

INSTALLATION & CONFIGURATION MANUAL

Q4K-R1



4K Pass Through HD Encoder-Modulator

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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 12VDC power supply with the center pin positive. The use of any other power supply could cause damage and invalidate the manufacturer's warranty.
- ❖ DO NOT power on the unit 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.
- ❖ If the device has been in a cold environment allow it to warm to room temperature for at least 2 hours before connecting power.



PACKAGE CONTENTS

This package contains:

- ❖ One Q4K-R1 4K HD Encoder/Modulator
- ❖ One Adaptor
- ❖ 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



ZyCast Technology Q4K-R1 Modulator converts up to 4K video and audio signals to Digital Video Broadcasting (DVB) high definition COFDM. The unit features programmable channel and LCN. The unit's front-mounted LCD display allows easy configuration and adjustments.

The compact and economical Q4K-R1 Modulator is perfect for multi-video distribution solutions in the commercial and institutional market (hotels, motels, sports bars, restaurants, hospitals, casinos, business and university campuses, digital signage, etc.) as well as home entertainment systems.

Features

- ✧ H.264 AVC Encoding
- ✧ Up to 4K HDMI Input, 4K HDMI Loop through, HD RF Output
- ✧ HDMI 2.0 & HDCP 2.2 Compliant
- ✧ Built-in IR control
- ✧ Gain Control (-20dB Manual Attenuation)
- ✧ RJ-45 Port for Web Management
- ✧ Video Resolution: Same as Input / Up to 720p
- ✧ Perfect, Clean, and Clear Picture on High Motion video, Sports, Text Crawls/Rolls, etc.
- ✧ Front Panel LCD for Channel & LCN setup
- ✧ Cool & Silent Operation

Q4K-R1 SPECIFICATIONS

**Specifications subject to change without prior notice*

Video / Audio Input		Video/ Audio Encoding Profile	
HDMI 2.0		Video	
Connectors	Dual (One for Input ; One for Loop-through)	Output Resolution	Same As Input/ 720p
Audio	Embedded PCM	Video Codecs	H.264
HDCP Compliance	1.4 and 2.2	Audio	
Input Resolution	4k / UHD / 1080p / 1080i / 720p	Audio Codecs	MPEG1 Layer II / MPEG4 AAC
Output		General	
QAM		Local Monitoring	LCD
Standard	DVB-T	IR Emitter	Single
Connector	1x "F" Female	Web GUI Supported	Firefox, Chrome
Frequency Range	177.5MHz to 816.5MHz (Ch6-Ch69)	Password Protected	GUI:User Settable
Output Level	85 dB μ V Typical (With 20dB Range Manually Adjustable)	Power Supply	12VDC 1.5A
Flatness Across Full Band	\pm 2 dB	Consumption	6.5 Watts
MER	39 dB Typical	Operation Temperature	0c to +45c
Carrier (OFDM Mode)	2K / 8K	Storage Temperature	-20c to +70c
Guard Intervals	1/32	Dimension	236mm x 145mm x 34mm
Code Rate (FEC)	7/8	Weight	892g
Modulation	64-QAM	Language	English
Output Impedance	75 ohm		
RF Output Return Loss	10 dB Typical		
LCN	Embedded, Varies by Country Regulations		

INSTALLATION



System Installer must adhere to Article 820-40 of the NEC 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 INSTALLATION and CONNECTIONS



1. Use a HDMI cable to connect the video source (e.g., CATV, DVD, VCR, Camera) to the unit's **HDMI IN** port. It is highly recommended that quality HDMI cable be used for all video source connections.
2. Use a HDMI cable to connect the unit's **HDMI OUT** port to a television. Or Use a quality 75Ω coaxial cable with "F" connectors from the unit's **RF OUT** jack to the distribution system (combiner or reverse splitter) or directly to a television.
3. Connect the included power supply to the unit's **DC 12V** POWER jack.
4. Connect the power supply to an appropriately rated AC power outlet.
5. Use a quality RJ45 cable to connect the **Web Management** port to a computer RJ45 port for setup/ manage the unit.
6. If applicable, connect an IR repeater jack to the **IR REPEATER** port for IR remote control function. If needed, you can turn **ON** the **REMOTE POWER** for sending a 12V power through RF OUT to the connected module.
7. Connect the included adaptor to the unit's **DC 12V** Power plug.
8. Connect the adaptor to an appropriately related AC power outlet.

