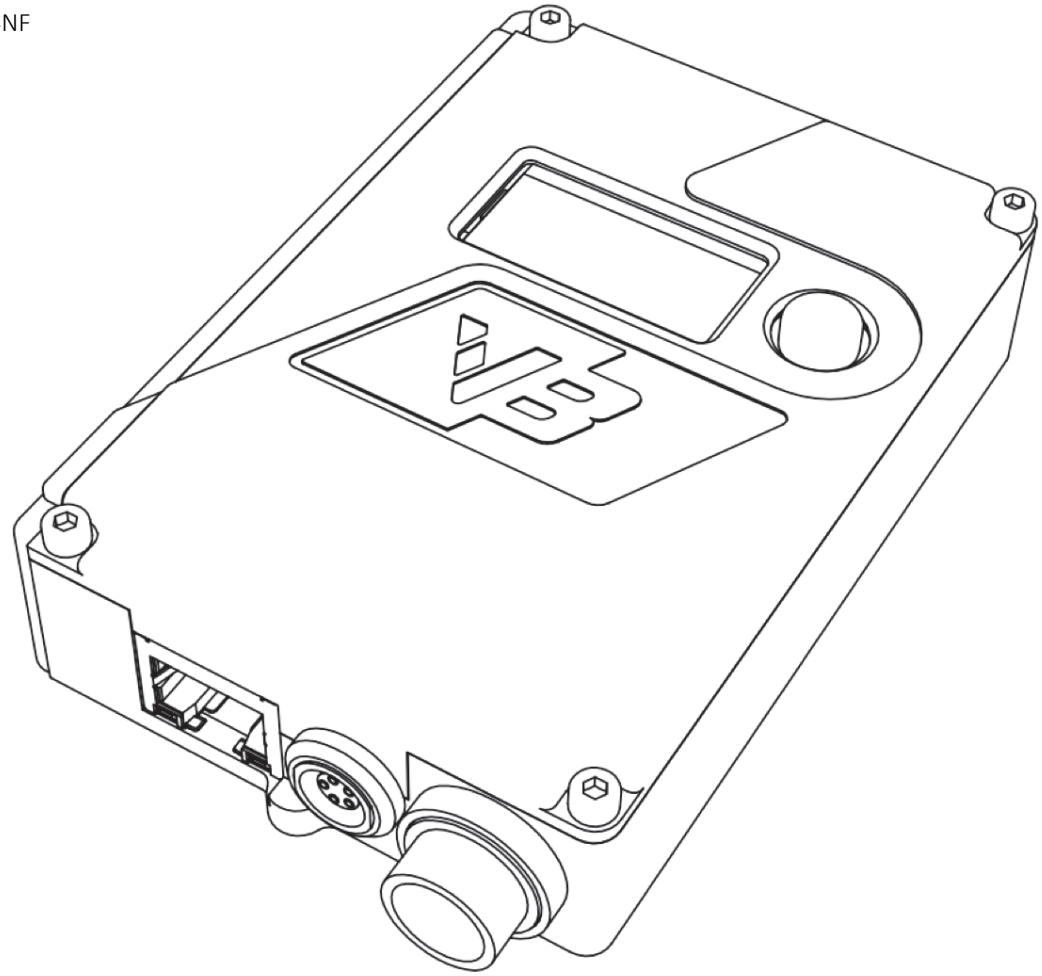
RXSM-E User Manual

Revision 4 – 05.06.23

Videosys Broadcast Ltd
Foss House
Wallage Lane
Rowfant
West Sussex
RH10 4NF
UK



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Camera Control Data Receiver

