

# RFT-855

**2 MUX DVB-T/T2/C --> COFDM HD remux modulator**

## User Manual

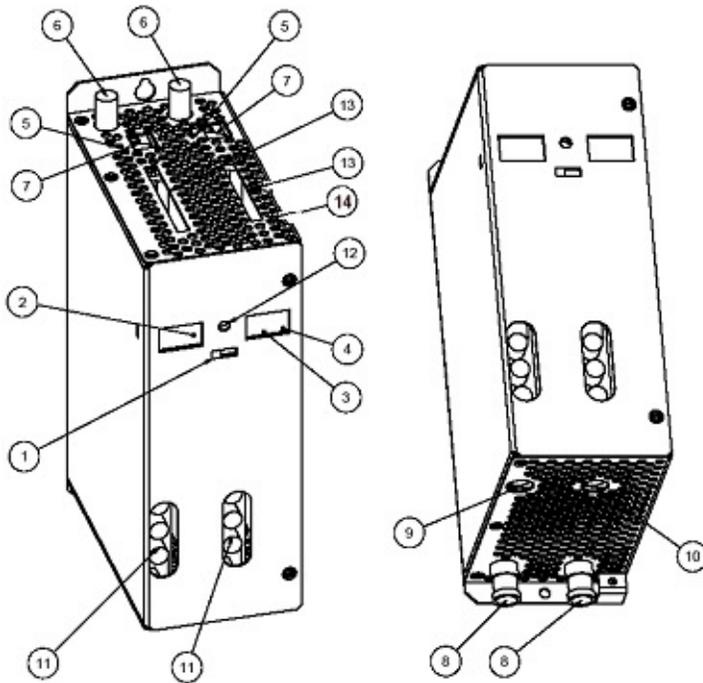


## 1. Purpose of use

RFT-855 is designed for a processing two DVB-T2 mux programs into two DVB-T mux.

## 2. Installation

The connections and indications are shown in Fig 1.



1. Control switch to program channel 1 (left) or channel 2 (right). The switch must be set to middle position when programming is ready

2. Channel number ( CCIR)

3. Cable-TV S channel indicator led

4. The signal led shows the output channel mode or that the unit is powered

5. Signal led indicates that receiver is locked to selected transport stream

6. ANT IN

7. USB ports are for possible software update

8. RF OUT + DC IN in RFT-800 frame installation

9. DC IN (only in stand-alone installation)

10. DC OUT for next RFT-831 unit (max. 4 units in chain in stand-alone installation)

11. VIDEO/AUDIO connectors for monitoring

12. IR detector

13. CAM slot

14. Bit rate indicator. Red = overload, Green = under maximum

RFT-855 can be mounted either to RFT-800 system (RFT-800 User Manual) or stand-alone. Do not cover the air passage holes.

Signals from antenna are fed to IEC-connectors at the top of unit.

When RFT-855 is mounted for RFT-800 frame, the power voltage is supplied through active output combiner (RFC-808 or RFC-816). When RFT-855 is mounted stand-alone, power supply unit (RFP-804 or RFP-808) must be mounted to the left side of RFT-845 due to the ventilation. DC connector is connected to left side of DC connector at the bottom of unit (9). You can loop-through DC from the right side DC connector (10) to next unit with the DC cable. Maximum four RFT-845 units in chain can be supplied with one power supply (RFP-804) in stand-alone installation (max. two units with RFP-802).

When RFT-845 is mounted for RFT-800 system, cable to network is connected to active output combiner (RFC-808 or RFC-816). When RFT-845 is mounted stand-alone, RF OUT (8) is connected to cable network via external RF combiner (RFZ-802).

VIDEO/AUDIO connectors (11) are for monitoring the unit while programming.

NOTE! CA module (13) for smart card must be installed and removed only when power is OFF.

### 3. Programming

The receivers and modulators are simple to program with the remote control unit (RCU-800). The main functions of RCU are shown in Fig 2.

