

Product Code: TX160-CC

Revision: 01

**VideoSys**  
Broadcast

# Transmitter - TX160-CC

## Product Manual



T: +44 (0)1293 541 200

E: sales@videosys.tv

W: videosys.tv

# TABLE OF CONTENTS

## 01

Product Data Sheet

---

## 02

Connector Guide

---

## 03

Menu Structure Document

---

## 04

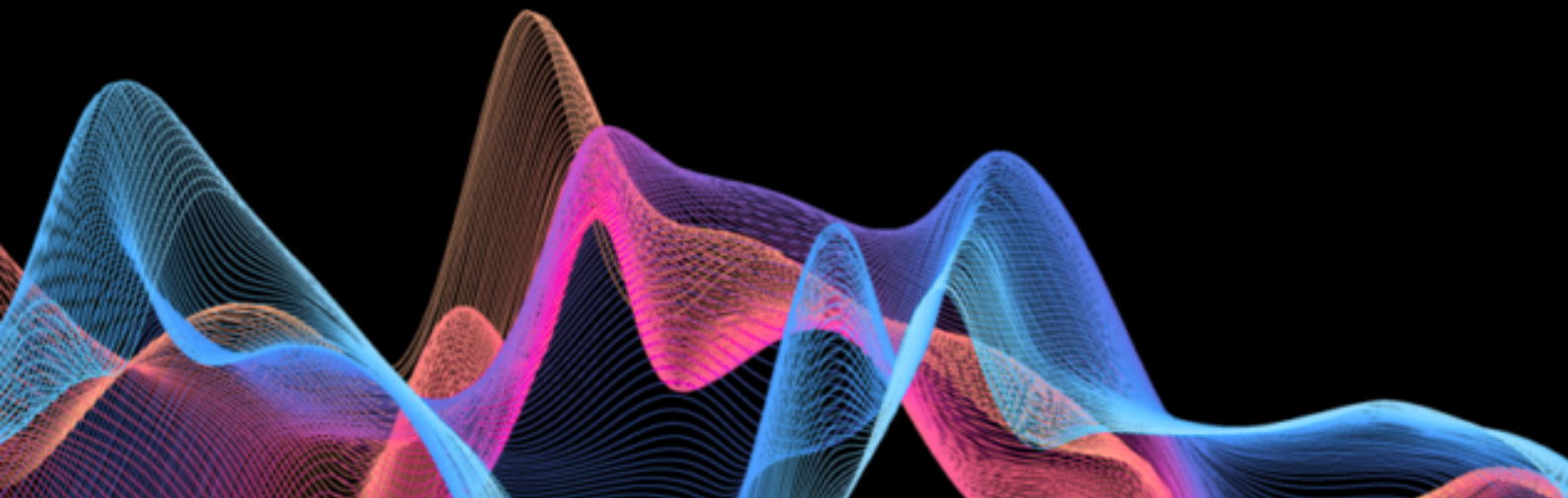
Web Pages

---

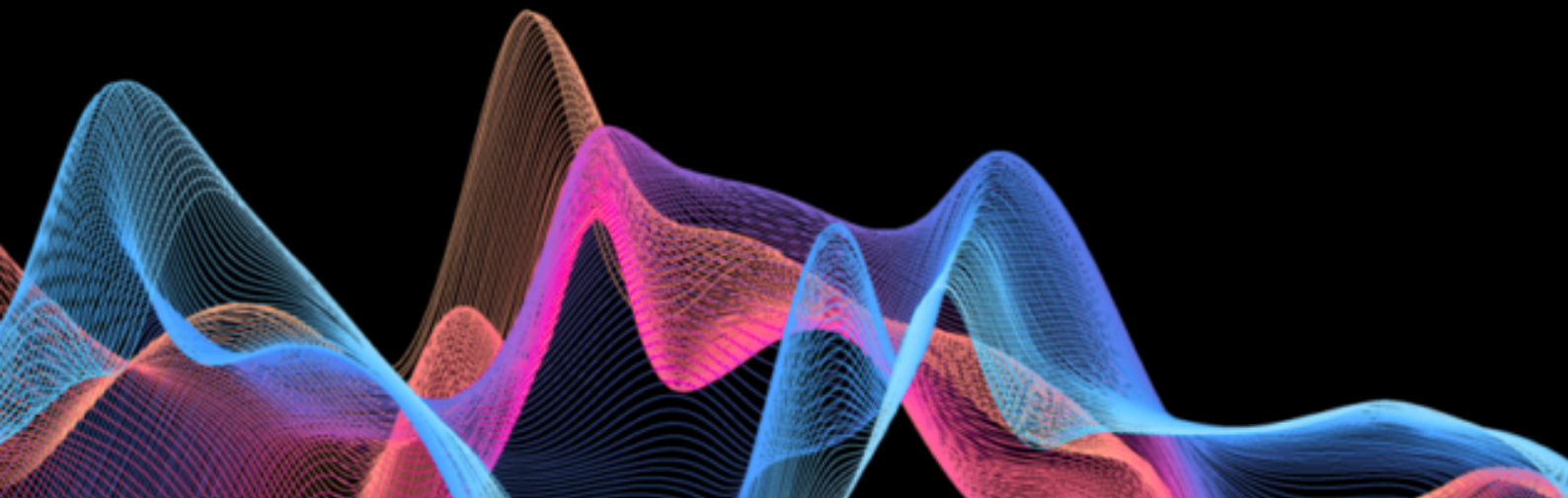
## 05

Transmission Guide

---



# PRODUCT DATA SHEET



## TX 160CC

Our integrated transmitter combines a high quality HEVC encoder and a DVB-T/UMVL COFDM modulator with our proprietary, industry-leading camera control to create a powerful unit suitable for demanding live broadcast environments. The transmitter comes with a single-link 12G SDI video input that can handle all video formats up to UHD at 60 frames per second, and RF parameters can be configured remotely via a base station without interrupting the production flow. The 10 bit 4:2:2 H.265 encoding is suitable for HDR sources, and when combined with one of our HEVC decoders (e.g. DEC150) it can operate at an ultra-low latency of down to 40 ms (frame rate dependant). The integrated camera control allows for unidirectional and bidirectional camera control, it can connect to both serial and ethernet cameras (ask for more compatibility information), and offers unparalleled robustness that is powered by our proprietary bidirectional control algorithm.

### Key Features:

- 100mW COFDM Transmitter (DVB-T or UMVL)
- Remote Transmitter Control over UHF
- Supports sources up to UHD at 60 fps
- HEVC 10 bit 4:2:2 encoding (compatible with HD HDR sources)
- Ancillary Metadata Encoding (including Timecode and Rec Flag)
- Analogue audio input & audio encoding of up to 8 channels.
- Build-in camera control over UHF for all main manufacturers
- Sturdy Machined Aluminium Enclosure & Accessories
- Various Battery Plate options (V-mount, Anton Bauer)



# DATA SHEET

## TX160

### TRANSMITTER

**VideoSys**  
Broadcast

## Technical Specification:

### Connectors

RF Output	N-type (f) for Video Transmitter Antenna
UHF Input	SMA (f) for Camera Control Receiver Antenna
Video Input	12G BNC
Analogue Audio Input	5-way 0B Lemo
Camera Control	10-way Hirose
Tally Output	5-way 0B Lemo
Power Input	4-way 0B Lemo
Ethernet Control	RJ14 and 4-way 0B Lemo

### Video & Audio

Analogue Audio Input 1 pair line/mic level at max 24dBu (balanced)

Phantom Power	48V
Digital Audio Input	SDI de-embedding
Coding Modes	Up to 8 channels (4 pairs) MPEG-1 Layer 1 (licenced feature), MPEG-2 Layer 2, AAC-LC, Linear Audio
Video Formats	4K UHD. 4:2:2/4:2:0, 8/10-bit 2160p / 23.98 / 24 / 25 / 29.97 / 30 / 50 / 59.94 / 60 Full HD. 4:2:2/4:2:0, 8/10-bit 720p / 50 / 59.94 / 60 1080i / 50 / 59.94 / 60 1080p / 23.98 / 24 / 25 / 29.97 / 30 / 50 / 59.94 / 60 1080psf / 23.98 / 24 / 25 / 29.97 / 30 (licenced feature) SD 4.2.2/4.2.0 480i / 29.9
Video Encoders	MPEG2, H.264, H.265 (HEVC)

### RF Specifications

Camera Control	403-473 MHz
DVB-T Bandwidth	6, 7, 8 MHz
DVB-T FEC	1/2, 2/3, 3/4, 5/6, 7/8
DVB-T Constellation	QPSK, 16QAM, 64QAM
DVB-T Guard Interval	1/4, 1/8, 1/16, 1/32
Other Modulations	UMVL, Dual Pedestal
Power Output	10, 50, 100 mW
Frequency Ranges	1.0 - 1.5 GHz 2.0 - 2.9 GHz 3.0 - 3.5 GHz 5.5 - 6.0 GHz

### General Specifications:

Input Voltage	7 – 35 V (reverse polarity protected)
Power Consumption	13 W
Dimensions	170mm(L) X 106mm(W) X 83mm(H)
Weight	0.96kg

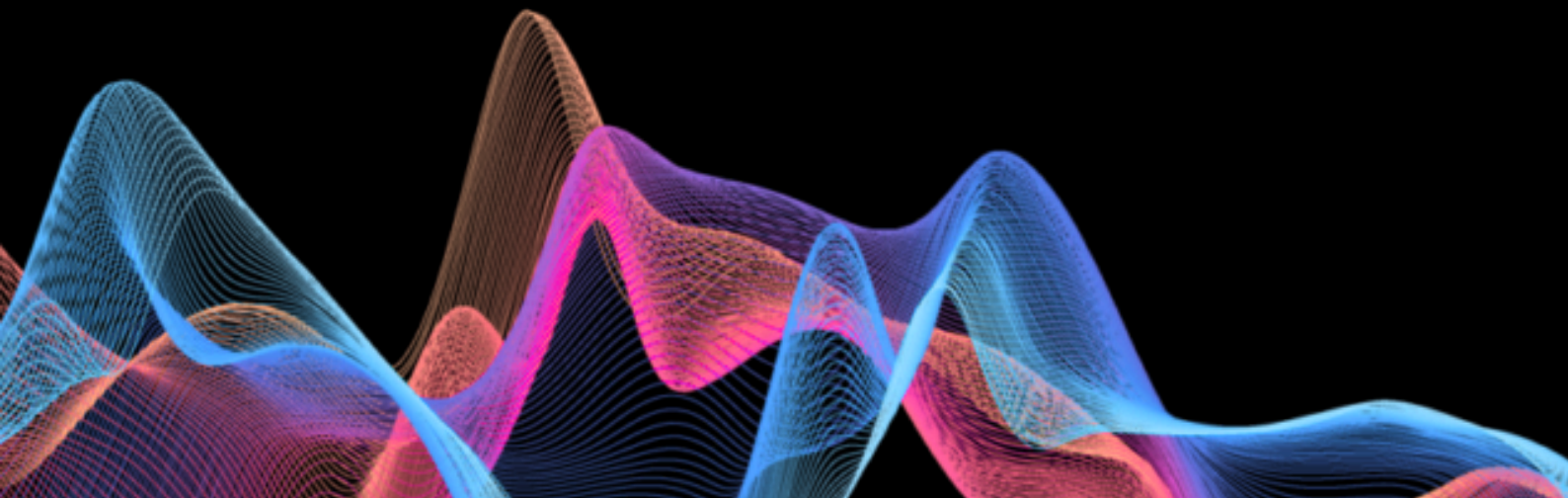
### Available accessories & add-ons (optional)