Reset to Default – Turn OFF the unit. While pressing UP and DOWN buttons at the same time, turn ON the unit. Release the UP and DOWN buttons when the LCD shows Reset to Default. The unit will reset to factory default. This can also be defaulted via WEB GUI (under Administration)



Caution: Once this process is complete the unit will automatically reset to the factory default settings. All settings or changes to the encoder/modulator will be lost.

MODULATOR SETUP AND CONFIGURATION

DEVICE Programming and Setup

To Setup and Program and the Encoder you can use the GUI Interface or the LCD Front Panel

Default Connection to the GUI Interface via Static IP address:

Factory Default IP: 192.168.1.9


1. Connect an Ethernet cable directly (**no Cross Over cable required**) to the Web Management Port on the rear panel of the encoder or connect the Ethernet cable to an Ethernet switch. Connect an Ethernet Cable to your PC/Laptop.

2. Modify your PC/Laptop IP address to 192.168.1.11.

3. Enter '192.168.1.9' into your web browser.

 Enter GUI and make required device changes.

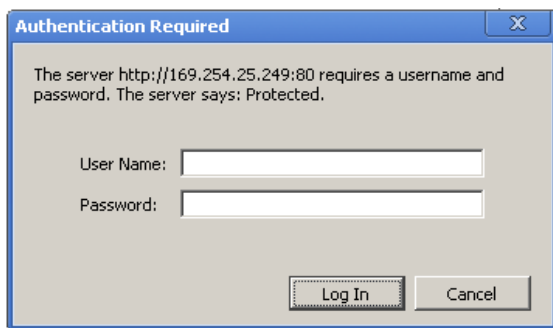
 Save all changes as required, upload and reboot changes.

 Verify parameters then end web session.

Note: The installer can choose to set "enable DHCP" via Front Panel LCD or at the WEB MANAGEMENT SETUP section.

Note: To setup the encoder using the Front Panel LCD see "Modulator Configuration via Front Panel LCD".

User will be presented with encoders '**Authentication Required**' screen.



Enter User Name and Password.

User Name: **admin**

Password: **Admin123**

Procedure to connect to the Encoder via the Web Management port for DHCP

The following procedure will allow the installer to setup the Encoder via the GUI

(Intranet setup- closed LAN setup)

1. Power up the Encoder

Connect encoder using a standard CAT5/6 cable from the Web Management port (located on the rear panel of the encoder) to a switch or direct to PC. Connect a CAT5/6 cable from the switch to a PC.

2. Set the PC via the Control Panel to “Obtain an IP address automatically”

Start- Control Panel

View Network Status and Tasks

Adjust your computer's settings

View by: Category ▾



System and Security
Review your computer's status
Back up your computer
Find and fix problems



Network and Internet
View network status and tasks
Choose homegroup and sharing options



Hardware and Sound
View devices and printers
Add a device
Connect to a projector
Adjust commonly used mobility settings



Programs
Uninstall a program



User Accounts and Family Safety
Add or remove user accounts
Set up parental controls for any user



Appearance and Personalization
Change the theme
Change desktop background
Adjust screen resolution



Clock, Language, and Region
Change keyboards or other input methods
Change display language



Ease of Access
Let Windows suggest settings
Optimize visual display

3. Select 'Change Adapter Settings' from the left pane

Control Panel Home

Manage wireless networks

Change adapter settings

Change advanced sharing settings

View your basic network information .



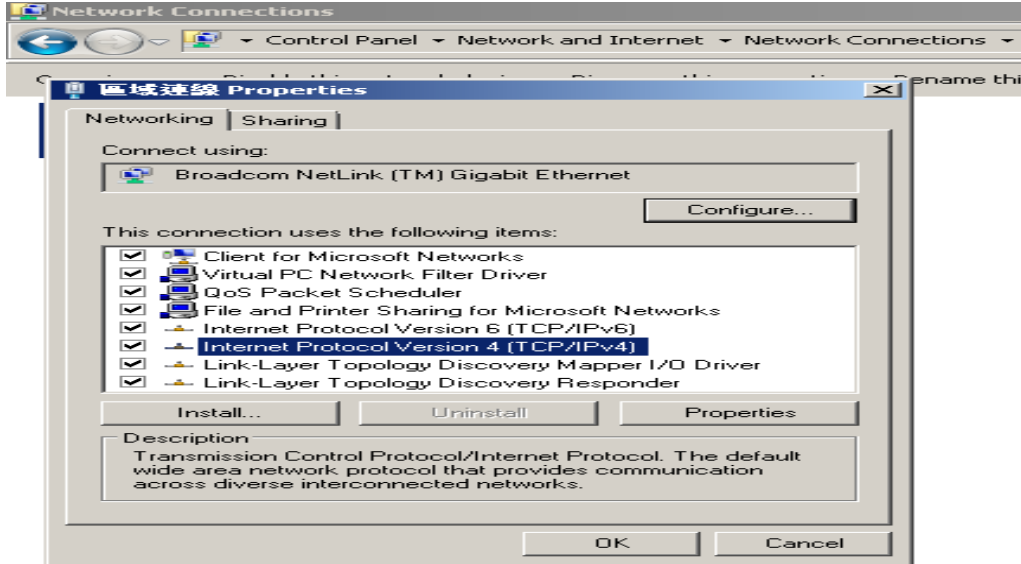
NB5741G
(This computer)