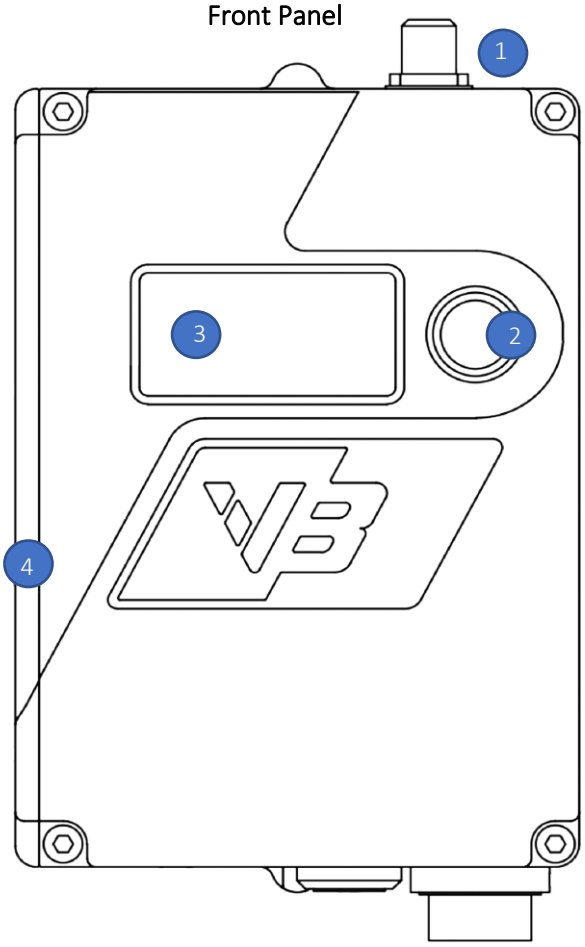
Getting Started

We hope that you will find the necessary information within this manual and our specific quick setup guides, if however, you require additional support please don't hesitate to contact your local distributor.

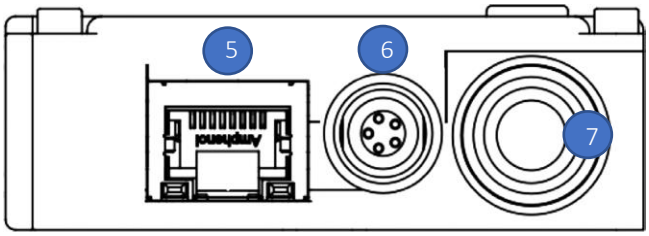
Introduction

The Videosys camera control system allows replacement of the cables between Remote Control Panels (RCP), Camera Control Units and Cameras with a robust broadcast quality wireless link.
The Videosys camera control solution consists of three distinct components; an 'IDU' (Indoor Unit), 'ODU' (Outdoor Unit) and an 'RX' (Receiver). Multiples of these components can be used to best fit the operator's requirements, for example multiple IDUs can be connected to allow for many camera control paths over one ODU. Multiple ODUs can be used to increase RF coverage, and each camera to be controlled requires an RX. The RXSM-E is a specific variation of data receiver that is more compact than a standard RX, or smaller (SM), and provides Ethernet support, (E).

Front Panel



Bottom Connectors



1. Receive antenna connector (SMA Female)
2. Multi-directional navigation button
3. OLED Display
4. Peripheral connector (Behind dust cover)
5. Ethernet Connector (RJ45)
6. Tally Output Connector (5 Pin LEMO)
7. Generic Camera Connectors

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Principal of Operation

The Videosys RXSM-E is a more than just a data receiver, it emulates a camera manufacturers RCP, allowing for a light weight communication protocol optimised for transmission over RF. Two fundamentally different operating modes can be selected; Uni-directional camera control and Bi-directional camera control.

In Uni-directional mode, camera control is achieved with no return data path, this provides the most robust camera control link. However, Uni- directional control is limited the number of features that we have specifically supported.

Bi-directional control utilises the return data path, typically provided by a COFDM video transmitter, it allows for the full functionality of a manufacturers RCP. Bi-directional however requires both RF links to be fully established for successful initialisation and control. The synchronising process occurs during the system initialisation to inform the RCP of the cameras features this can lead to slightly slower initial 'wake up' times than with unidirectional control. Wake up time is software/camera/panel and manufacturer dependant.

The most basic Uni-directional set up is shown in Fig 1. Where a single ODU is sending control data to be received by a single RXSM-E.

Fig 1. A simple Uni-directional camera control setup

The camera control RXSM-E requires three things, a source of power, a means of communicating with a camera and an antenna with which to receive data from the rest of a camera control system. Power can be supplied via the generic camera connector, or the tally connector.

Connecting the Camera

There are two ways an RXSM-E can establish connection with a camera. The first is via physical connection using a supplied 30cm serial data cable. This serial Cam-End cable is connected to the 10 pin Hirose connector on the base of the RXSM-E and then to the Remote connector on the camera. These cables are supplied according to the license options purchased by the customer. Arri is the only supported manufacturer which does not use a Cam-end cable.