Anton Bauer Battery Plates  
Licence – 4K Encoding

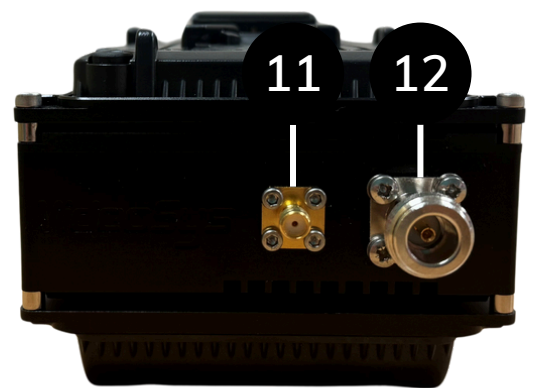
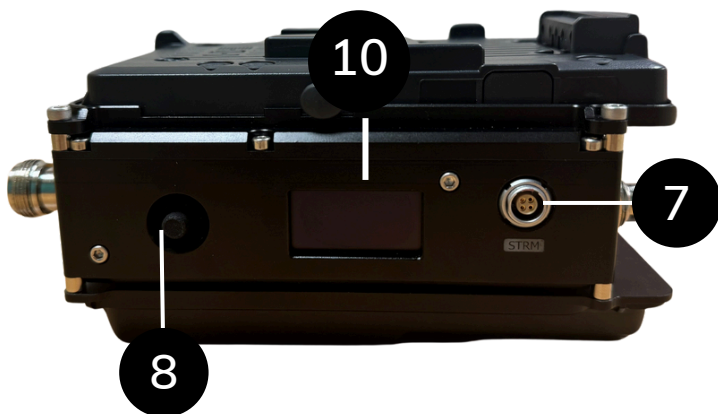
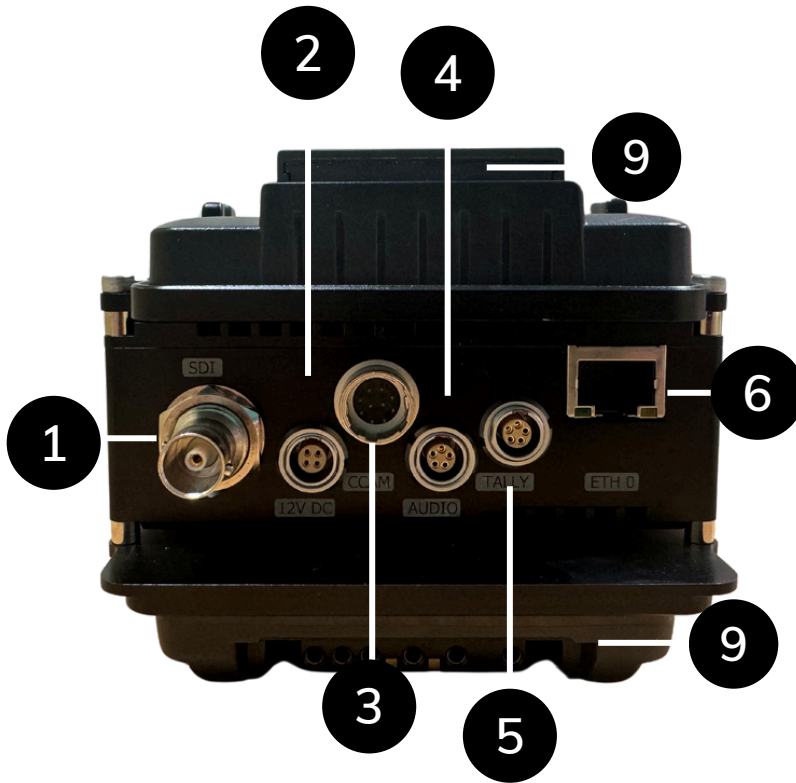
T: +44 (0)1293 541 200  
E: sales@videosys.tv  
W: videosys.tv

The information contained in this document is the property of VideoSys Broadcast Ltd. This document and the information contained herein is provided for evaluation purposes only and is subject to change without notice. VideoSys Broadcast Ltd assumes no responsibility for errors that might appear in this document and gives no representations or warranties as to the accuracy of the information contained herein, including but not limited to the suitability and performances of the product or its intended application.

# CONNECTOR GUIDE



BROADCAST SYSTEM - TX160-CC



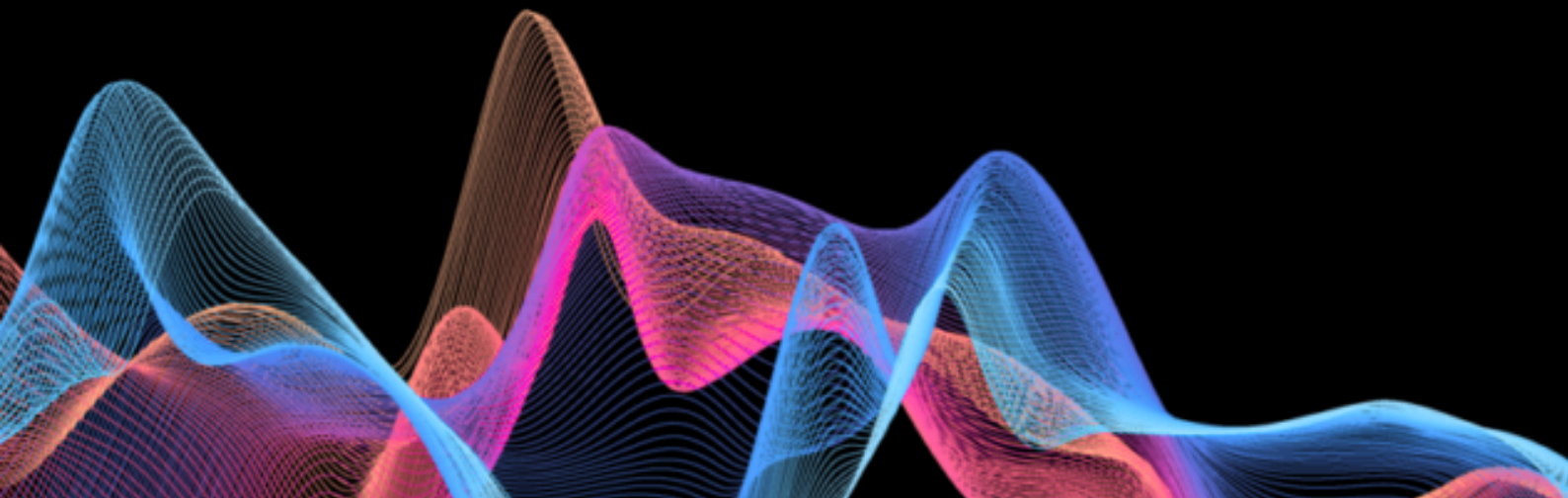
**BROADCAST SYSTEM - TX160-CC**

No	Item	Used for
1	BNC x 1 labelled SDI	SDI In Video Input (12G BNC)
2	Lemo 4-way jack (sockets) labelled 12V DC	Power connector
3	Hirose 10-way jack (pins) x 1 labelled CCAM	Camera Control. Data and power to the camera.
4	Lemo 5-way jack (sockets) x 1 labelled AUDIO	Balanced audio connector
5	Lemo 5-way jack (sockets) x 1 labelled Tally	Tally Output (and via camera's protocol when supported)
6	RJ45 x 1 labelled ETH 0	Ethernet Connector for Transmitter web GUI.
7	Lemo 4-way jack (sockets) x 1 labelled STRM	Ethernet Connector for Encoder web GUI access
8	Navigation Switch x 1	The Up, Down, Left, Right, Enter and Cancel the Navigation Switch used to navigate through the menus
9	Battery Plates	V-Mount Battery Plates OR Anton Bauer Battery Plates
10	Display Screen	User control interface

**BROADCAST SYSTEM - TX160-CC**

No	Item	Used for
11	N-Type RF jack (socket)	RF power out for Video Transmitter Antenna
12	SMA jack (socket)	Camera Control Telemetry Receiver Antenna (403-474MHz)

# MENU STRUCTURE



## TX160 Menu Structure

### Main Menu

**Status Page:**

**Transmitter Main Menu**

**Menus:**

**Transmitter Menu**

**Camera Control Menu**



## Transmitter Menu Structure

Transmitter Menu



COFDM Unit



RF



DVB-T



Video

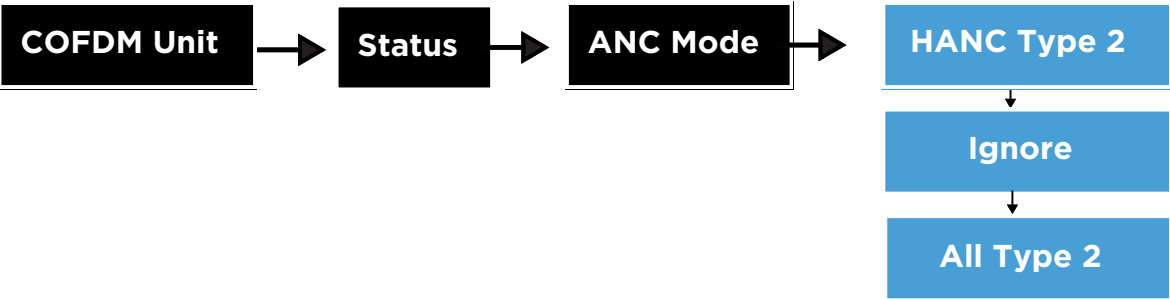
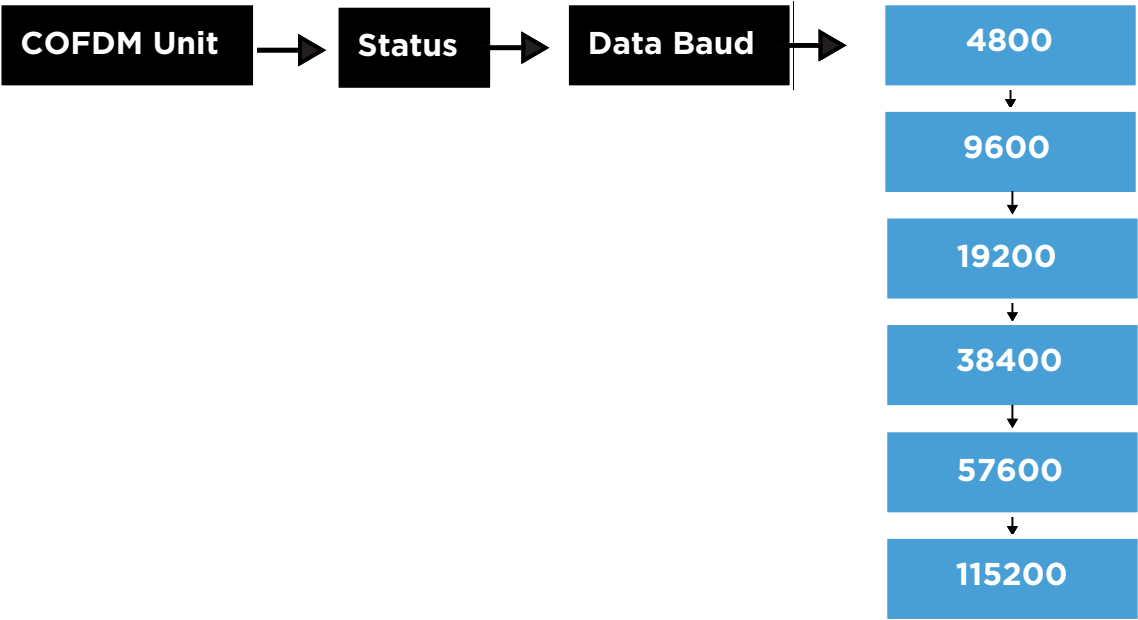