View your active networks

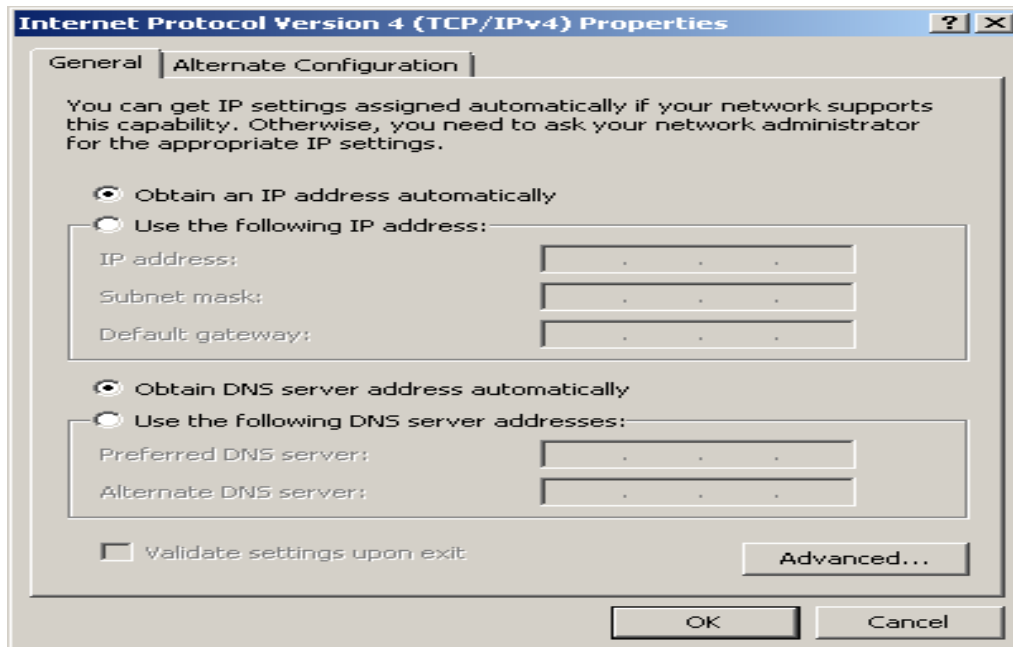
4. **Select** Local Area Connection Icon

Then Right Click – Select Properties

Internet Protocol Version 4(TCP/IPv4) Properties

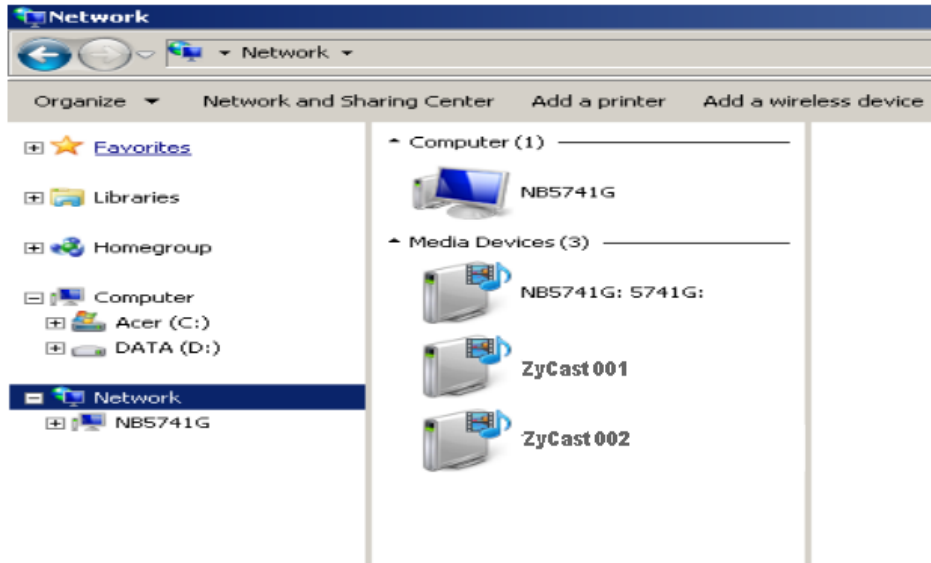


5. **Select** "Obtain an IP address automatically" & "Obtain DNS server address automatically"