The second connection type is via IP. Establishing a connection this way requires a camera with IP remote control support and some basic networking setup. For some manufacturers simply ensuring your RXSM-E has a unique static IP adress in the same range as the camera will be enough to establish a connection. A common IP range might be 192.168.1.xxx. Where xxx is changed between 001 and 254 to create a unique address for each device. However other manufacturers, such as Arri and Panasonic, there is a slightly more intricate setup required. Therefore, individual supporting documents for these have been made and uploaded to the Videosys website under 'Support > Software updates > Videosys products > **Camera control** > Guides'.

A list of supported manufacturers in both serial and IP are regularly be updated within the '**Camera control**' location underlined above.

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Navigating Menus

The Up, Down, Left, Right and Enter buttons can be used to navigate through the menus. Menus are organised into lists; these can be scrolled through with the Up and Down buttons. To enter the selected submenu or option, press the Right button. Left will return to the previous menu. The centre-click Enter button is used to set or save options such as frequency or IP addresses.
Within a text edit screen, the Left and Right buttons can be used to select the character being edited and the Up and Down buttons to change that character. To save and return press the Enter button, to discard and return use the Left button to scroll back to the first character and then press Left once more to return.

Status Screens

The first screen that will be displayed to the user is the status screen (Fig 2), this is designed to give a quick overview of the units configuration and operating status.

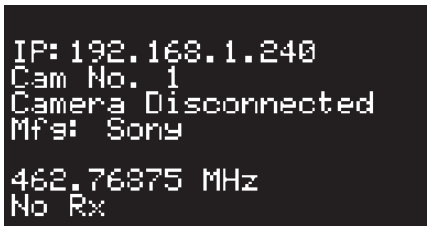

Fig 2. The RXSM-E status screen

Menu Structure

From the main menu, you are presented with 5 selectable options:

- Network
- Camera Manufacturer
- Radio
- System
- Camera Number

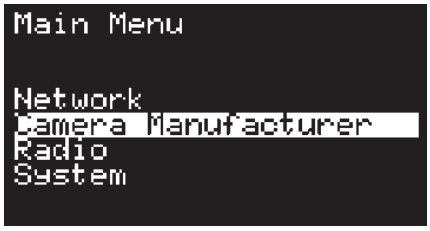

Fig 3. Main Menu.

Network

This menu allows changes to be made to the IP Address, IDT Address, Panasonic IP address, Netmask and Net Gateway. Using the navigation button to set the IP values to suit the network.

Fig 4. Network Menu.

When changes are applied return to the Network Menu and back to the Main Menu where the RXSM-E will restart and set the Network Change(s).

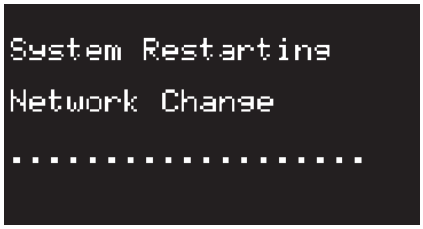

Fig 5. Network Change.

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Camera Manufacturer

Here, the unit allows for the Camera Manufacturer to be set according to the camera used with the RXSM-E.
For the list of supported Camera Manufacturers; consult the 'Supported Manufacturers list' on the Videosys website under 'Support > Software updates > Videosys products > Camera control'. Using the Multi-directional navigation button, select the manufacturer that matches the camera and press Enter. Progression 'dots' will be displayed on the screen (Fig 6) and will force the RXSM-E to Restart ready to operate with the camera.

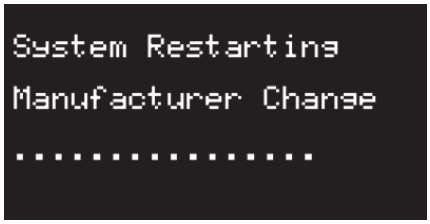


Fig 6. Manufacturer Change

Radio

The Radio Functions Menu (Fig 7) allows users to setup the frequency, or frequencies, an RXSM-E is tuned to receive.

In the 'Multi Zone Menu', under 'Multi Zone Mode' (Fig 8), users can select between 'Primary Frequency Only' or 'Use Freq List'.

