG-4 DVB-T output stream, making it ideal for any modern commercial or domestic RF Network. The high quality design allows for watching action packed movies and sports channels on any MPEG-4 HDTV. The space saving design is suitable for discrete integration with existing AV equipment.

### FEATURES:

- Front panel LCD Display for easy installation
- High Resolution Output - up to 1080p
- HDMI Input
- HDMI Loop Through Output
- MPEG-4 (H.264) DVB-T Encoding
- OFDM mode adjustment 8k/2k
- 85dB Output
- Compact housing with Cool & silent operation
- IR Return Path with Power Through option
- Configurable via a web browser



## Specification

### VIDEO INPUTS (Video by Priority)

HDMI Version 1.4

### VIDEO ENCODER

Mode MPEG-4 (H.264)  
Video Resolution 1080p, 1080i, 720p, 576p, 576i, 480p, 480i

### AUDIO ENCODER

Audio Compression MPEG-1 Layer 2 (MP2), MPEG-4 (AAC)

### RF DVB-T SUPPORT

RF Channel Output Single DVB-T Channel between 6-12VHF & 28-69 UHF  
Constellation 64QAM  
Bandwidth 7 MHz  
RF Level Output 85dB  
MER >39dB Typical  
FEC 7/8  
Guard Interval 1/32  
OFDM 8K/2K  
Attenuation Variable  
RF Output "F" - Female 75 ohm

### MANAGEMENT / CONTROL

Front Panel LCD Control Full Menu Access (Up/Down/OK Buttons)  
GUI IE11, Firefox, Chrome

\*\*Subject to change without prior notice

## Installation



System Installer must adhere to Australian Standards AS1367:2007 that provides guidelines for proper grounding and specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as possible.

### UNPACKING AND INSPECTION

Each unit is shipped factory tested. Ensure all items are removed from the container prior to discarding any packing material.

Thoroughly inspect the unit for shipping damage with particular attention to connectors and controls. If there is any sign of damage to the unit or damaged or loose connectors contact your distributor immediately. Do not put the equipment into service if there is any indication of defect or damage.

## Hardware Installations and Connections



It is highly recommended that quality cables and connectors be used for all video and audio source connections.

1. Use a HDMI cable to connect the video source to the HD-1603 HDMI IN.
2. Use a HDMI cable to connect from the HD-1603 HDMI OUT (loop through) port to the local TV.
3. Use a coaxial cable lead to connect from the HD-1603 RF OUT to the TV system.
4. Connect the included power supply to the HD-1603 DC 12V power jack.
5. Connect the power supply the power point.
6. If you require Web Management, connect an RJ45 cable to your PC (refer to page 6 for connection procedure).
7. If IR return Path is required, connect an IR Emitter (RL-IR700/800) to the IR Repeater Port and attach to your source you wish to control. For IR return path to work, please use with RL-RF380, RL-IR700/800 & RL-RF210 Target and follow instructions (please refer to install manual with RL-RF380 for instructions).

#### **NOTE:**

**It is highly recommended that you use a high quality HDMI cable for all source connections.**

# Procedure to Connect to HD-1603 via Web Management Port

The following procedure will allow the installer to setup the encoder via the GUI.

## STEP 1:

Please note, the modulator has a factory default static IP address of 192.168.1.9.

If connecting directly to the remote setup port, a static IP address will need to be set to your PC network adaptor (please refer to Windows Help for instructions). An alternate method is to connect the modulator and the PC to a network router. You will need to 'enable' DHCP on the modulator via the Network Setup menu on the front LCD screen. This process will automatically assign an IP address to each device. Then proceed to Step 2.

## STEP 2:

- Select Start ==> Computer ==> Network

The HD-1603 icon will be shown in the window labelled "Media Devices".

Right Click on the HD-1603 icon and Select 'View Device Webpage'.



## STEP 3:

Once the Welcome Page is displayed select the Encoder Setup tab and the below Login "Authentication Required" screen will be presented. Enter the User Name and Password then click Login.

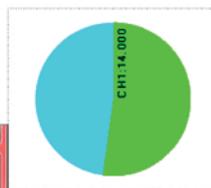
User Name: admin      Default Password: Admin123



- Overview
- Common Setup
- RF Setup
- Encoder Setup
- Network Setup
- Administration

## Welcome!

Device Name: resi-linx-001  
Model Number: HD-1603



Windows Security

The server 192.168.200.250 is asking for your user name and password. The server reports that it is from Protected.

Warning: Your user name and password will be sent using basic authentication on a connection that isn't secure.

admin

.....