Audio

# Transmitter Menu Structure

## COFDM Unit Menu Structure

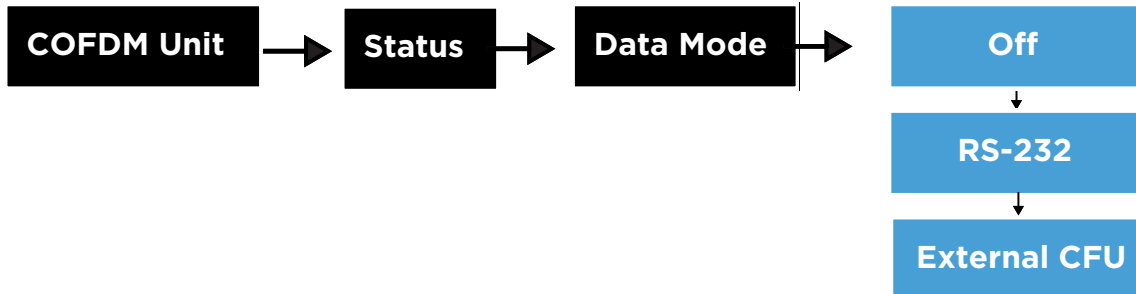
### Status



## Transmitter Menu Structure

### COFDM Unit Menu Structure

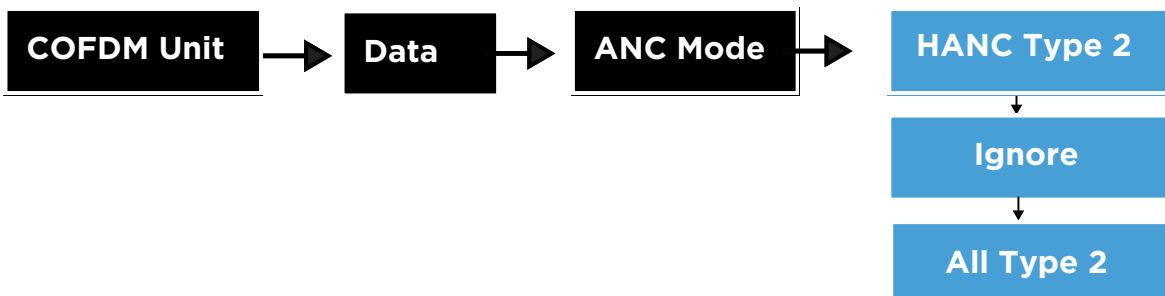
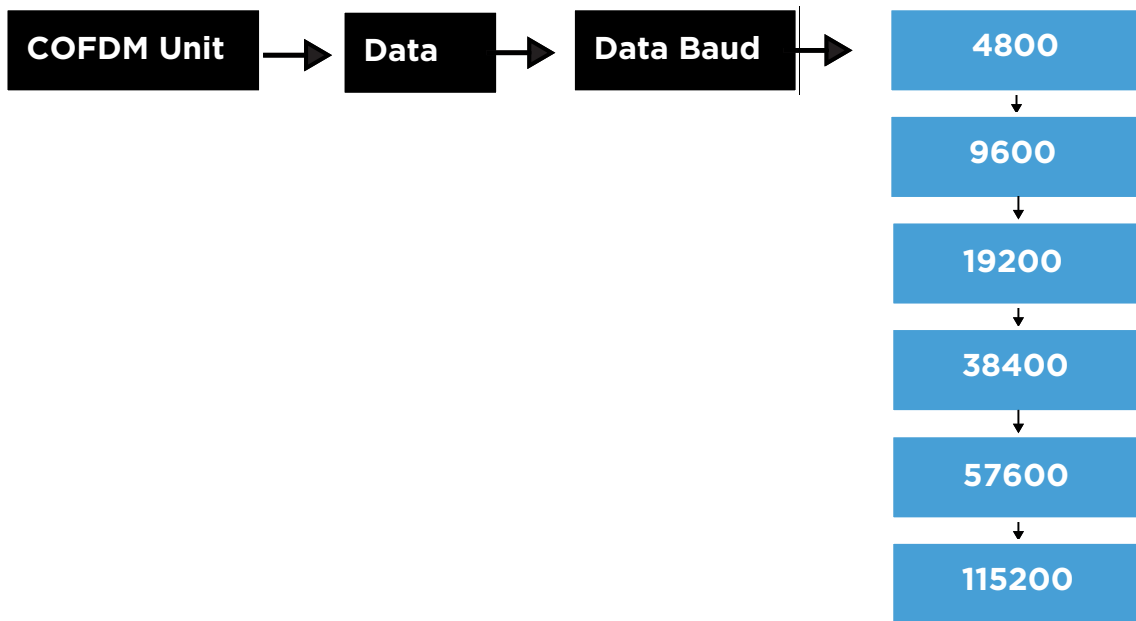
#### Status



## Transmitter Menu Structure

### COFDM Unit Menu Structure

#### Data



## Transmitter Menu Structure

### COFDM Unit Menu Structure

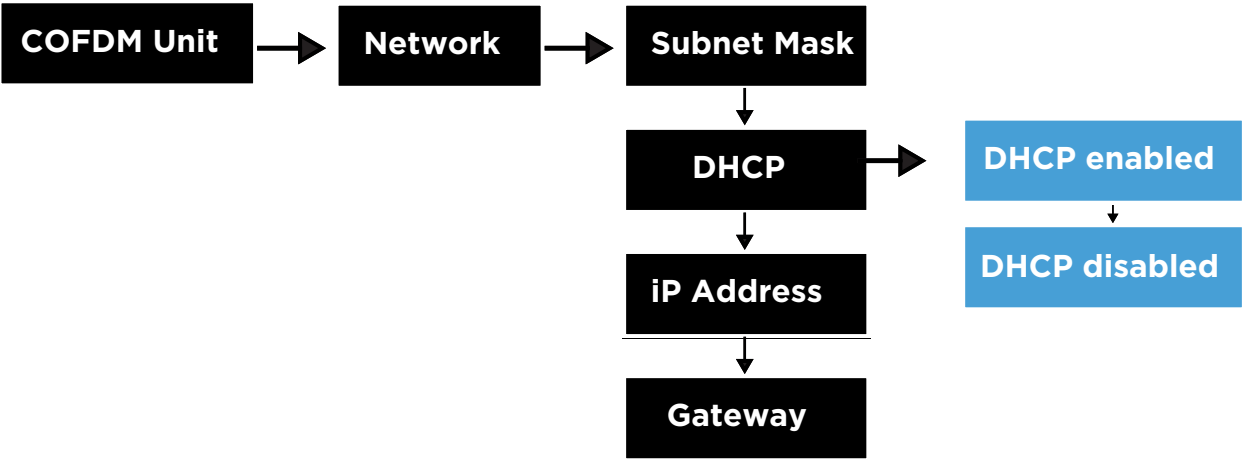
Data



# Transmitter Menu Structure

## COFDM Unit Menu Structure

### Network



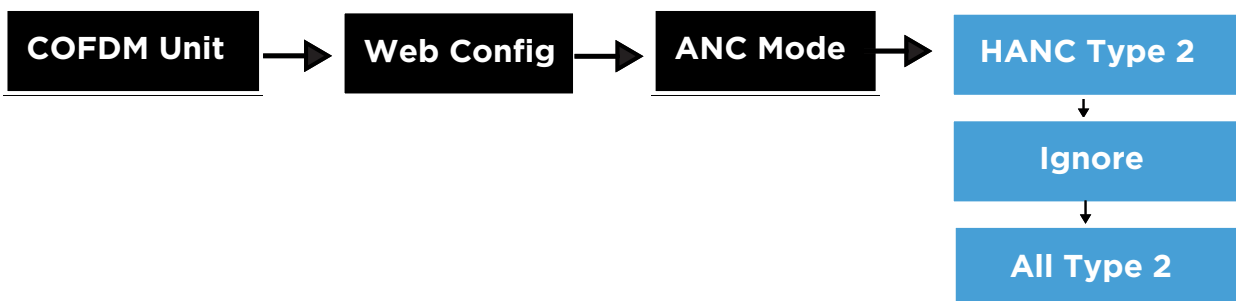
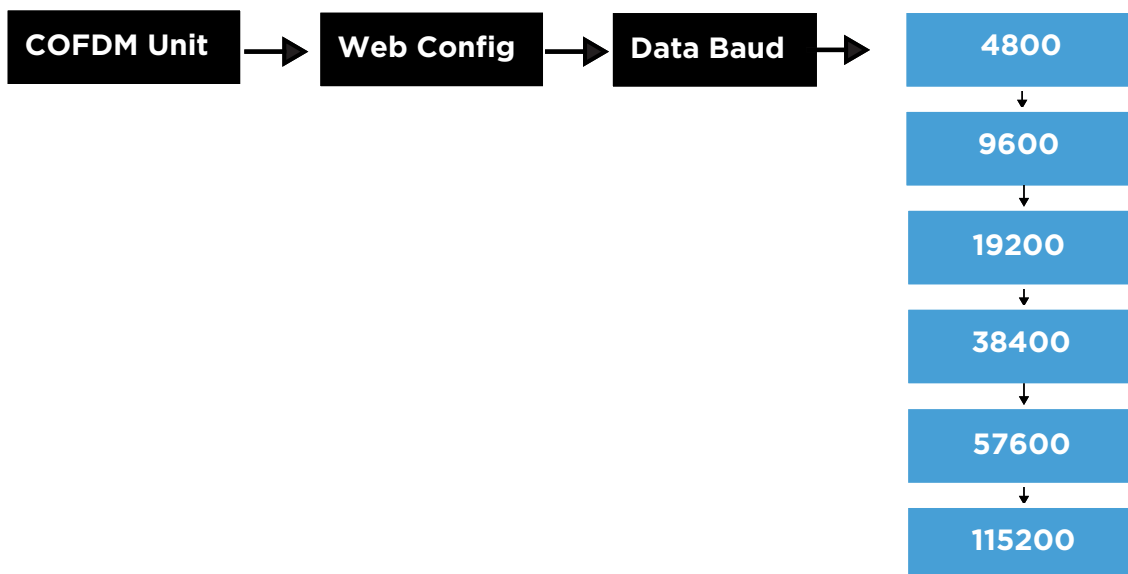
### Reset