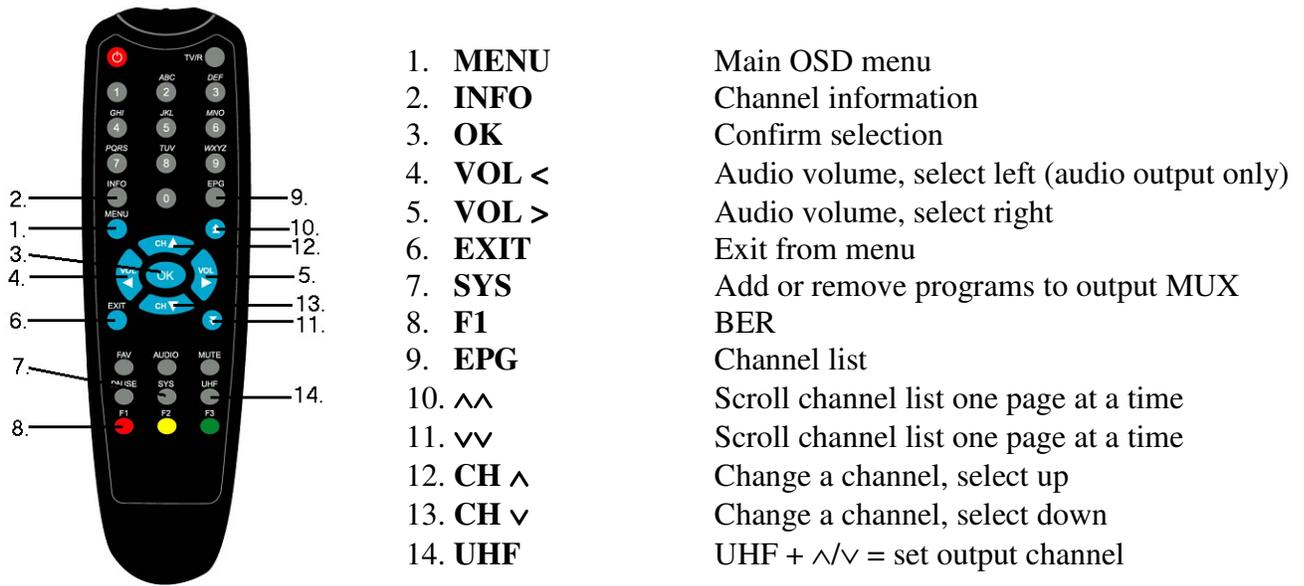


Fig 2.

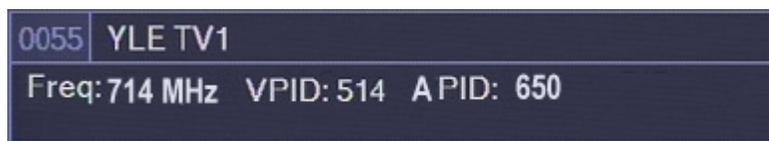
#### 3.1 Power-up



At power-up this welcome screen is displayed. Main SW and user interface SW version numbers plus unit serial number are shown.

When the unit is powered the display lights up showing selected output channels (Fig 1. no 2 ). The factory set channels are E40 and E42.

The display is switched off after 3 minutes. Two signal led indicate that the unit is powered. The display lights up again by pressing any button of remote controller unit.



Next program info for channel previously selected is displayed and the channel opened, if possible. Info shows program name, transponder frequency, data rate, FEC and channel video PID number.

Please note that opening a channel will take longer time when a conditional access module is inserted. It is recommended to use updated smart card. If the channel list is empty, welcome screen will remain displayed.



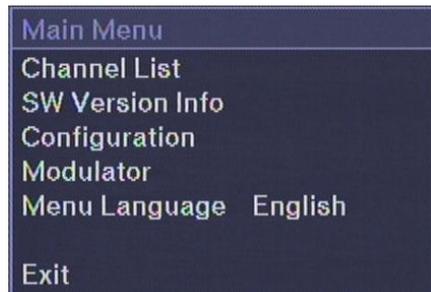
### 3.2 First time set-up

When using the unit for the first time, you must first connect video and audio connectors to monitor. After this you can continue set-up using on-screen menus.

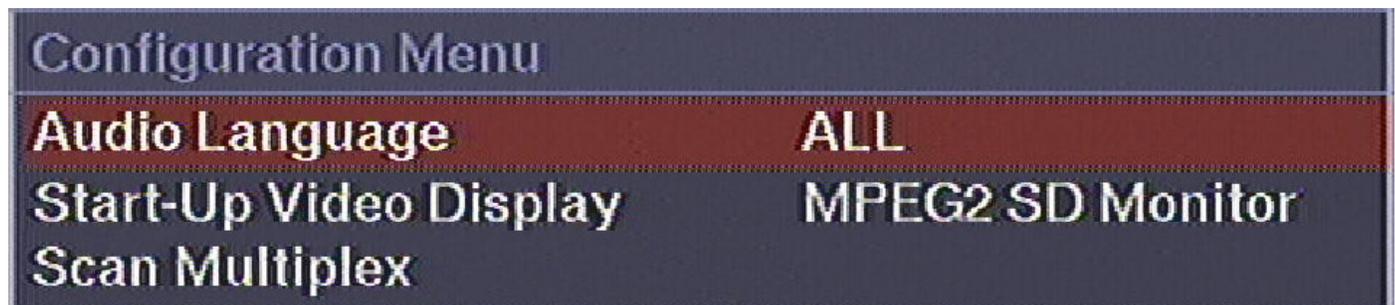
To control the unit first slide front panel switch to left or right position to control receiver 1 or 2 respectively. When programming is ready, the front panel switch must be slide to center position. This will prevent accidental changes to be made while controlling other units.

### 3.3 Set-up

To start set-up, press Menu key (Fig 2. no 1). Main Menu will be displayed.



