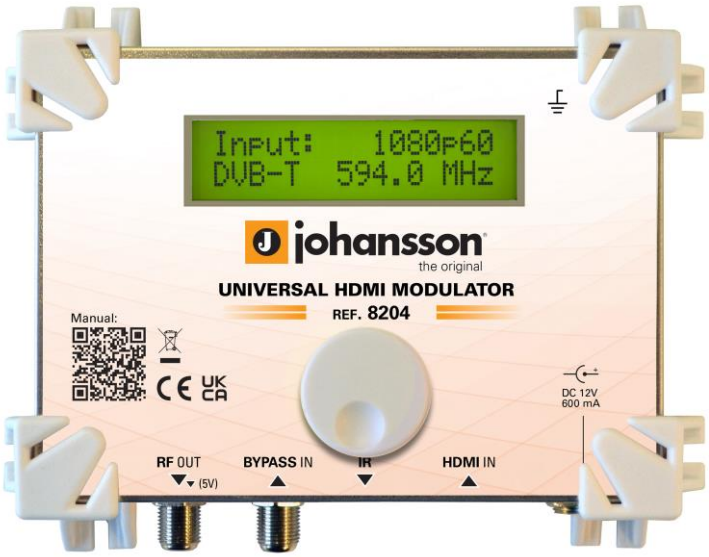
User Manual

UNIVERSAL HDMI Modulator

Ref. 8204



SW1.0.1

CONTENTS

T +32 57 33 33 63

email sales@unitrongroup.com

www.unitrongroup.com

1. INTRODUCTION

1.1. Product description

Convert your local HDMI signal into an RF signal, ready for distribution over coaxial cables. These modulators support all universal cable and terrestrial standards.

- 1 HDMI input, capable of receiving all resolutions up to 1080p60.
- 1 RF input, to by-pass terrestrial or cable signals.
- 1 RF output: DVB-T(2), DVB-C, DTMB, ATSC-C/T and ISDB-T
- IR link
- Perfect picture thanks to a MER comparable to other premium headend equipment.
- Easy to use menu structure, in combination with the Johansson rotary/push button.
- Optimized for cascading multiple modulators on your coaxial network.
- Smallest housing in its range.
- Most stable HDMI modulator on the market