## Transmitter Menu Structure

### COFDM Unit Menu Structure

#### Web Config



## Transmitter Menu Structure

### COFDM Unit Menu Structure

#### Web Config

COFDM Unit



Web Config



Data Mode



Off



RS-232



External CFU

## Transmitter Menu Structure

### RF Menu Structure

RF → Attenuation

RF → Output → Off  
↓  
On

RF → Frequency

RF → Power → 100mW  
↓  
10mW  
↓  
50mW

## Transmitter Menu Structure

### DVB-T Structure

#### Polarity

DVB-T

Polarity

Inverted



Normal

#### Dual Pedestal

DVB-T

Dual Pedestal

On



Off

#### Bandwidth

DVB-T

Bandwidth

7MHz



8MHz

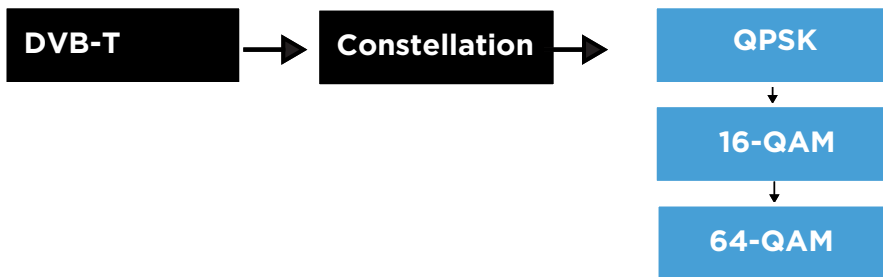


6MHz

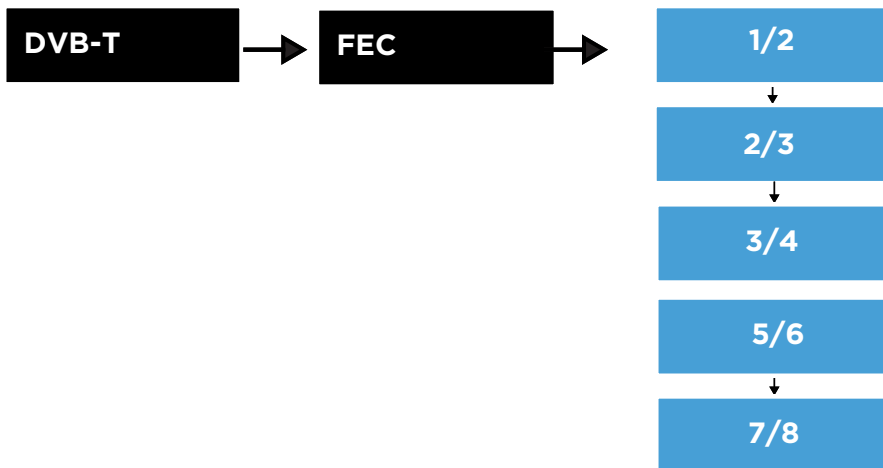
## Transmitter Menu Structure

### DVB-T Structure

#### Constellation



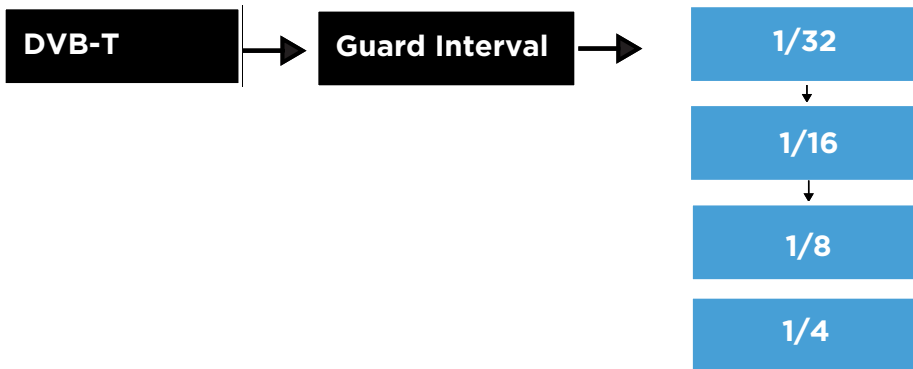
#### FEC



## Transmitter Menu Structure

### DVB-T Structure

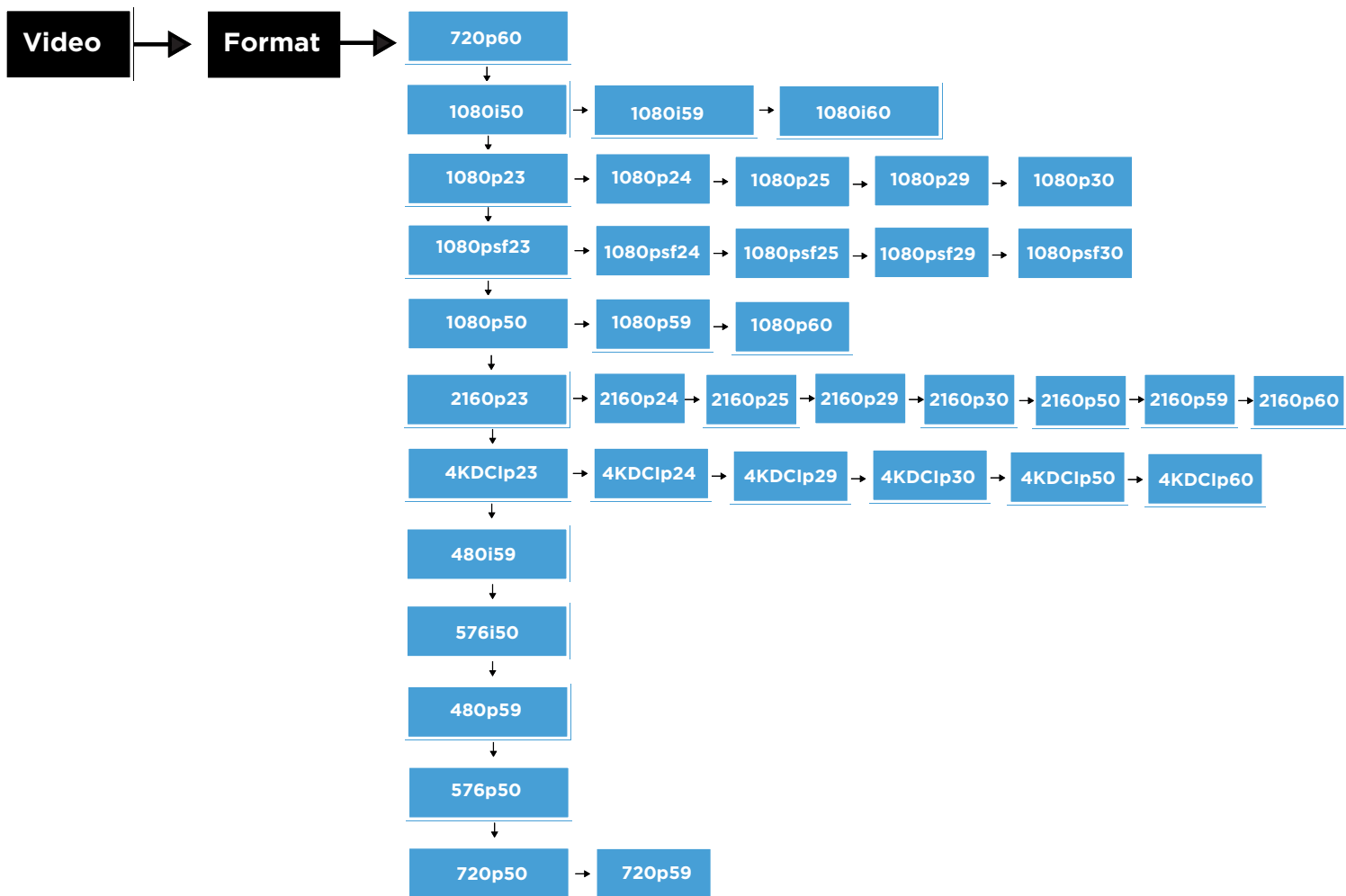
#### Guard Interval



## Transmitter Menu Structure

### Video Menu Structure

#### Format



## Transmitter Menu Structure

### Video Menu Structure

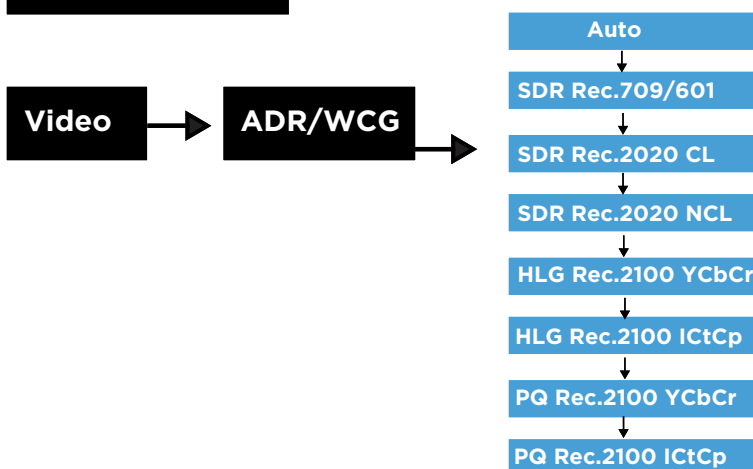
#### Chroma



#### Bit Depth



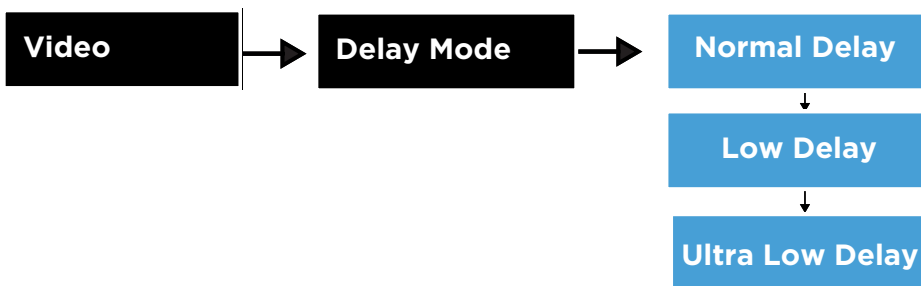