Using 'Primary Frequency Only' will limit the receiver to one specific frequency. This frequency can be selected back in the radio functions menu, as shown (Fig 8). However, if a Multiple Zone ODU setup is in operation, the 'Multi Zone AF List' should be used to accommodate this. A single RXSM-E can seek up to eight different Frequencies in this configuration.

Fig 7.

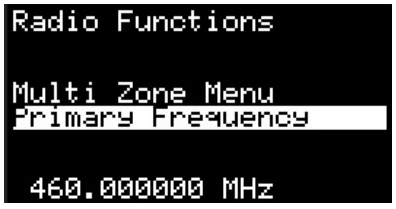
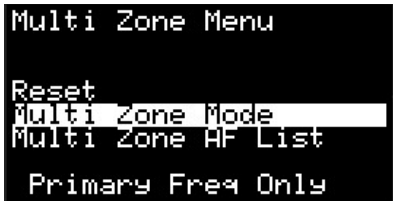
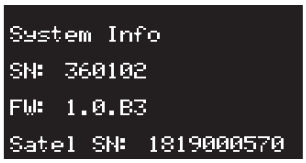


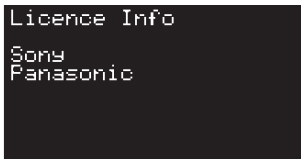
Fig 8.

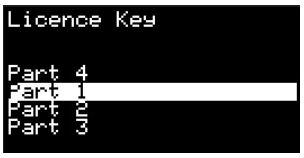


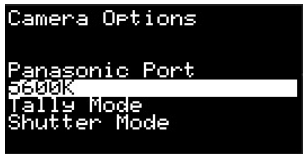
System

This screen consists of five options that display various information about the RXSM-E. Navigating Up, Down and Enter allows the user to view and display detailed information.



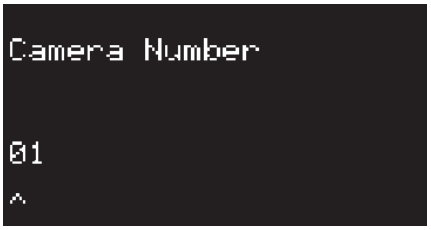






Camera Number

Allows for a camera number to be set between 01 to 96. This must align with the camera number set on an IDU channel in order to establish communication.