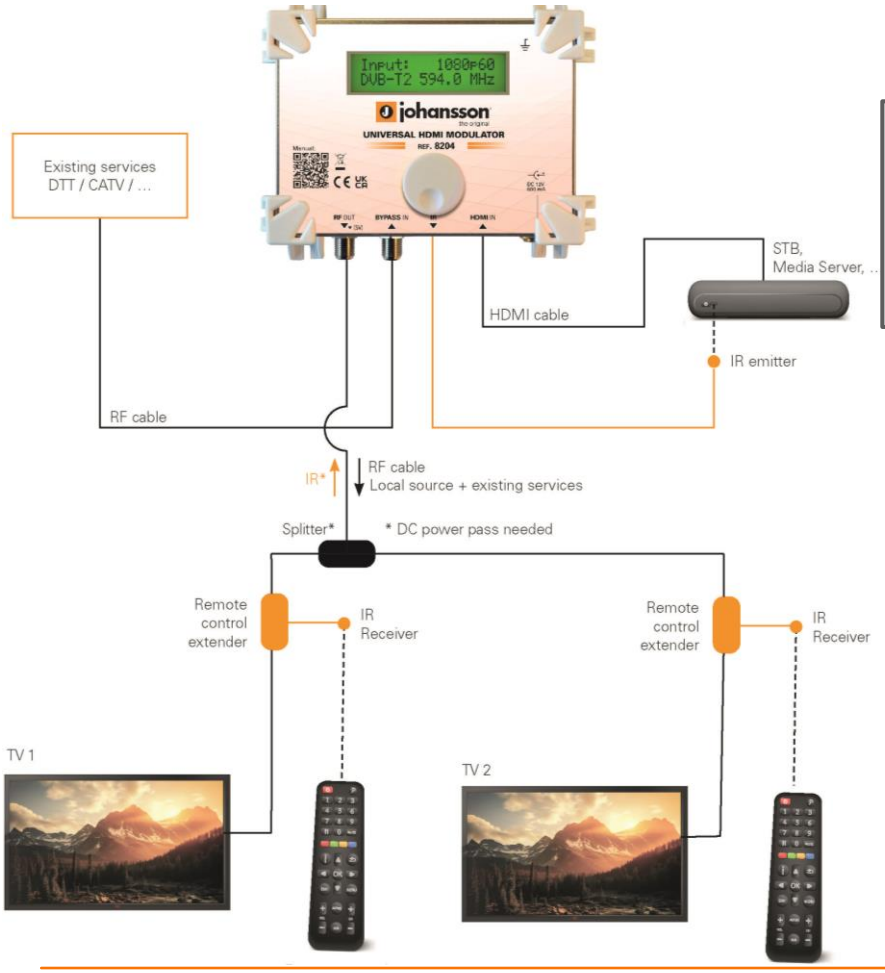
1.2. Package contents

- 1x HDMI Modulator (ref. 8204)
- 1 power adaptor

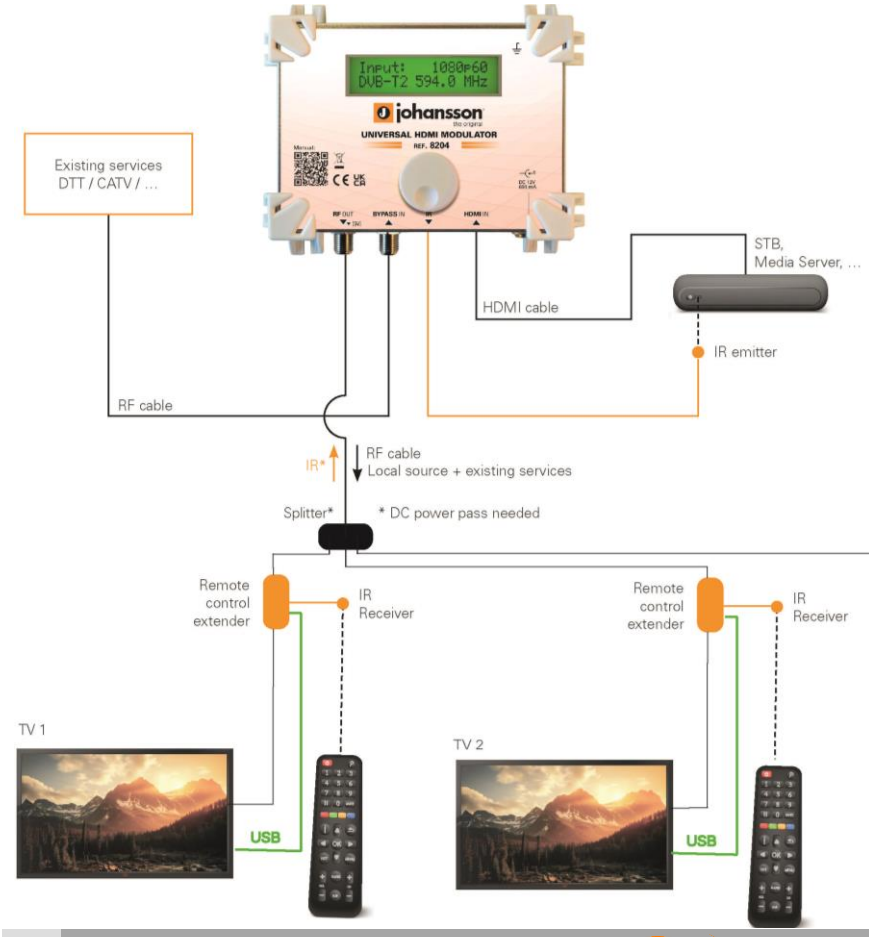
1.3. Hardware installation

- Connect the Power Adapter to the Power supply socket
- Connect an earth wire to the appropriate clamp
- Connect the HDMI output of a Blu-Ray player, DVD player, a satellite receiver or any other video source with the HDMI input
- Connect your TV to the RF output connector
- Optionally, you can insert an existing coaxial distribution to the Bypass In connector. This will result in a combination of the HDMI modulated signal and the existing coaxial distribution on the RF output connector