#### ADR/WCG



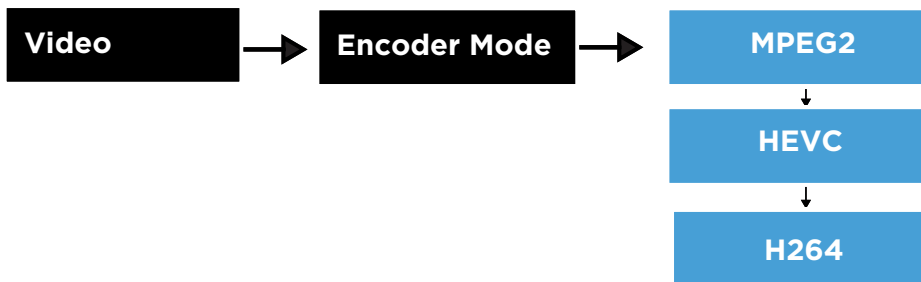
## Transmitter Menu Structure

### Video Menu Structure

#### Delay Mode



#### Encoder Mode



#### Source



## Transmitter Menu Structure

### Video Menu Structure

**Service Name**

**Video**



**Service Name**

**Service Number**

**Video**

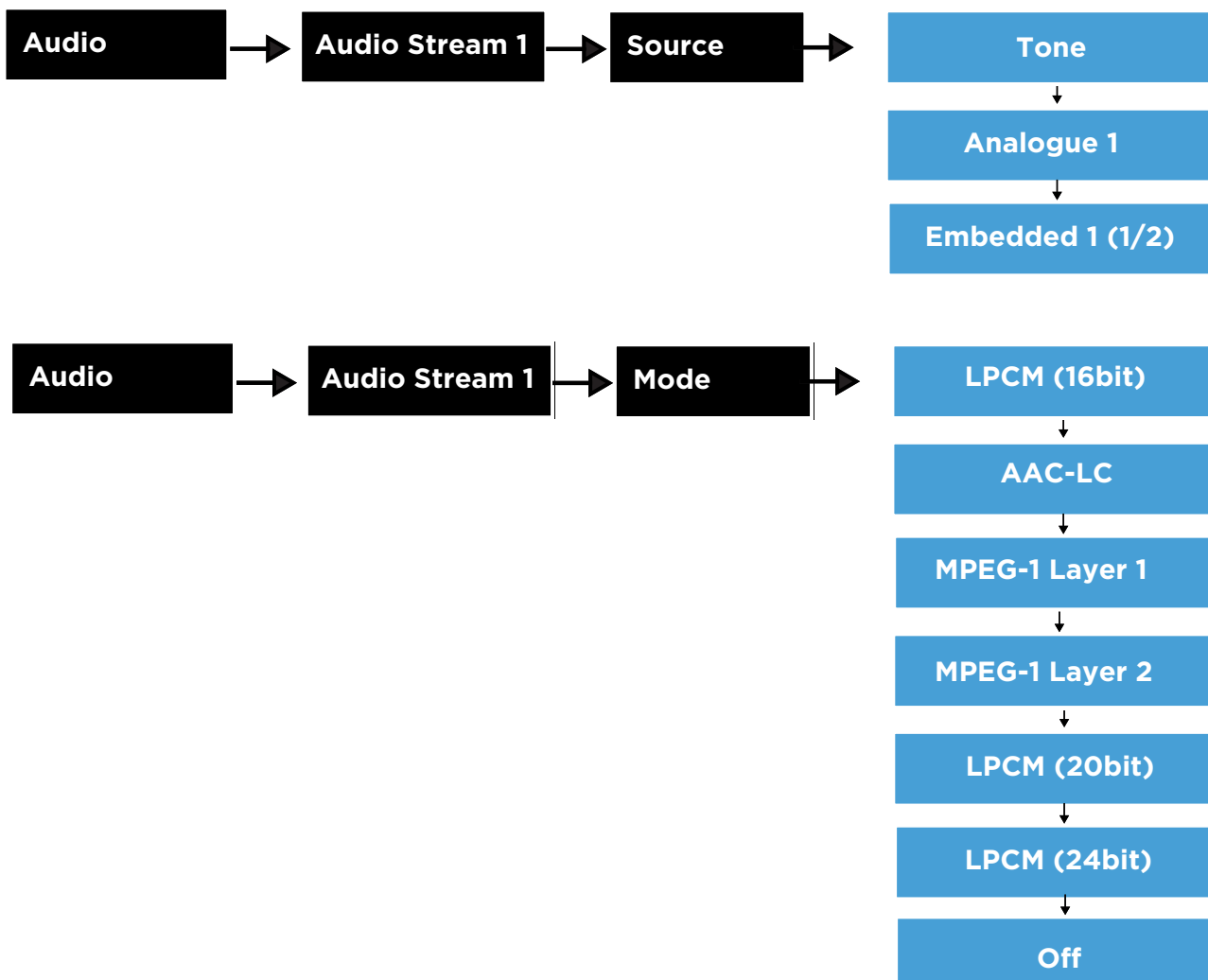


**Service Number**

## Transmitter Menu Structure

### Audio Menu Structure

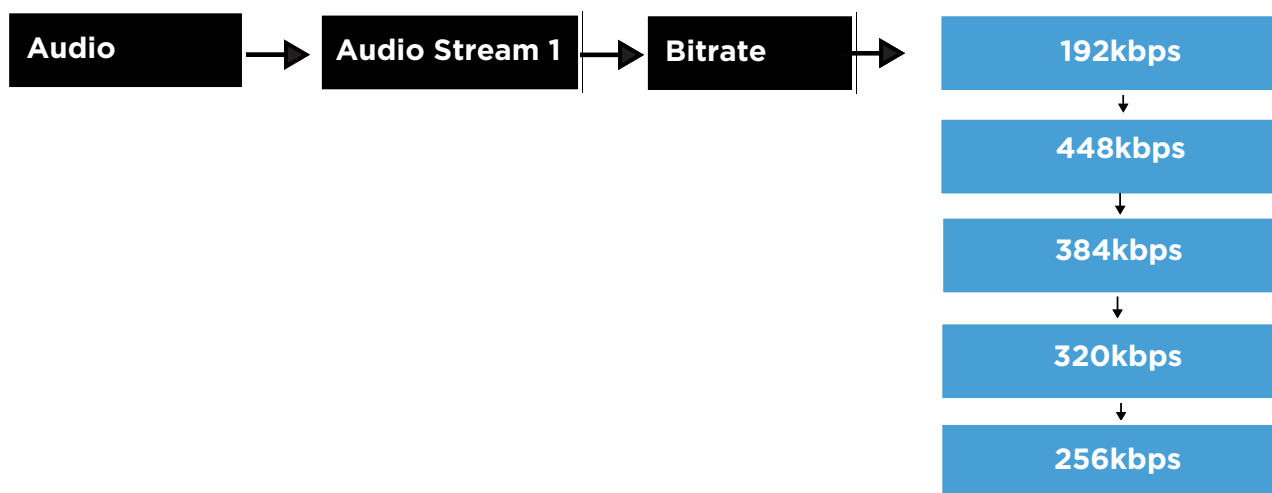
#### Audio Stream 1



## Transmitter Menu Structure

### Audio Menu Structure

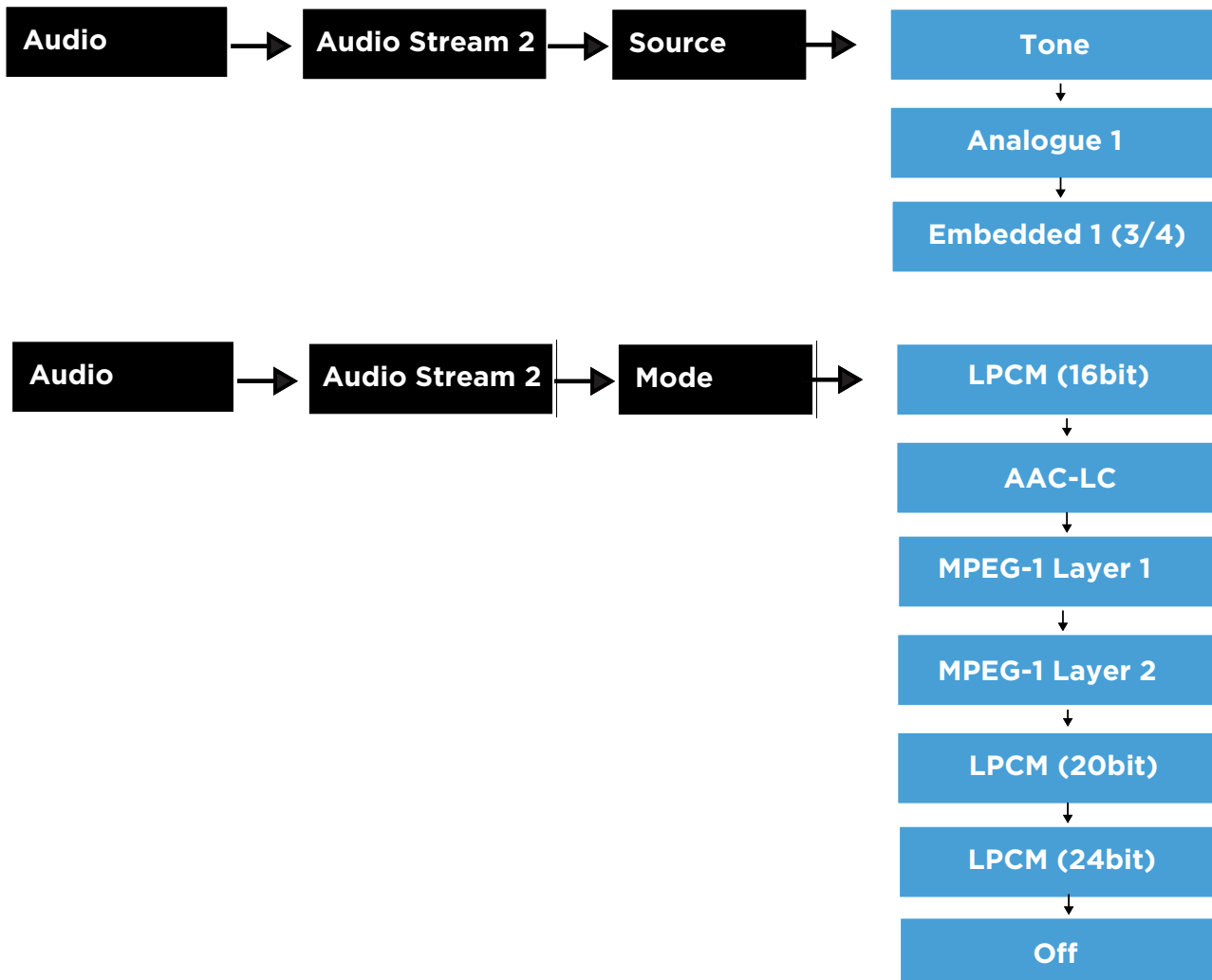
#### Audio Stream 1



## Transmitter Menu Structure

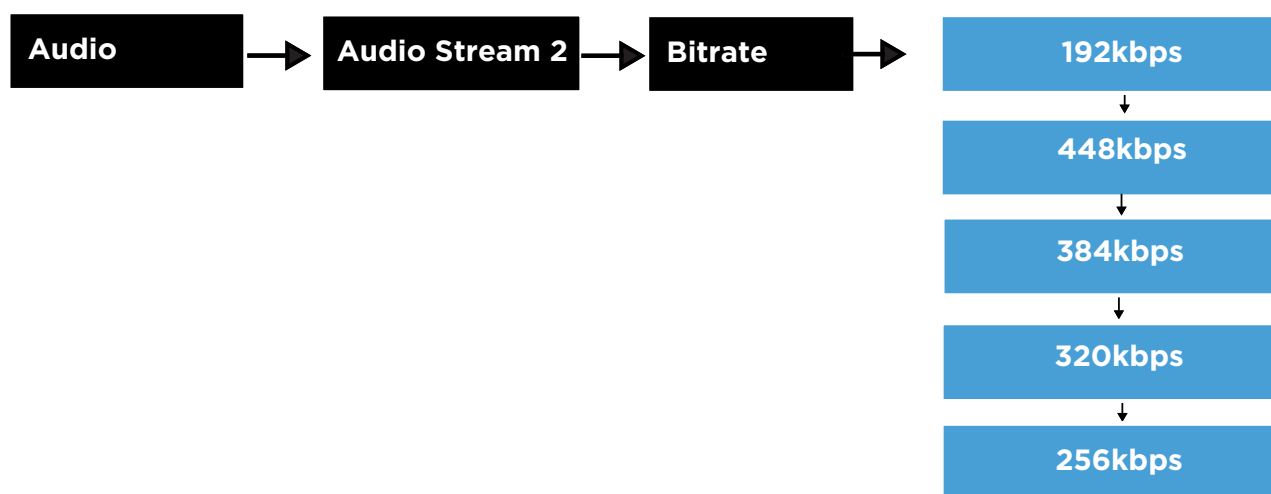
### Audio Menu Structure

#### Audio Stream 2



## Transmitter Menu Structure

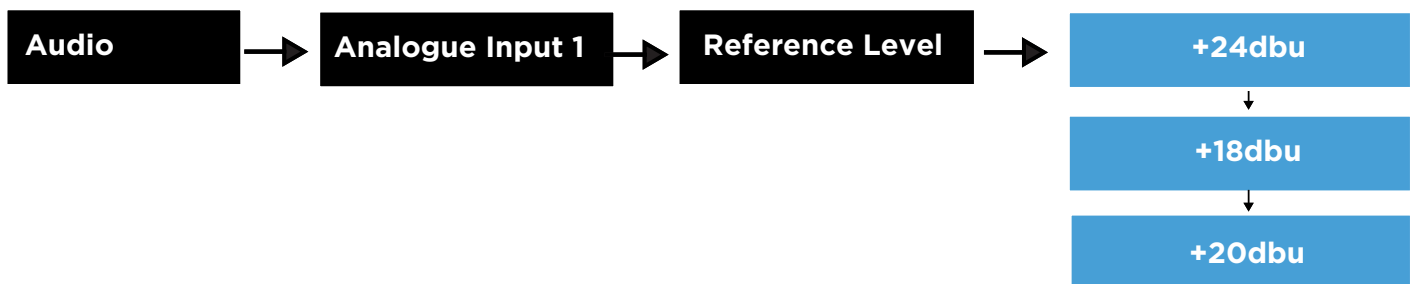
### Audio Menu Structure



## Transmitter Menu Structure

### Audio Menu Structure

#### Analogue Input 1



## Camera Control Menu Structure

### Camera Control Menu Structure

**Status Page:**

**Camera Control Main Menu**

**Menus:**

**Controller Network**

**Camera Manufacturer**

**Camera Number**

**Radio**

**System Settings**

## Camera Control Menu Structure

### Camera Control Menu Structure

Status Page:

Menus:

**Camera Control** →

**Controller Network** →

Net Gateway

↓  
IP Address

↓  
Netmask

**Camera Control** →

**Camera Manufacturer** →

Videosys

↓  
Sony

↓  
Grass Valley

↓  
Hitachi

↓  
Ikegami

↓  
Panasonic

↓  
Nac HiMo

↓  
Tally Only

↓  
Arri

↓  
MiniCam

## Camera Control Menu Structure

### Camera Control Menu Structure

Status Page:

Menus:

Camera Control



Camera Number



Select Camera Number

Camera Control



Radio

Multi Zone Menu

Primary Frequency

Multi Zone Menu



Multi Zone AF List



PER Threshold



RX Timeout Threshold



RX Search Delay



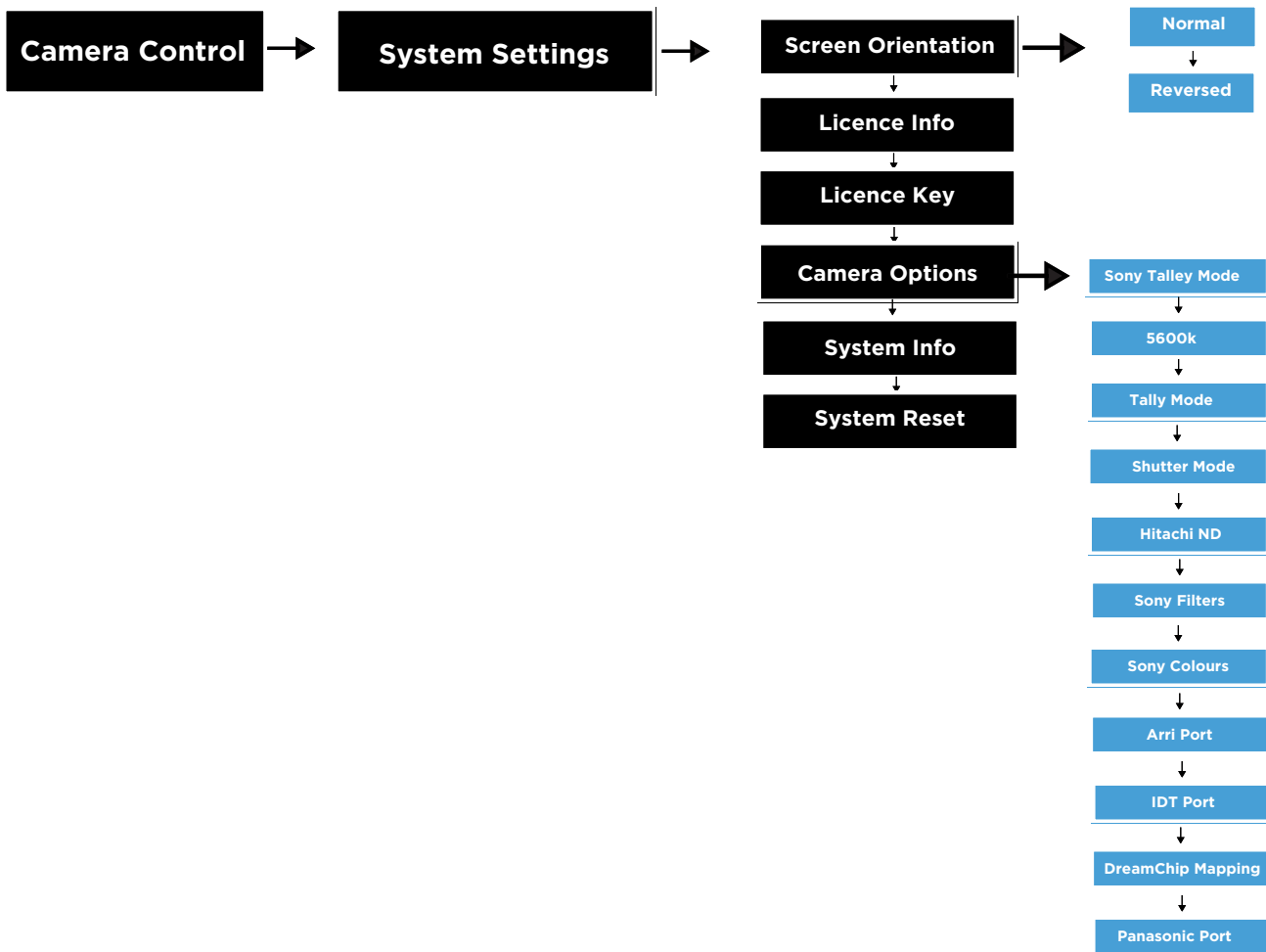
Reset

## Camera Control Menu Structure

### Camera Control Menu Structure

Status Page:

Menus:



## Camera Control Menu Structure

### Camera Control Menu Structure

Status Page:

Menus:

**Camera Control**



**Camera Network**



Sony IP

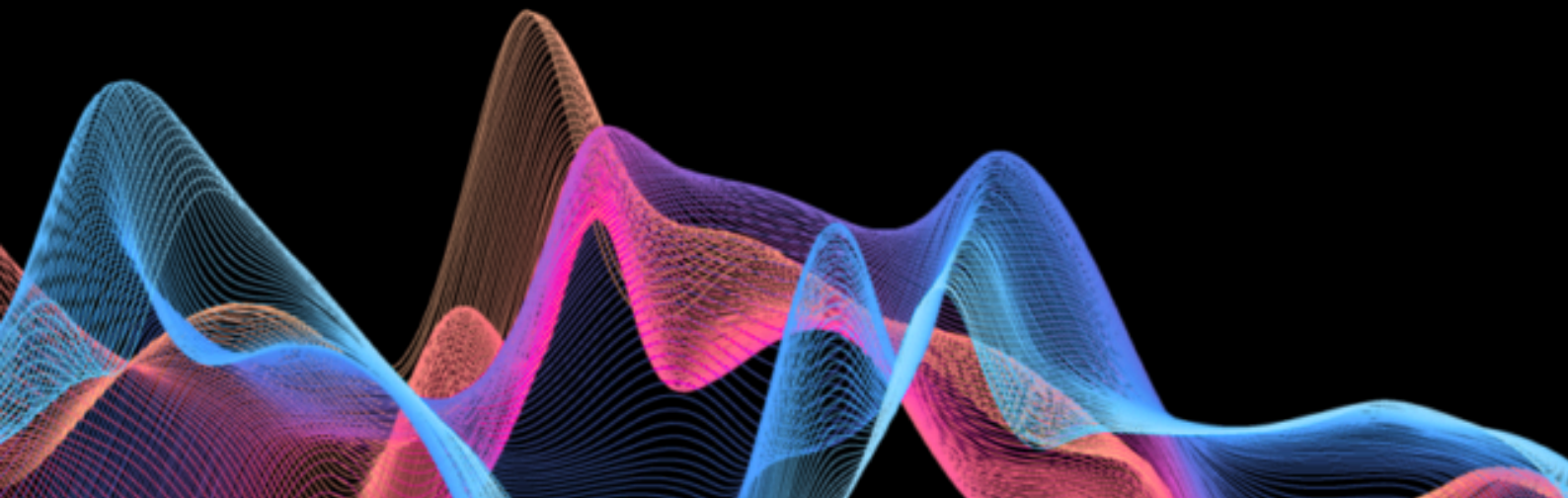


IDT Address



Panasonic IP

# WEB PAGES



## Configuration - RF

VideoSys Broadcast Version: 2.0.R3

Configuration | **Advanced** | RF | Video | Audio | Engineering | Cam Control | Cam Options

[Read Settings](#) [Apply Settings](#) [Load User Preset](#)

DVB-T

Bandwidth <input type="radio"/> 6 MHz <input type="radio"/> 7 MHz <input checked="" type="radio"/> 8 MHz	Constellation <input type="radio"/> QPSK <input checked="" type="radio"/> 16QAM <input type="radio"/> 64QAM	FEC <input type="radio"/> 1/2 <input checked="" type="radio"/> 2/3 <input type="radio"/> 3/4 <input type="radio"/> 5/6 <input type="radio"/> 7/8	Guard Interval <input checked="" type="radio"/> 1/32 <input type="radio"/> 1/16 <input type="radio"/> 1/8 <input type="radio"/> 1/4	Polarity <input checked="" type="radio"/> Normal <input type="radio"/> Inverted	Dual Pedestal <input checked="" type="radio"/> OFF <input type="radio"/> ON
---	--	---	---	---	---

RF

Modulator Frequency (MHz):  Output Attenuation (db):

Radio:  OFF  ON

Output Power:  10 mW  50 mW  100 mW

## Configuration - Video

VideoSys Broadcast Version: 2.0.R3

Configuration | **Advanced** | RF | **Video** | Audio | Engineering | Cam Control | Cam Options

[Read Settings](#) [Apply Settings](#) [Load User Preset](#)

Video

Video Format <input type="text" value="1080i50"/>	Chroma Format <input checked="" type="radio"/> 4:2:0 <input type="radio"/> 4:2:2	Bit Depth <input checked="" type="radio"/> 8 bit <input type="radio"/> 10 bit	Delay Mode <input type="radio"/> Normal Delay <input checked="" type="radio"/> Low Delay <input type="radio"/> Ultra Low Delay	Encoder Mode <input checked="" type="radio"/> HEVC <input type="radio"/> H264 <input type="radio"/> MPEG2
--	--	---	---	--

HDR Mode:

Source:  Default  Pattern

Service: Name:  Number:

## Configuration - Audio

VideoSys Broadcast Version: 2.0.R3

Configuration Advanced

RF Video Audio Engineering Cam Control Cam Options

Read Settings Apply Settings Load User Preset

Audio

Analogue Input 1

Left Gain 0.5db: 000000

Right Gain 0.5db: 000000

Phantom Power

Off  
 On

Reference level

+24dBu  
 +18dBu  
 +20dBu

Audio Stream 1

Mode: LPCM (16b)