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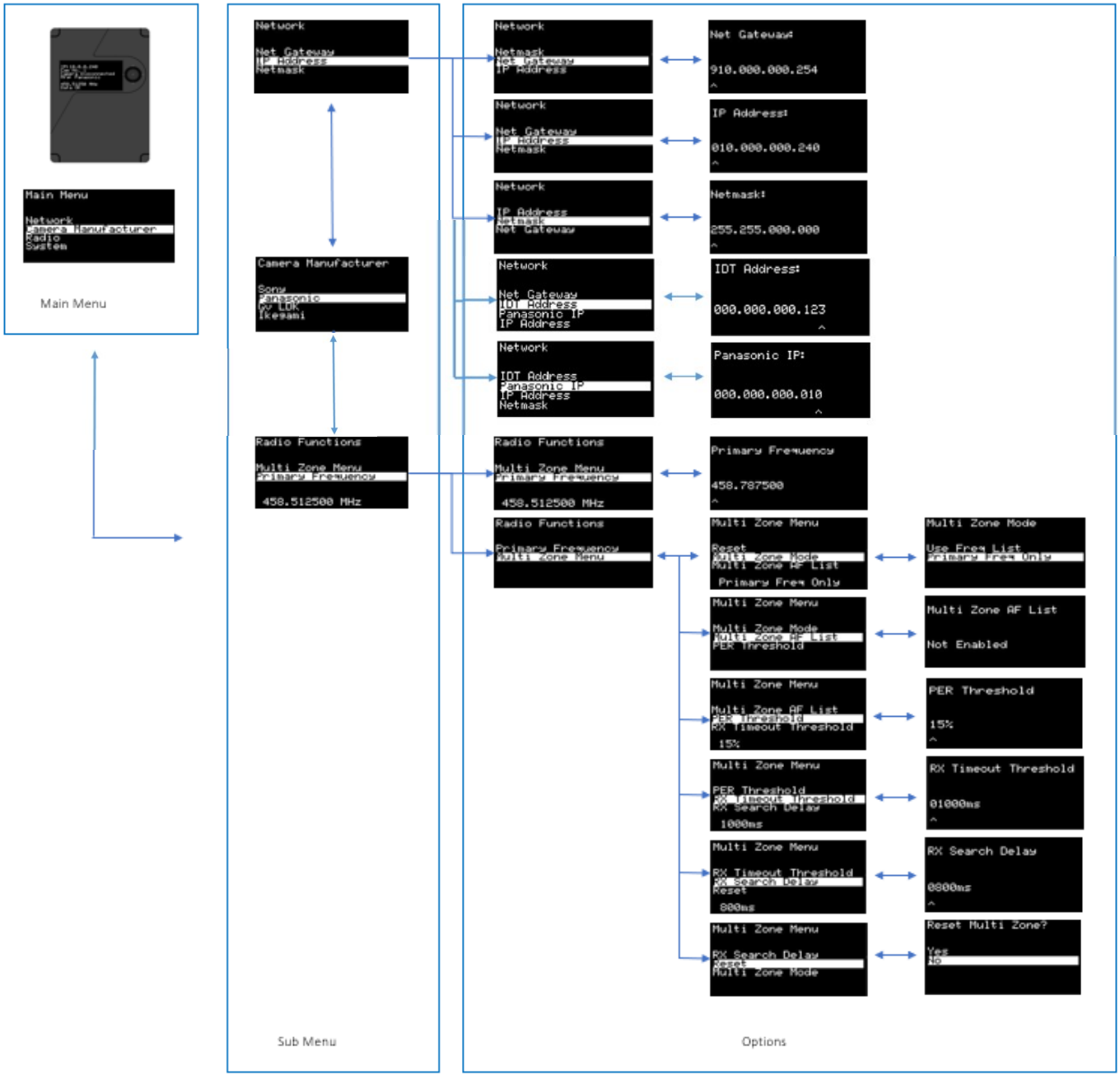
Menu Pathways

Network, Camera Manufacturer, Radio Functions



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System, Camera Number

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Web Interface

The RX has a built-in web-server and serves a range of useful control pages, if there is a device with a web browser on the same network, this Interface allows for changes to the unit configuration, network settings, software updates, and access to the front panel where changes can be made as if on the actual RX.

Accessing the Web Interface

To access the Web Interface, firstly power up the RXSM-E and connect a PC or laptop up to the same IP network as the RX. By default, the RX is set to 192.168.1.240. Open a web browser and type in the IP address of the RXSM-E, an example can be seen in Fig 9 where. Here IP address is 192.168.1.250.

Navigating the Web Interface

Once the Web interface is booted up there are two Areas of control to dive into, 'Configuration' or 'Advanced'.

The configuration tab (Fig 9) displays a detailed view of the units current settings and allows for quick changes to be made. After the overall configuration has been adjusted to suit, the 'Save Settings' button can be pressed, this will cause a short device reboot. Once rebooted, any settings that were changed will now update and be active on the Receiver.

From the Configuration page (Fig 9) there is also the option to 'Load User Preset'. This User Preset is adjusted in the 'Advanced' area of the web-page (Fig 10).