6. After setting the PC to obtain IP address & Obtain DNS server automatically

Select Start- Computer- Network



7. After selecting Network- the unit will show up on the right side under Media Devices. Each device will show up by Device Address. (ex. ZyCast001, 002, 003...)

Right Click on the icon for the Encoder you want to setup. **Select 'View device webpage'**



8. **Overview** page will be displayed as shown (figure for example)

The screenshot shows the ZyCast DVB 4K Series Overview page. The navigation bar includes: ZyCast DVB 4K Series, Overview (selected), Encoder Setup, RF Output Setup, Network Setup, and Administration.

Device Name	Model Number	Serial Number	MAC Address	Firmware Version	Net Version
Q4K-R1_278902	Q4K-R1	1917 278902	F8:0D:EA:94:41:76	20190304_1050	1.0.29

	Video Input	Video RF Output
Resolution	NONE	1280x720p59.94

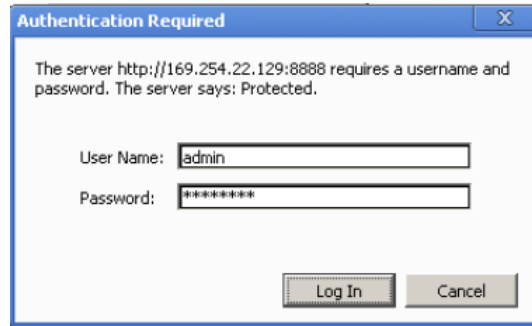
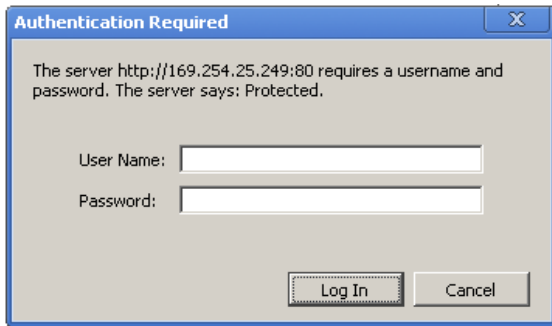
RF Output 1

RF Output	Channel	Constellation	Output Bitrate	Channel Name	Video Source	Video Output	Audio Output	Video Bitrate	Status
1	39 (606.5 MHz)	64 QAM	27.710 Mbps	CHANNEL-1	HDMI	H.264 CBR	MP2	13.600 Mbps	Freerun

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9. **Select** the Common Setup tab.

User will be presented with encoders '**Authentication Required**' screen.



10. **Enter** User Name and Password.

User Name: **admin**

Password: **Admin123**

Encoder Setup

Encoder page will allow you to change the following common requirements – LCN & Channel Name. Also allow control of the Output Resolution, HD & SD Bitrate, HDCP and PID's – these are not required to be changed in most installations

ZyCast[®] Technology

ZyCast[®] DVB 4K Series Overview Encoder Setup RF Output Setup Network Setup Administration

Encoder Setup

This page allows the user to configure the device's encoder settings.

Encoder 1	
LCN (Channel Number)	101
Channel Name	CHANNEL-1
Provider Name	ZyCast
Video Input	HDMI
HD BitRate(Mbps)	24
SD BitRate(Mbps)	5
Resolution	720p
Program Number	101
Video Output	H.264 CBR
HDCP (Test Mode)	<input checked="" type="checkbox"/>
Audio Output	MPEG1 Layer2 (MP2)
PMT PID	1010
Video PID	1011
Audio PID	1012
PCR PID	1011

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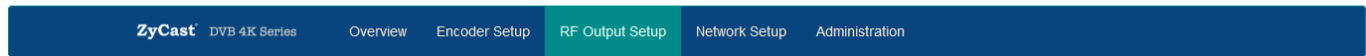
Note: For use in Australia with Foxtel IQ4 (4K STB) – please use default “Resolution” of 720p for smooth clear HD pictures.

Please adjust the attenuation by adjusting the Gain control from the unit.