INSTALLATION WITH IR LINK



USB power not needed when using 1 or 2 IR KITs



When combining 3 IR KITS or more, make sure to power the IR KIT using the USB cable

1.4. Safety Instructions

Read these instructions carefully before connecting the unit

To prevent fire, short circuit or shock hazard:

- Do not expose the unit to rain or moisture.
- Install the unit in a dry location without infiltration or condensation of water.
- Do not expose it to dripping or splashing.
- Do not place objects filled with liquids, such as vases, on the apparatus.
- If any liquid should accidentally fall into the cabinet, disconnect the power plug.

To avoid any risk of overheating:

- Install the unit in a well aired location and keep a minimum distance of 15 cm around the apparatus for sufficient ventilation
- Do not place any items such as newspapers, tablecloths, curtains, on the unit that might cover the ventilation holes.
- Do not place any naked flame sources, such as lighted candles, on the apparatus
- Do not install the product in a dusty place
- Use the apparatus only in moderate climates (not in tropical climates)
- Respect the minimum and maximum temperature specifications

To avoid any risk of electrical shocks:

- Connect apparatus only to socket with protective earth connection.
- The mains plug shall remain readily operable
- Pull out power plug to make the different connections of cables
- To avoid electrical shock, do not open the housing of adapter.

Maintenance

Only use a dry soft cloth to clean the cabinet.
Do not use solvent
For repairing and servicing refer to qualified personnel.

Dispose according your local authority's recycling processes

2. SOFTWARE SETTINGS

The use of the Johansson rotary/push button is very simple, see the table below.

	**Push** the button **2s** to enter the basic configuration. **Push** the button to confirm your selections.
	When **rotating** the button you scroll through the different screens.

⚠ **Important remark :** For fastest manipulation of the menu, the modulator only activates the settings at the end ("Save & Exit").

Before entering the menu, the modulator already gives you on the start screen the most important parameters of the modulator :

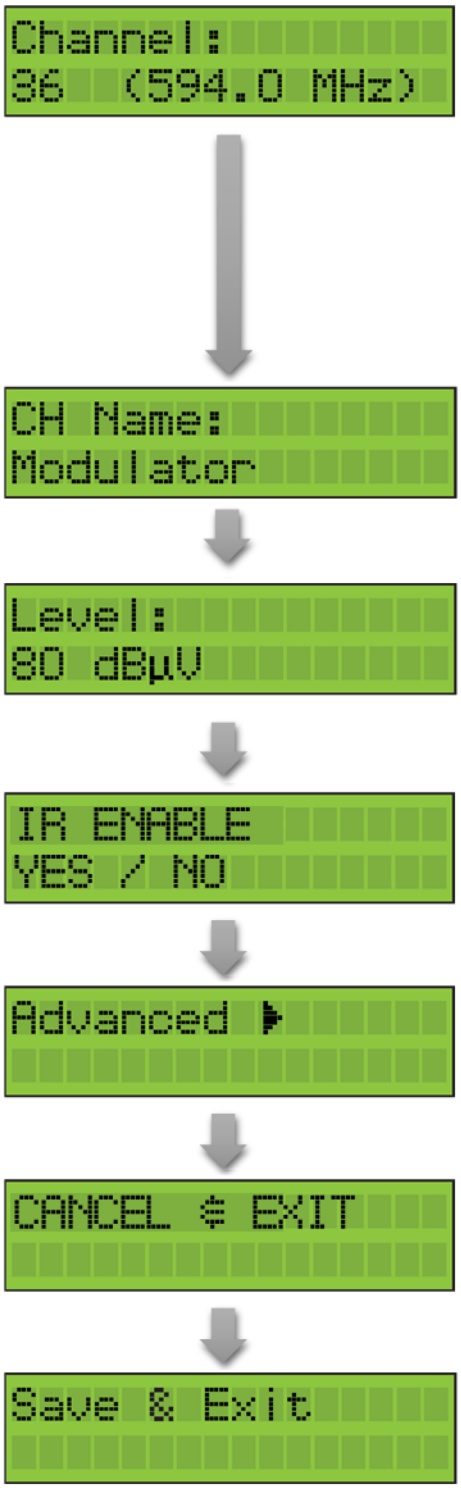
- The first row indicates if an HDMI signal is detected and its resolution.
- The second row shows the output type and output frequency.