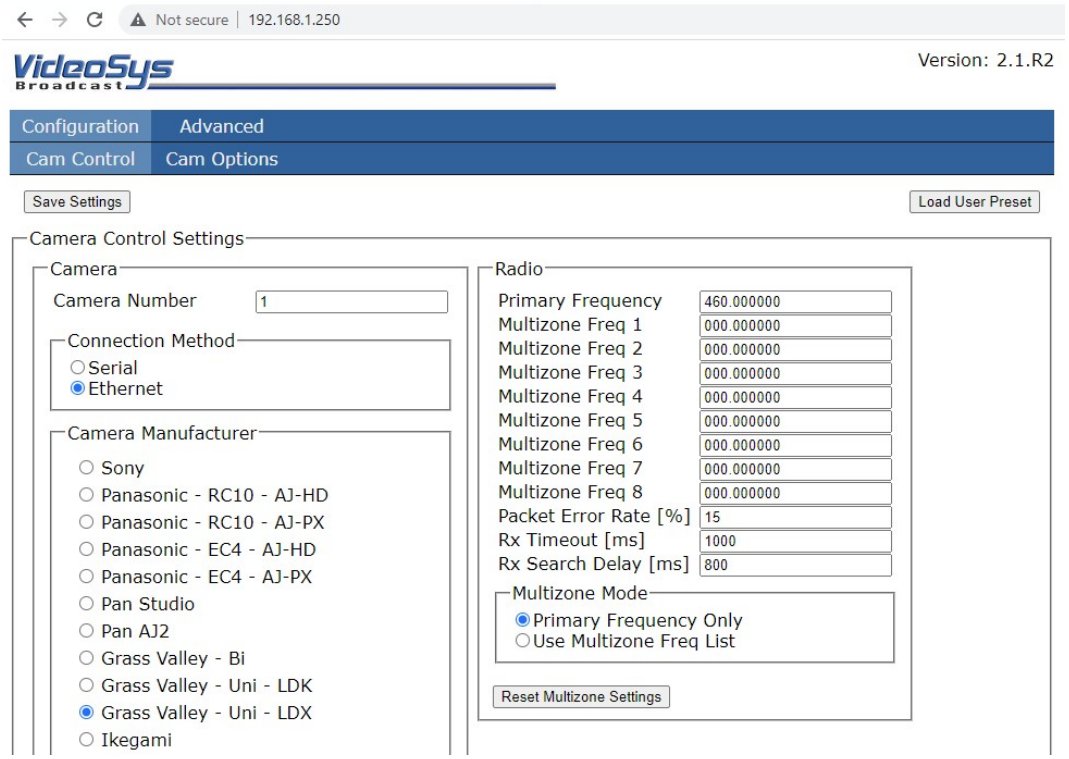

Fig 9. Configuration page.

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Navigating the Web Interface

The User Preset page is used to configure and save desired setups for anytime use.

Here settings in the 'Cam Control' and 'Cam Options' pages directly mirror those in the Configuration page. However, this page cannot be used to effect the live configuration directly. As previously mentioned, to bring these through as the live configuration, users will need to go back into the Configuration Tab and select 'Load User Preset'.

The biggest benefit of the User Preset page is the ability to store a limitless number of different setups onto your PC or USB drive as data files. This can be done on the 'File' tab (Fig 10).

To download the current user preset as a file select 'Save Preset File'. To upload a previously saved configuration to the Web-Page select the 'Choose File' button and access the file within your documents. Then, to load this setup as the User preset, select 'Load Preset File'.

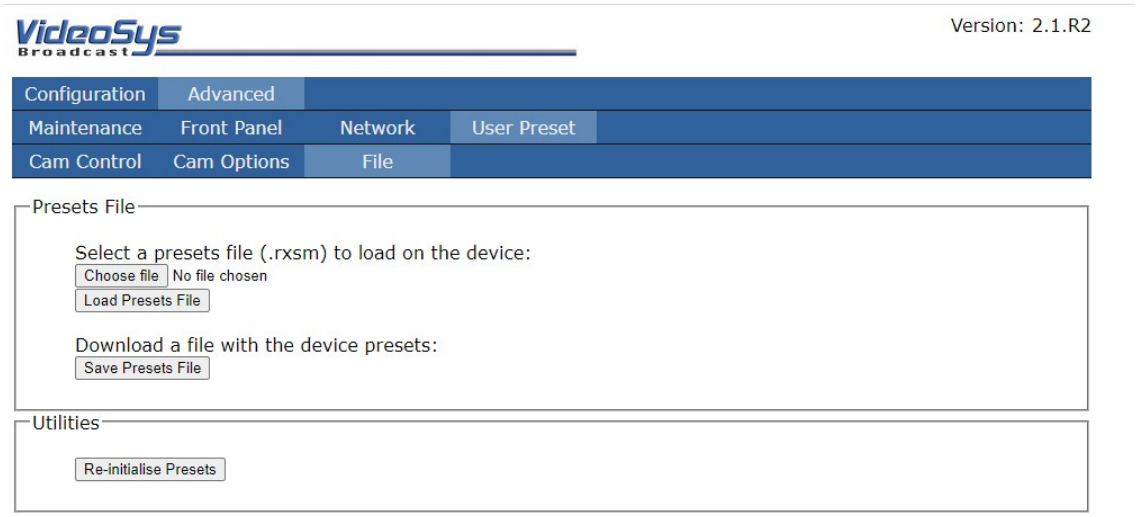

Fig 10 User preset page.