Remember my credentials

OK Cancel

Channel Name : CHANNEL-1  
Video Source : HDMI  
Video Output : AVC  
Audio Output : MP2  
Input Bitrate : 14.000

## STEP 4: Common Setup

This page allows you to configure the encoder common settings. After making any change, click “Save Config” to apply changes.



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## Common Setup

This page allows to configure the encodulator's common settings. After making any change, click **Save Config** to apply the change.

Output Channel:	39 (606.5 MHz) ▾
Attenuation:	0 dB ▾
LCN Mode:	AUSTRALIA ▾
Device Address:	1 ▾

Save Config

## STEP 5: Attenuation

Adjust the attenuator on the rear of the HD-1603 to desired level.



## STEP 6: RF Setup

This page allows you to configure the encoder common settings. After making any change, click “Save Config” to apply change.



- Overview
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## RF Setup

This page allows to configure the encodulator's RF output settings. After making any change, click **Save Config** to apply the change.

<b>RF Output 1</b>	
Constellation:	64QAM ▾
FEC:	7/8 ▾
Guard Interval:	1/32 ▾
OFDM Mode:	8k ▾
RF Output:	Normal ▾
Cell ID:	0
TS ID:	1000
Network ID:	12801
Original Network ID:	8228
Network Name:	resi-linx

Save Config

## STEP 7: Encoder Setup

This Page allows you to configure the encoder common settings. After making any change, click “Save Config” to apply change.



- Overview
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## Encoder Setup

This page allows to configure the encodulator's encoder settings. After making any change, click **Save Config** to apply the change.

**Encoder 1**

Video Input:	HDMI
Program Number:	1
Channel Name:	CHANNEL-1
Provider Name:	resi-linx
LCN:	101
Aspect Ratio:	16:9
Video Output:	AVC CBR
HDCP Enable:	<input checked="" type="checkbox"/>
Audio Input:	HDMI
Audio Output:	MPEG1 Layer2 (MP2)
Closed Caption:	<input type="checkbox"/>
Brightness:	<input type="range" value="50"/> 128
Contrast:	<input type="range" value="50"/> 128
Saturation:	<input type="range" value="50"/> 128
Hue:	<input type="range" value="50"/> 128

Save Config

## STEP 8: Network Configuration



- Overview
- Common Setup
- RF Setup
- Encoder Setup
- Network Setup
- Administration

## Network Setup

This page allows to configure the encodulator's network settings. After making any change, click **Save Config** to apply the change.

**CAUTION:** Incorrect settings may cause the encodulator to lose network connectivity. Recovery options will be provided on the next page.

Enter the new settings for the encodulator below:

MAC Address:	F8:0D:EA:40:B5:B7
Host Name:	RESI-LINX-### RESI-LINX-001
	<input checked="" type="checkbox"/> Enable DHCP
IP Address:	192.168.1.2
Subnet Mask:	255.255.255.0
Gateway:	192.168.1.1

Save Config

## STEP 9: Administration

- Overview
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# Administration

**Reboot**

Reboot the system.

**Reset to Default**

Reboot and reset all configuration settings to factory default.

**Backup**

User can backup and download all configuration settings from the device to a local file.

Config File: **Choose File** No file chosen **Upload**

User can upload the file with pre-saved configuration settings to device.

**CAUTION:**The new password must:

- matches a string of 6~8 characters;
- that contains at least one digit;
- at least one uppercase character; and
- at least one lowercase character;

After changing the admin's password, it needs to close current web browser, and open a new browser to use new password.

<b>Old Password:</b>	<input type="text"/>
<b>New Password:</b>	<input type="text"/>
<b>Retype New Password:</b>	<input type="text"/>
	<b>Submit</b>

## Saving your configuration files

We highly recommend you save your encoder configuration files. Simply Click the “Backup” button and the config files will be saved to your computer.

To upload a configuration file- simply click “Choose File” then locate the file you want to upload. Click “Upload Settings” to install the configuration files. This function is helpful to the installer when installing a large number of encoders in a single system.

We highly recommend saving the settings of your encoder.

A “config.cfg” file will be created. Locate the file:

My Computer > C Directory > Documents and Settings > User > My Documents > Downloads > configs.cfg.

## Installing Multiple Encoders in the Same Installation (Stacking)

The following changes are required when using multiple modulators in the same installation (stacking) -

- **Output channel** - Before choosing an output channel, check which channels/frequencies are being used by your local TV stations. Default is 39 UHF (606.5 MHz). If the modulators are on the same output channel as another modulator or FTA channel the TV will not scan the channel in. Place all modulators on available channels between 6 to 12 VHF and 28 to 51 UHF (including adjacent channels - 38, 39, 40, etc.).