2.1. Basic configuration

In this part we will make the BASIC CONFIGURATION to start using the HDMI Modulator. In most cases, this will be sufficient to configure the product. Only in special cases, where detailed settings have to be set, you will need to use the advanced configuration. See the next paragraph.

The best way to configure the product is to follow the menu step by step. Some of the settings have effect on 1 or more of the following settings. This means for instance that step1 (Country) will overrule step 2 (Output type). If you have set for instance the output type to ATSC-T and then you go back to country and configure this to be France, ATSC-T will be changed into DVB-T (as ATSC is not supported in France).

Menu read out:	Explanation:	Note:
Input: 1080p60 DVB-T 594.0 MHz		
Push 2 sec.		
Country: France	Configuring the HDMI Modulator and the TVs to your country guarantees better performance, like the order or sequence of your channels (LCN). If the countries of this modulator and the TV do not match, LCN will not work properly. Choosing the correct country will also help you to make the other settings of the HDMI Modulator easier! The country will preconfigure the necessary advanced settings like channel/frequency plan, LCN, ONID, SID and TSID. When the country displays “Other”, this means some advanced settings were modified by the user.	*The country will determine the next 2 menu steps : which output types and what channel plans are available. For instance in France ISDB-T will not be available.* *This is the reason why it is advised to follow the menu step by step.*
Output Type: DVB-T	The output type defines the standard of the modulated output signal. Depending on the product reference, this can be DVB-T, DVB-C, DTMB, ATSC-T, ATSC-C or ISDB-T. *	*The range of possible standards depends on the country.*



This parameter determines on which output frequency the modulated signal will be transmitted.

If a channel plan exists for your country and the selected output type, the modulator will allow you to select the channel. If not, you will need to set the frequency.

F.i. when output type is set to "DVB-C", the frequency will be displayed.

The channel plan depends on the country and the output type.

This is the name which will be displayed on the TV screen.

max 15 characters small & capital letters, numbers, "-" "_" "space" Scroll till underlined arrow to confirm

This determines the level of the RF modulated signal on the output.

This output level ranges from 59 to 95 dBµV

dBm can also be used (see Advanced>Preferences).

Choose to turn IR on or off

See explanation in "2.2 Advanced configuration".