Source: Analogue 1

Bitrate: 448kbps

Audio Stream 2

Mode: OFF

Source: Analogue 1

Bitrate: 448kbps

## Configuration - Engineering

VideoSys Broadcast Version: 2.0.R3

Configuration Advanced

RF Video Audio Engineering Cam Control Cam Options

Read Settings Apply Settings Load User Preset

Engineering Settings

DHCP:  Disabled  Enabled

FPGA Temperature: 50.7C

Video Lock: not locked

Static

IP Address: 192.168.0.21

Gateway: 192.168.0.1

Netmask: 255.255.255.0

Dynamic

IP Address: 192.168.0.21

Gateway: 192.168.0.1

Netmask: 255.255.255.0

COFDM Data Settings

ANC Mode:  Ignore  All Type 2  HANC Type 2

Data Mode:  Off  RS-232  External CFU

Data Baud: 9800

## Configuration - Cam Control

VideoSys Broadcast Version: 2.0.R3

Configuration **Advanced**

RF Video Audio Engineering **Cam Control** Cam Options

Camera Control Settings

<p>Camera</p> <p>Camera Number <input type="text" value="1"/></p> <p>Connection Method</p> <p><input checked="" type="radio"/> Serial <input type="radio"/> Ethernet</p> <p>Camera Manufacturer</p> <p><input checked="" type="radio"/> Sony <input type="radio"/> Panasonic - RC10 - AJ-HD <input type="radio"/> Panasonic - RC10 - AJ-PX <input type="radio"/> Panasonic - EC4 - AJ-HD <input type="radio"/> Panasonic - EC4 - AJ-PX <input type="radio"/> Pan Studio <input type="radio"/> Pan AJ2 <input type="radio"/> Grass Valley - Bi <input type="radio"/> Grass Valley - Uni - LDK <input type="radio"/> Grass Valley - Uni - LDX <input type="radio"/> Ikegami <input type="radio"/> Nac Himo <input type="radio"/> Hitachi <input type="radio"/> Videosys <input type="radio"/> Tally Only <input type="radio"/> Arri <input type="radio"/> Dreamchip <input type="radio"/> Visca <input type="radio"/> IDT</p>	<p>Radio</p> <table><tr><td>Primary Frequency</td><td><input type="text" value="458.750000"/></td></tr><tr><td>Multizone Freq 1</td><td><input type="text" value="000.000000"/></td></tr><tr><td>Multizone Freq 2</td><td><input type="text" value="000.000000"/></td></tr><tr><td>Multizone Freq 3</td><td><input type="text" value="000.000000"/></td></tr><tr><td>Multizone Freq 4</td><td><input type="text" value="000.000000"/></td></tr><tr><td>Multizone Freq 5</td><td><input type="text" value="000.000000"/></td></tr><tr><td>Multizone Freq 6</td><td><input type="text" value="000.000000"/></td></tr><tr><td>Multizone Freq 7</td><td><input type="text" value="000.000000"/></td></tr><tr><td>Multizone Freq 8</td><td><input type="text" value="000.000000"/></td></tr><tr><td>Packet Error Rate [%]</td><td><input type="text" value="15"/></td></tr><tr><td>Rx Timeout [ms]</td><td><input type="text" value="1000"/></td></tr><tr><td>Rx Search Delay [ms]</td><td><input type="text" value="800"/></td></tr></table> <p>Multizone Mode</p> <p><input checked="" type="radio"/> Primary Frequency Only <input type="radio"/> Use Multizone Freq List</p> <p><input type="button" value="Reset Multizone Settings"/></p>	Primary Frequency	<input type="text" value="458.750000"/>	Multizone Freq 1	<input type="text" value="000.000000"/>	Multizone Freq 2	<input type="text" value="000.000000"/>	Multizone Freq 3	<input type="text" value="000.000000"/>	Multizone Freq 4	<input type="text" value="000.000000"/>	Multizone Freq 5	<input type="text" value="000.000000"/>	Multizone Freq 6	<input type="text" value="000.000000"/>	Multizone Freq 7	<input type="text" value="000.000000"/>	Multizone Freq 8	<input type="text" value="000.000000"/>	Packet Error Rate [%]	<input type="text" value="15"/>	Rx Timeout [ms]	<input type="text" value="1000"/>	Rx Search Delay [ms]	<input type="text" value="800"/>
Primary Frequency	<input type="text" value="458.750000"/>																								
Multizone Freq 1	<input type="text" value="000.000000"/>																								
Multizone Freq 2	<input type="text" value="000.000000"/>																								
Multizone Freq 3	<input type="text" value="000.000000"/>																								
Multizone Freq 4	<input type="text" value="000.000000"/>																								
Multizone Freq 5	<input type="text" value="000.000000"/>																								
Multizone Freq 6	<input type="text" value="000.000000"/>																								
Multizone Freq 7	<input type="text" value="000.000000"/>																								
Multizone Freq 8	<input type="text" value="000.000000"/>																								
Packet Error Rate [%]	<input type="text" value="15"/>																								
Rx Timeout [ms]	<input type="text" value="1000"/>																								
Rx Search Delay [ms]	<input type="text" value="800"/>																								

## Configuration - Cam Options

VideoSys Broadcast Version: 2.0.R3

Configuration | **Advanced**

RF | Video | Audio | Engineering | Cam Control | **Cam Options**

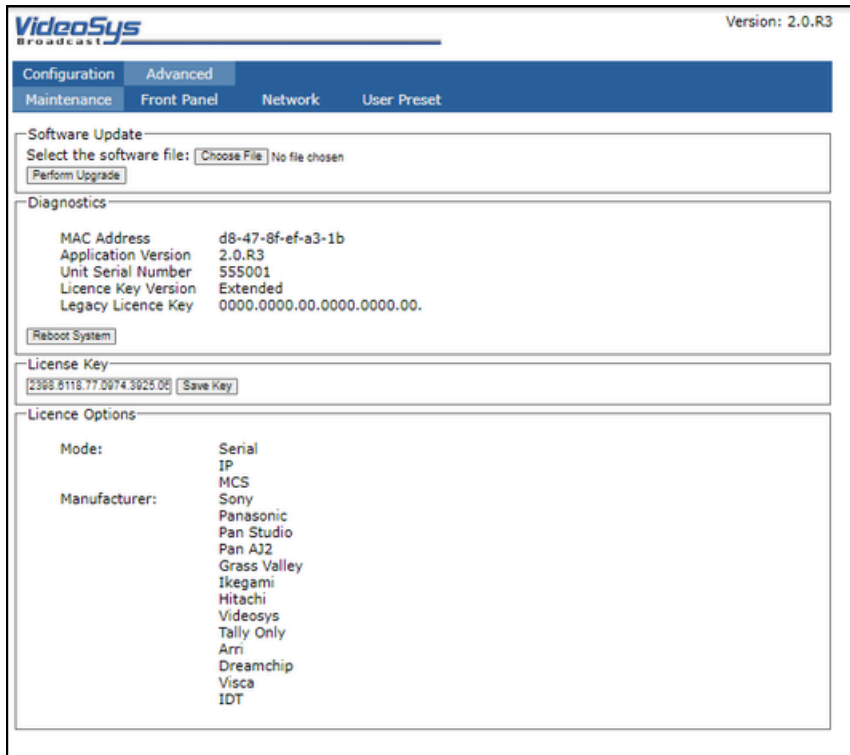
Camera Options

5600K <input checked="" type="radio"/> Enabled (Filters) <input type="radio"/> Disabled (ECC)	Tally Mode <input checked="" type="radio"/> Standard <input type="radio"/> Force Reload	Shutter Mode <input checked="" type="radio"/> Relative (HDW) <input type="radio"/> Absolute	Hitachi ND Filters <input checked="" type="radio"/> 5 Position (Cap) <input type="radio"/> 4 Position
Sony Filters <input checked="" type="radio"/> Disabled <input type="radio"/> Enabled (ECC)	Sony Colour Mode <input checked="" type="radio"/> Absolute <input type="radio"/> Relative (AWB)	Dreamchip Mapping <input checked="" type="radio"/> Linear (Full Range) <input type="radio"/> Quadratic	

Camera Network

Arri Port	<input type="text" value="7800"/>
IDT Port	<input type="text" value="22369"/>
Panasonic IP Address	<input type="text" value="0.0.0.0"/>
Panasonic Port	<input type="text" value="0"/>
Panasonic Username	<input type="text"/>
Panasonic Password	<input type="text"/>
Sony Cam IP Address	<input type="text" value="0.0.0.0"/>
IDT IP Address	<input type="text" value="0.0.0.0"/>

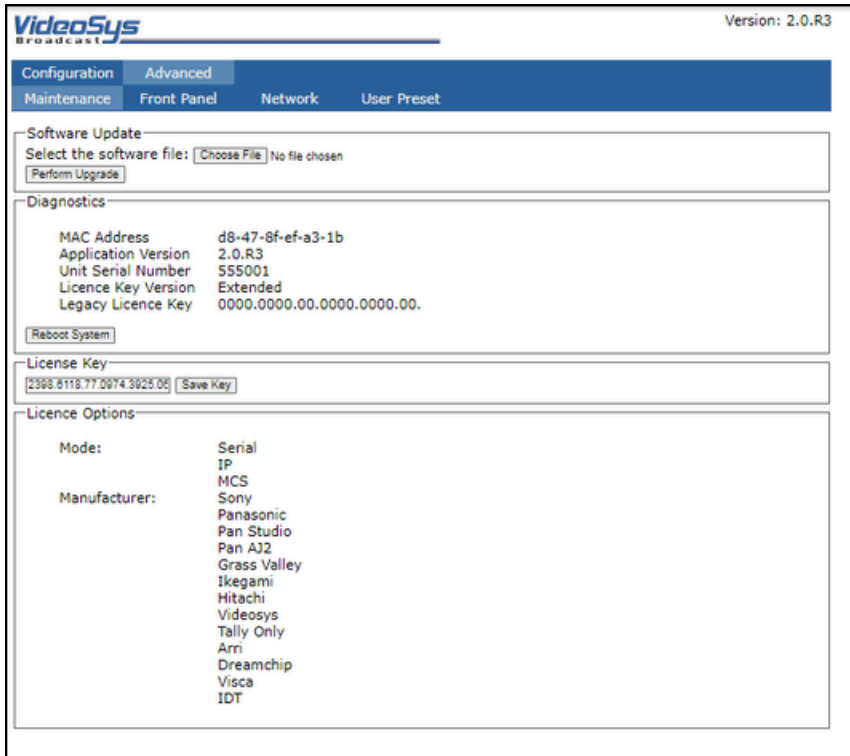
## Advanced - Maintenance



## Advanced - Front Panel



## Advanced - Maintenance



## Advanced - Front Panel



## Advanced - Network

VideoSys Broadcast Version: 2.0.R3

Configuration **Advanced** Maintenance Front Panel **Network** User Preset

Network Settings

IP Address	<input type="text" value="192.168.1.240"/>
IP Mask	<input type="text" value="255.255.255.0"/>
IP Gateway	<input type="text" value="192.168.1.254"/>

## Advanced - User Preset - RF

VideoSys Broadcast Version: 2.0.R3

Configuration **Advanced** Maintenance Front Panel **Network** **User Preset** RF Video Audio Engineering Cam Control Cam Options File

DVB-T

<b>Bandwidth</b> <input checked="" type="radio"/> 6 MHz <input type="radio"/> 7 MHz <input type="radio"/> 8 MHz	<b>Constellation</b> <input checked="" type="radio"/> QPSK <input type="radio"/> 16QAM <input type="radio"/> 64QAM	<b>FEC</b> <input checked="" type="radio"/> 1/2 <input type="radio"/> 2/3 <input type="radio"/> 3/4 <input type="radio"/> 5/6 <input type="radio"/> 7/8	<b>Guard Interval</b> <input checked="" type="radio"/> 1/32 <input type="radio"/> 1/16 <input type="radio"/> 1/8 <input type="radio"/> 1/4	<b>Polarity</b> <input checked="" type="radio"/> Normal <input type="radio"/> Inverted	<b>Dual Ped</b> <input type="radio"/> OFF <input type="radio"/> ON
--	---	--	--	--	--

RF

Modulator Frequency (MHz): <input type="text" value="0"/>	Output Attenuation (db): <input type="text"/>
---	---

<b>Radio</b> <input checked="" type="radio"/> OFF <input type="radio"/> ON	<b>Output Power</b> <input checked="" type="radio"/> 10 mW <input type="radio"/> 50 mW <input type="radio"/> 100 mW
--	--

## Advanced - User Preset - Video

VideoSys Broadcast Version: 2.0.R3

Configuration Advanced  
Maintenance Front Panel Network User Preset  
RF Video Audio Engineering Cam Control Cam Options File

Save Live as Preset Save User Preset

Video

Video Format: 480i59  
Chroma Format:  4:2:0  4:2:2  
Bit Depth:  8 bit  10 bit  
HDR Mode: Auto  
 Service

## Advanced - User Preset - Audio

VideoSys Broadcast Version: 2.0.R3

Configuration Advanced  
Maintenance Front Panel Network User Preset  
RF Video Audio Engineering Cam Control Cam Options File

Presets fetch failed - please reload the page

Save Live as Preset Save User Preset

Audio

Analogue Input 1 Audio Stream 1 Audio Stream 2

## Advanced - User Preset - Video

VideoSys Broadcast Version: 2.0.R3

Configuration: Advanced | Maintenance: Front Panel | Network: User Preset | RF: Video | Audio: Engineering | Cam Control: Cam Options | File