### NOTE:

If you plan on using channel 52 to 69 be aware of 4G/LTE transmissions as they may interfere with each other. We recommend installing a filter.

- **LCN (Logic Channel Number)** - default 101. If TV tuner receives two or more LCN's on the same number, including FTA channels - the TV will automatically place the LCN on a free range. In Australia this is 350 and up. Suggest to go 101, 102, 103, etc.

### TIP:

The Logical Channel Number is the number entered into the TV remote to view the modulated channel.

- **Channel Name** - default "CHANNEL-1" this is necessary but recommended for clients to be able to identify channels. For example "APPLE-TV", "FOXTEL", "DVD", etc.

- **TS ID (Transport Stream)** - Default can vary per product. You will need to adjust the TS ID # on each additional modulator up one number per modulator. For example if default is "TS ID #1" - leave on "TS ID #1", place 2nd modulator on "TS ID #2", 3rd on "TS ID #3", etc. If the TS ID is the same number the TV tuner will not scan both channels in.

- **Program Number** - Default can vary per product. You may need to adjust each additional modulator Program Number up one number per modulator. For example, if default is "Program Number - 1" - leave on "Program Number - #1", place 2nd modulator on "Program Number - #2", 3rd on "Program Number - #3", etc. If the Program Number is the same number the TV tuner will not scan both channels in. Another numbering option is to assign the program number the same as the LCN.

### NOTE:

Most TVs do not have an issue with this setting but we recommend changing it just in case.

## IR Distribution

Please refer to RL-RF380 & RL-RF210 for IR Distribution setup and configuration.

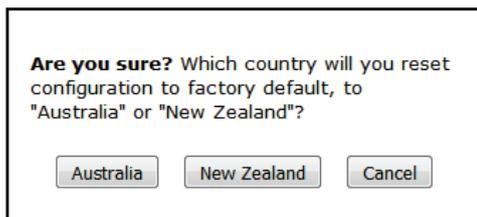
### NOTE:

When using IR return path via RL-RF380 system, ensure the unit is remotely powered from the modulator and no local power supply is connected to the RL-RF380.

## Changing Country via GUI

From the Administration menu, select 'Reset to Default'.

The following selection menu will be displayed.



Select new country option. The GUI will display a 'Reboot in Progress' screen.

Once the reboot is complete, the Welcome screen will be displayed.

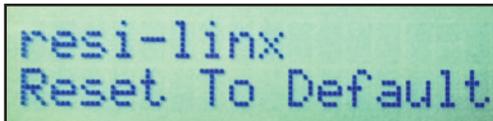
The modulator can now be configured for the selected country.

## New Zealand Setup

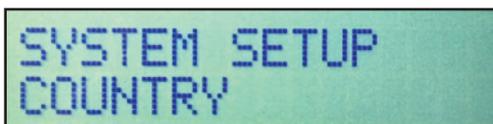
### NOTE:

The HD-1603 is factory set to the Australian DVB-T channel plan.

1. Switch off modulator.
2. Hold down arrow Up & Down buttons.
3. Continue to hold buttons down while switching on the power button on rear of unit.
4. When 'Reset to Default' appears on the LCD screen, release the Up & Down buttons.



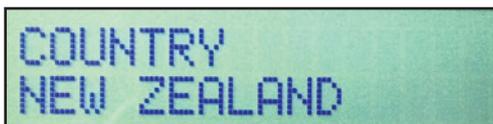
5. System Setup Country will then appear on the screen.



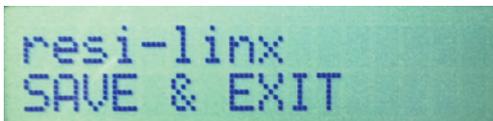
6. Press the OK button to enter the menu. 'Country Australia' will be displayed.



7. Select 'New Zealand' with the Up & Down buttons. Press OK button to confirm.



8. Press the Up or Down button and select the 'Save & Exit' option.



9. The modulator will not reboot. It will display 'resi-linx' HD Series' and then a status screen.

# digi-MOD HD-1603 Product Notes

ITEM	VALUE
Password	
Serial Number	
Installation Date	
Purchase Date	
Device Name	
Firmware Version	
Streaming Method	

digi-MOD<sup>®</sup> **HD** by resi-linx<sup>®</sup>

[www.resi-linx.com](http://www.resi-linx.com)