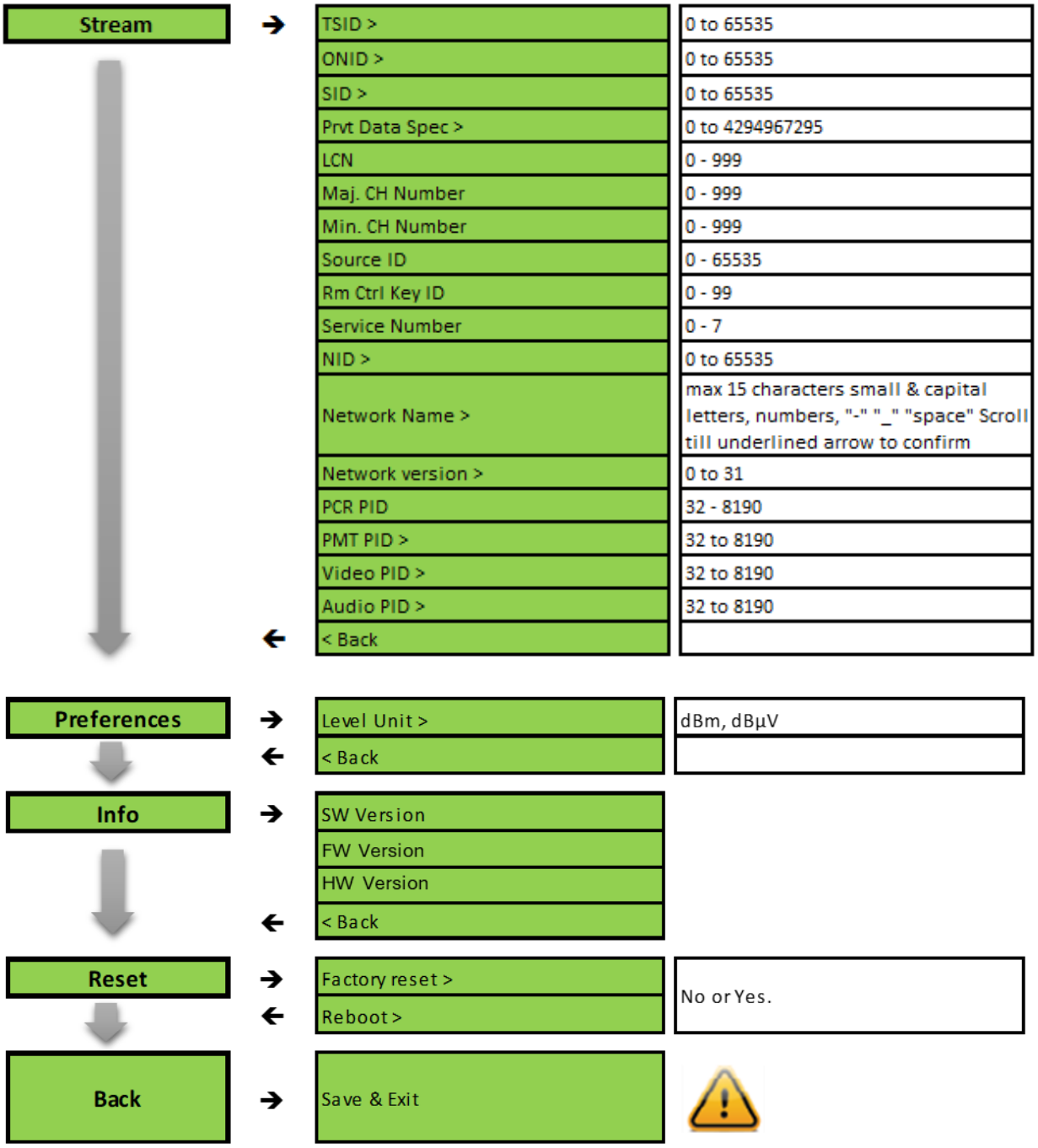
This will exit without saving and storing the new settings.

This will activate and store the new settings.

2.2. Advanced configuration

In this part we will explain the ADVANCED CONFIGURATION of the HDMI Modulator. This will however not be needed in most installation. The advanced configuration includes the following screens:

Menu read out:		Parameter *	Range (can depend on product reference and other settings)
RF Output	→	Output Type >	DVB-T, DVB-T2, DVB-C, ISDB-T, ATSC-T, ATSC-C, DTMB
		Frequency >	100-1000 MHZ
		Bandwidth >	6, 7, 8 MHz
		Symbol Rate >	5000 - 7000
		Constellation >	QPSK, QAM-4NR, QAM-16, QAM-32, QAM 64, QAM-128, QAM-256,8VSB
		Guard Interval >	1/4, 1/8, 1/16, 1/32 For DVB-T2: 1/3, 2/5, 3/5, 4/5)
		Code rate >	1/2, 2/3, 3/4, 5/6, 7/8
		FFT Mode >	2k, 8k
		Carrier Type: >	Multi-carrier , single-carrier
		Interleave >	None, 240, 720
		Sync Frame >	420, 595, 945
		PN Phase >	Constant, Variable
	←	< Back	
Video	→	Encoding Type	H264 , MPEG-2
		Bit Rate >	Starting from 2000 Kbps, but limited by MUX settings (see note 1)
		GOP Size >	1 to 60
	←	< Back	
Audio	→	Encoding Type >	AAC, MPEG2
	←	< Back	



Note 1 : If you are not able to reach for instance 18.000kbps, you will need to increase the bandwidth by changing the "RF Output" settings (set constellation to 64QAM, guard interval to 1/32 and/or code rate to 7/8).