RF Setup

RF Setup will allow you to change the RF Output Channel. Also, ONID, NID and TSID – these are not required to be changed in most installations



RF Output Setup

This page allows the user to configure the RF settings. Enter/Select the required settings for each RF Channel. Use the **Save and Confirm** button to save any changes made.

ONID	NID	TSID	Network Name	RF	Channel (Frequency)	BW (MHz)	Constellation	FEC	Guard Interval	OFDM Mode	CELL ID	Bit Rate Mbps
8228	12801	101	ZyCast	Normal	46 (655.5)	7	64 QAM	7/8	1/32	8k	0	24.000/27.710

Save and Confirm Reset

Network Setup

Network Setup will allow you to change the Hostname, DHCP, IP Address and other IP settings

Network Setup

This page allows the user to configure the device's network settings.

Hostname	<input type="text" value="Q4K-R1_268200"/>
MAC Address	F8:0D:EA:84:17:A8
DHCP	<input type="checkbox"/>
IP Address	<input type="text" value="192.168.1.9"/>
Subnet Mask	<input type="text" value="255.255.255.0"/>
Default Gateway	<input type="text" value="0.0.0.0"/>
<input type="button" value="Save and Confirm"/> <input type="button" value="Reset"/>	

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Administration

Administration will allow you to upload or download settings to the Q4K-R1 – also Reboot or Reset to Default & Password

Administration

Backup / Restore [Password](#)



Download current configuration settings to a local file.

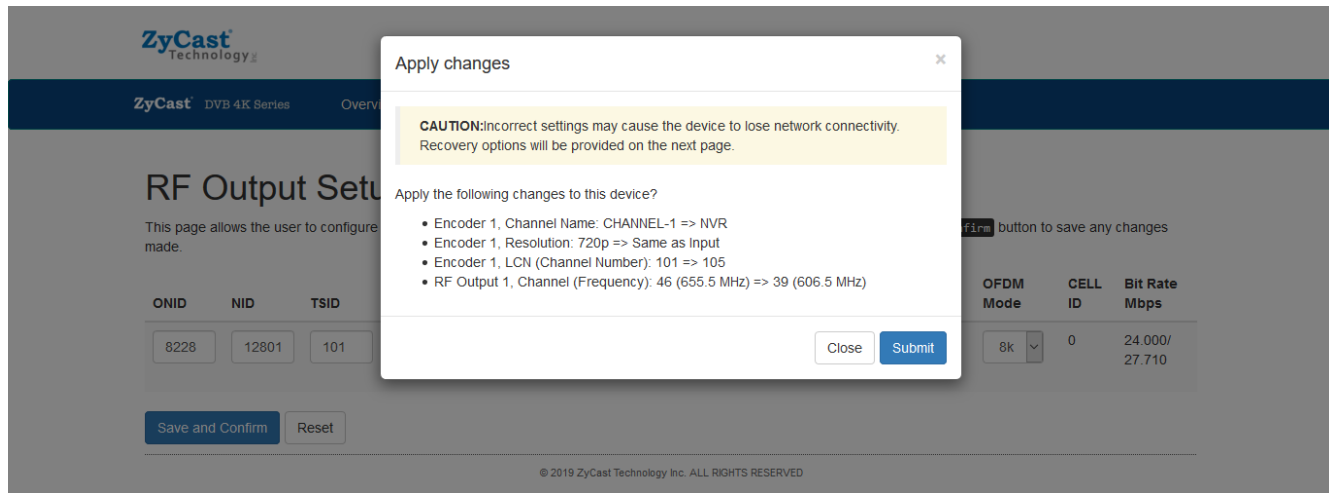


Upload a pre-saved configuration to the device.

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Double check your changes before submitting

Before submitting all the changes you have set – this page will confirm the changes you have made. Once you agree – simply click “Submit” and they will be sent to the modulator.



LCD Menu – Password is “0000”

The LCD menu is in the same order as the WEB GUI

Encoder Setup - Default

LCN (Logic Channel Number) – 101

Channel Name – Channel-1

Provider Name – ZyCast

HD Bitrate - 24

SD Bitrate - 5

Output Resolution – 720p

Program Number - 101

HDCP - Test

Audio Output – MP2

PID's

RF Output

Channel Frequency – 39UHF (606.5Mhz)

Network Name - ZyCast

Network Setup

Reboot

Reset to Default

Download Settings

Upload Settings

Password

Q4K-R1 4K HD Encoder/Modulator Notes

PRODUCT NOTES:

ITEM	VALUE
DEVICE NAME	
PURCHASE DATE	
INSTALLATION DATE	
SERIAL NUMBER	
FIRMWARE VERSION	