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Unit Updates

Also within the advanced section of the Web interface is the maintenance tab (Fig 11). From here the Software Update section can be found. Latest updates for each unit can be downloaded from the Videosys website.

Once downloaded, click on the 'Choose File' button. After the file has been selected click on 'Perform Upgrade'. The upgrade should only take a few seconds and will restart the RX once complete.
NOTE: It is important that the RXSM-E does not lose power whilst the upgrade is taking place.

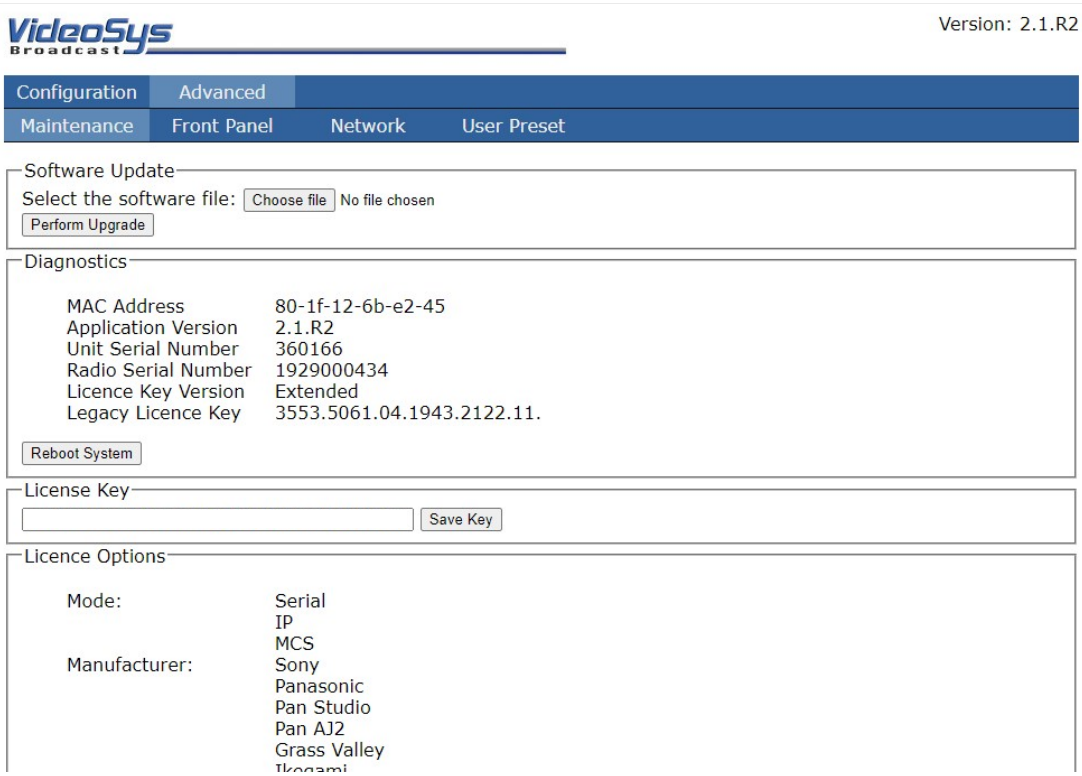

Fig 11. Updating the RX.

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Specifications

Power:	DC 9-17v (Supplied through a camera cable or Lemo).
Connectors:	Generic Connector for all Manufacturer. Hirose HR10A-10P (73). FGG.0B.305 LEMO External Tally Output. SMA RF antenna connector. Ethernet port - RJ45.
Frequency:	403 -473 MHz.
Interface:	OLED screen with function buttons.
Occupied Bandwidth:	12.5 kHz
Sensitivity:	114 dBm

Dimensions

Length: 92mm
Width: 60mm
Depth: 20mm
Weight: 0.7kg

License Options

- Sony
- Grass Valley
- Hitachi
- Ikegami
- Panasonic – Camcorders using EC4 or RC10 controllers
- Panasonic Studio – Studio range of cameras
- Arri
- Dreamchip
- Sony VISCA

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