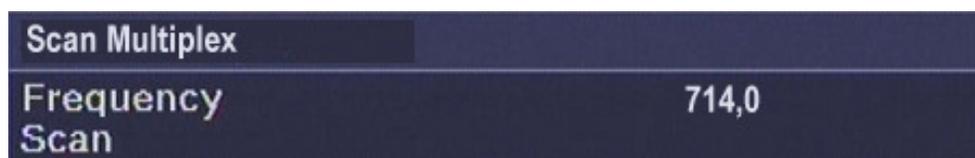
Select "Configuration".



Following settings can be selected:

- Audio Language (recommended ALL)
- NOTE! When MPEG-4 programs are received or scrambled channels are not descrambled (marked with +) at the headend select "Modulator Menu". Otherwise select "MPEG2 SD Monitor".Start-Up

Select "Scan Multiplex" and write multiplex frequency. Then select "Scan".



You can adjust frequency using numeric keys, left and right keys or double arrow keys.

When scanning is ready Channel List is shown.

To select a programs for outgoing COFDM stream press SYS key The meaning of symbols are + = FTA program selected, scrambled program selected but not opened at the headend, \$ = scrambled program selected and opened at the headend, - = program is not selected. To save and exit select + or \$ marked program and press OK key.

The default value is “+”.

Channel List		
0007	714MHz Radio-YLEMONDO	FTA +
0008	714MHz Radio-YLE Puhe	FTA +
0009	714MHz BC-TV	FTA +
0010	714MHz Data--Ohjelmistopäivitykset	FTA +
0001	714MHz YLE TV1	FTA +
0002	714MHz YLE TV2	FTA +
0003	714MHz YLE FST5	FTA +
0004	714MHz YLE Teema	FTA +
0005	714MHz SuomiTV	FTA +

The logical channel number (LCN) can be modified as following. Select the wanted program number (e.g. 0004) in Channel List menu. Then just press the wanted position number (e.g. 02). The set-top-box set this program to memory place no 2. NOTE! LCN setting works only in the set-top-boxes which support LCN function.

The LCN selection can be canceled by typing 00.

NOTE! After selecting programs go to “Modulator” menu and press OK to check the status of bit rate. “Fill” beam shows how many percentage of the maximum stream is used.



### 3.4 Other functions

In main menu, select “SW Version Info” and press OK to display receiver and user interface version numbers plus unit serial number info.

Menu Language = menu language.

### 3.5 Modulator set-up

To adjust the parameters of outgoing DVB-T stream and other modulator options, select “Modulator” and press OK.

All selectable options of modulator menu are shown in below figure.

Modulator Menu	
Output Channel (CCIR)	22
DVB-T Constellation	QPSK QAM16 QAM64
DVB-T FEC Coderate	1/2 2/3 3/4 5/6 7/8
DVB-T Bandwidth	7 MHz 8 MHz
Output Level	5
Fine Tune	0.00

You can select output channel using left and right arrow keys. The channel number will be displayed simultaneously on front panel display. The selectable channels are S02 - S10, 5 - 12, S11 - S41 and 21 – 69 (CCIR).

To adjust modulator output attenuation use left and right arrow keys. You can fine tune output frequency when using different channel grid than CCIR. Adjustment is done using left and right arrow keys in steps of 1 MHz. Adjustment range is  $\pm 4$  MHz. You can monitor the adjusted frequency in parenthesis on the same line.

Select DVB-T Constellation QAM 64.

Select appropriate FEC.

NOTE! If outgoing bitrate is less than 50% of maximum, select bigger FEC value (e.g. 1/2 or 2/3) to reach bigger bit rate. The optimum bit rate is 80% from maximum.

The appropriate bandwidth 7 or 8 MHz is selected automatically according to CCIR channel table, when output channel is changed.

Select output level. The number indicates gain (0= minimum level and 20 = maximum level).

Press EXIT key to exit from menu. The settings you made will be saved.

When programming is ready, the front panel switch must be slide to center position. This will prevent accidental changes to be made while controlling other units. The display, except two led, are switched off in 6 minutes after programming is finished.

## Technical specifications

### COFDM (DVB-T/DVB-T2)/QAM (DVB-C) INPUT

Number of channels	2
Tuners	2
Input frequency range	177,5 - 858 MHz
Input level	45 ... 85 dBuV
Bandwidth	7 MHz or 8 MHz
FEC decoder	Automatic
CI slot	2

### QAM OUTPUT

Modulation	QAM 32, 64, 128, 256
Output frequency range	114 MHz - 858 MHz
Symbol rate	1-8 Msymb/s
Output level	85 - 105 dBuV
Data interface	2* USB 1
Input connectors	F-female 75 ohm
Output connectors	F-male 75 ohm
Power consumption	16VDC/1,2A
Dimensions	W*H*D 72mm*218mm*129mm
Mounting	RFT-800 system or stand alone





This symbol on the product or on its packing means that within the European Union the product must be taken to separate collection at the product-end-of life.

Do not dispose of these products as unsorted municipal waste.

For more information about where you can drop off your waste equipment for recycling, please contact your local city office, your house disposal service or the shop where you purchased the product.