Note 2 : Don't forget to "Save & Exit" to activate your new settings.

* This menu in the manual shows all possible options. However, depending on the chosen Output Type/standard on the device, only certain options will be displayed.

3. TECHNICAL SPECIFICATIONS

		8204
Video resolution	-	480i up to 1080p
Video encoding	-	H264/AVC / MPEG-2
Audio encoding	-	MPEG1 Layer II / AAC
Connector type	-	HDMI type A
Frequency	MHz	5 - 1218
Loss to RF output	dB	2
Freq range modulator	MHz	174 - 1000
Output level	dBµV	OFF / 50 - 95
MER	dB	Typ. 38
Basic configuration	-	Country | Output Type | Output Frequency | Output Level | Channel Name
Advanced configuration	-	RF | Video & Audio | SID | PMT, VPID, APID | NIT, ONID | LCN | PDS | TS ID
Power	-	Input Voltage: 12 VDC | Consumption: 5 W Typ. (6 W,500mA, max.) | DC Jack Ø 2.1 mm
Dimensions	mm	155 x 120 x 60
Weight	kg	0.6
Accessories	-	12V power adapter

OUTPUT SETTINGS		8204						
Output type	-	DVB-T	DVB-T2	DVB-C	ATSC-T	ATSC-C	DTMB	ISDB-T
Bitrate	Mbps	2 - 31.5	2 - 40	2 - 50.5	2 - 19	2 - 26,5	2 - 32	2 - 23
Channel bandwidth	MHz	6,7 or 8		2 or 8	6		6 or 8	6, 7 or 8
Constellation	-	COFDM (QPSK / 16QAM / 64QAM)		16QAM 32QAM 64QAM 128QAM 256QAM	8VSB	64QAM	4QAM QAM-4NR 16QAM 32QAM 64QAM	COFDM (QPSK/ 16QAM/ 64QAM)
Other settings	-	Code rate Guard Interval 2K-8K					Interleave Code rate 2K-8K Sync frame PN phase	Code rate Guard Interval 2K-8K

4. CONDITIONS OF WARRANTY

Unitron N.V. warrants the product as being free from defects in material and workmanship for a period of 24 months starting from the date of production indicated on it. See note below.

If during this period of warranty the product proves defective, under normal use, due to defective materials or workmanship, Unitron N.V, at its sole option, will repair or replace the product. Return the product to your local dealer for reparation.

THE WARRANTY IS APPLIED ONLY FOR DEFECTS IN MATERIAL AND WORKMANSHIP AND DOES NOT COVER DAMAGE RESULTING FROM:

- Misuse or use of the product out of its specifications,
- Installation or use in a manner inconsistent with the technical or safety standards in force in the country where the product is used,
- Use of non-suitable accessories (power supply, adapters...),
- Installation in a defect system,
- External cause beyond the control of Unitron N.V. such as drop, accidents, lightning, water, fire, improper ventilation…

THE WARRANTY IS NOT APPLIED IF

- Production date or serial number on the product is illegible, altered, deleted or removed.
- The product has been opened or repaired by a non-authorized person.

NOTE

Date of production is YYWW format, example 1644 = year 2016 – week 44.
For the serial number barcodes, the date corresponds to the 4 first numbers

www.unitrongroup.com

UNITRON NV
Frankrijklaan 27
B-8970 Poperinge
Belgium

T +32 57 33 33 63

sales@unitrongroup.com

www.unitrongroup.com