Save Live as Preset Save User Preset

Video

Video Format: 480i59  
Chroma Format:  4:2:0  4:2:2  
Bit Depth:  8 bit  10 bit  
HDR Mode: Auto  
 Service

## Advanced - User Preset - Audio

VideoSys Broadcast Version: 2.0.R3

Configuration: Advanced | Maintenance: Front Panel | Network: User Preset | RF: Video | Audio: Audio | Engineering: Cam Control | Cam Options: File

Presets fetch failed - please reload the page Save Live as Preset Save User Preset

Audio

Analogue Input 1 Audio Stream 1 Audio Stream 2

## Advanced - User Preset - Engineering

**VideoSys** Broadcast Version: 2.0.R3

Configuration	Advanced					
Maintenance	Front Panel	Network	User Preset			
RF	Video	Audio	Engineering	Cam Control	Cam Options	File

Engineering Settings

Static

COFDM Data Settings

## Advanced - User Preset - Cam Control

VideoSys Broadcast Version: 2.0.R3

Configuration | **Advanced** | Maintenance | Front Panel | Network | User Preset | RF | Video | Audio | Engineering | **Cam Control** | Cam Options | File

Save Live as Preset | Save User Preset

Camera Control Settings

<p>Camera</p> <p>Camera Number <input type="text" value="0"/></p> <p>Connection Method</p> <p><input checked="" type="radio"/> Serial <input type="radio"/> Ethernet</p> <p>Camera Manufacturer</p> <p><input checked="" type="radio"/> Sony <input type="radio"/> Panasonic - RC10 - AJ-HD <input type="radio"/> Panasonic - RC10 - AJ-PX <input type="radio"/> Panasonic - EC4 - AJ-HD <input type="radio"/> Panasonic - EC4 - AJ-PX <input type="radio"/> Pan Studio <input type="radio"/> Pan AJ2 <input type="radio"/> Grass Valley - Bi <input type="radio"/> Grass Valley - Uni - LDK <input type="radio"/> Grass Valley - Uni - LDX <input type="radio"/> Ikegami <input type="radio"/> Nec Himo <input type="radio"/> Hitachi <input type="radio"/> Videosys <input type="radio"/> Tally Only <input type="radio"/> Arri <input type="radio"/> Dreamchip <input type="radio"/> Visca <input type="radio"/> IDT</p>	<p>Radio</p> <p>Primary Frequency <input type="text"/></p> <p>Multizone Freq 1 <input type="text"/></p> <p>Multizone Freq 2 <input type="text"/></p> <p>Multizone Freq 3 <input type="text"/></p> <p>Multizone Freq 4 <input type="text"/></p> <p>Multizone Freq 5 <input type="text"/></p> <p>Multizone Freq 6 <input type="text"/></p> <p>Multizone Freq 7 <input type="text"/></p> <p>Multizone Freq 8 <input type="text"/></p> <p>Packet Error Rate [%] <input type="text" value="0"/></p> <p>Rx Timeout [ms] <input type="text" value="0"/></p> <p>Rx Search Delay [ms] <input type="text" value="0"/></p> <p>Multizone Mode</p> <p><input checked="" type="radio"/> Primary Frequency Only <input type="radio"/> Use Multizone Freq List</p> <p>Reset Multizone Settings</p>
---	--

## Advanced - User Preset - Cam Options

VideoSys Broadcast Version: 2.0.R3

Configuration **Advanced**  
Maintenance Front Panel Network **User Preset**  
RF Video Audio Engineering Cam Control **Cam Options** File

**Presets fetch failed - please reload the page** [Save Live as Preset] [Save User Preset]

Camera Options

5600K <input checked="" type="radio"/> Enabled (Filters) <input type="radio"/> Disabled (ECC)	Tally Mode <input checked="" type="radio"/> Standard <input type="radio"/> Force Reload	Shutter Mode <input checked="" type="radio"/> Relative (HDW) <input type="radio"/> Absolute	Hitachi ND Filters <input checked="" type="radio"/> 5 Position (Cap) <input type="radio"/> 4 Position
Sony Filters <input checked="" type="radio"/> Disabled <input type="radio"/> Enabled (ECC)	Sony Colour Mode <input checked="" type="radio"/> Absolute <input type="radio"/> Relative (AWB)	Dreamchip Mapping <input checked="" type="radio"/> Linear (Full Range) <input type="radio"/> Quadratic	

Camera Network

Arri Port	<input type="text" value="0"/>
IDT Port	<input type="text" value="0"/>
Panasonic IP Address	<input type="text" value="0.0.0.0"/>
Panasonic Port	<input type="text" value="0"/>
Panasonic Username	<input type="text"/>
Panasonic Password	<input type="text"/>
Sony Cam IP Address	<input type="text" value="0.0.0.0"/>
IDT IP Address	<input type="text" value="0.0.0.0"/>

## Advanced - User Preset - File

The screenshot displays the 'Advanced - User Preset - File' configuration page in the VideoSys Broadcast web interface. The page title is 'VideoSys Broadcast' and the version is '2.0.R3'. The navigation menu includes 'Configuration', 'Advanced', 'Maintenance', 'Front Panel', 'Network', 'User Preset', 'RF', 'Video', 'Audio', 'Engineering', 'Cam Control', 'Cam Options', and 'File'. The 'File' sub-menu is active, showing options for 'Presets File' and 'Utilities'. Under 'Presets File', there are sections for selecting a file to load and downloading a file with device presets. Under 'Utilities', there is a 'Re-initialise Presets' button.

VideoSys Broadcast Version: 2.0.R3

Configuration Advanced Maintenance Front Panel Network User Preset RF Video Audio Engineering Cam Control Cam Options File

Presets File

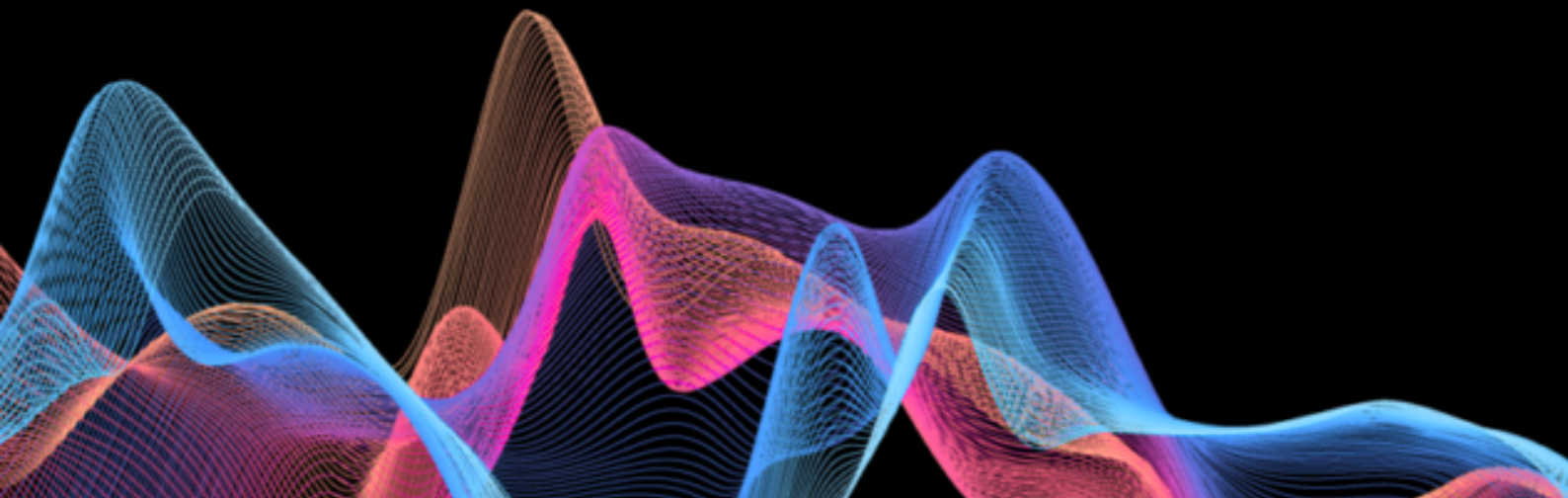
Select a presets file (.gcp) to load on the device:

No file chosen

Download a file with the device presets:

Utilities

# TRANSMITTER GUIDE



This part of the document is designed to help an operator successfully and quickly configure the RF System. It contains background information on the technology behind the video link and how to best configure it for the environment, as well as settings an operator may have to configure in order to get the video and camera control paths operational. We would recommend that for configuring the video path it is best to start at the signal source, in this case the camera, and to work backwards to the monitor output on the RX380 and DEC150.

The RF System is designed to leverage DVB-T to get the best picture and performance. DVB-T is an industry standard Digital Video Broadcasting standard that uses COFDM to transmit compressed video over the air. Most DVB-T transmitters allow settings to be changed to trade off data bandwidth for video link robustness.

DVB-T transmitters typically allow the following settings;

**Constellation/Modulation setting**

QPSK, 16 QAM, and 64 QAM  
QPSK allows for two bits per symbol, 16 QAM allows for four bits per symbol, 64 QAM six bits per symbol. This means that 16 QAM allows twice the raw data rate of QPSK and 64 QAM three times QPSK.

**Coding rate or FEC**

Typically 1/2, 2/3, 3/4, 5/6 or 7/8 This is the percentage of the data bandwidth that is used for transmission payload (video/audio) instead of error correction data - 7/8 would mean that only 1/8th of the data bandwidth is correction data, giving the most bandwidth for video (better picture quality) but potentially at the expense of link robustness - RF breakup may occur in some situations.

**Guard Interval**

DVB-T Values are 1/4, 1/8, 1/16, 1/32, Guard intervals are pauses in transmission that are necessary to prevent the system from accidentally interpreting signal reflections and echoes. With insufficient guard interval, reflections and echoes may reach the receiver in combination with valid transmitted data, this will reduce performance and potentially cause RF breakup, in environments where RF reflections are less likely (very open environments) a lower Guard interval can be used. Whereas in areas where reflections are more likely to occur, such as near large concrete structures, a larger guard interval might be needed.

**Channel Bandwidth**

Typically 6MHz, 7MHz or 8MHz this is the RF bandwidth occupied by the transmission, more bandwidth allows for higher data rates, but may require additional licensing in some areas.

The RF System can operate in a non-standard DVB-T mode called dual Pedestal. Dual Pedestal is where a pair of DVB-T channels spaced 1MHz apart are used in unison to deliver twice the data rate of a single channel. Videosys recommend dual pedestal operation and at least 20Mbps data rate for UHD operation.

For an ultra robust RF link but a poor picture quality we would recommend (Yellow)

For normal usage we would recommend (Green) and for controlled studio environments where the best image quality is required we would recommend (Blue)

Modulation	Coding rate	Guard Interval			
		1/4	1/8	1/16	1/32
QPSK	1/2	4.976	5.529	5.855	6.032
	2/3	6.635	7.373	7.806	8.043
	3/4	7.465	8.294	8.782	9.048
	5/6	8.294	9.216	9.758	10.053
	7/8	8.709	9.6769	10.246	10.556
16-QAM	1/2	9.953	11.059	11.709	12.064
	2/3	13.271	14.745	15.612	16.806
	3/4	14.929	16.588	17.564	18.096
	5/6	16.588	18.431	19.516	20.107
	7/8	17.418	19.353	20.491	21.112
64-QAM	1/2	14.929	16.588	17.564	18.096
	2/3	19.906	22.118	23.419	24.128
	3/4	22.394	24.882	26.346	27.14
	5/6	24.882	27.647	29.273	30.16
	7/8	26.126	29.029	30.737	31.668

# *VideoSys* Broadcast

