ANTRICA
VIDEO OVER IP SOLUTIONS

ANT-2014 / 2054

4 x HDMI / 4 x HD-SDI
1080P60 STREAMING ENCODER
RTSP, HTTP, MPEG-TS & RTMP
User Manual V1.0

ANTRICA
VIDEO OVER IP SOLUTIONS

Table of contents   Page

1.0 Safety Instructions

● Read this manual carefully before powering the device.
● Removing the device cover without permission may injury and the warranty will be invalid
● Handle the device with care to avoid shock caused by a fall as internal components may be damaged and warranty invalidated
● Keep all flammable metal and liquid materials from coming in contact with the device casing as this will cause damage to the device.
● Avoid dusty places and places with heat sources or direct sunlight or install the device where it will be subject to sudden or severe mechanical vibration
● Connect a grounding earth connector to the metal case when fixing the case to any surface.
● Choose the correct type of HDMI and Ethernet cable connector for connecting to the device.
● Only use the power supply provided.
● Avoid rapid and frequent power on/off, or this may cause damage to the semiconductor chipsets.
● Ensure power cord is correctly fitted into the AC mains supply and the 12v DC connector correctly plugged in.
● Do not touch the power socket with wet hands to avoid electric shock
● Take off all jewelry or ornaments ,such as ring, necklaces, watches, bracelets, etc., before operating the device, or otherwise the metal contact may possibly cause a short circuit and result in components damage.
● Make sure the AC power is unplugged in case of changing cables
● Only Antrica staff are approved to remove the case else the warranty will be invalid.
● Ensure good ventilation when the device is in operation as this may cause damage to the device due to overheating.
● It is recommended to unplug the power cord from the wall socket if the device will not be used for a long period of time

2.0 OVERVIEW

Please note in this manual the pictures/screen shots shown are the HDMI version – all instructions remain the same for HDSDI version. In HDSDI version the HDMI is replaced with HDSDI connector.

ANT-2014 HDMI ENCODER is a low cost , high performance and easy-to-use 4 x HDMI video streaming device for RTSP HTTP RTMP and MPEG-TS streaming. Designed for professional video applications requiring 1080P60 HDMI signals to be streamed live. This product has 4 x channel HDMI audio and video input interface, and can simultaneously encode video and audio. Various stream formats are supported like HTTP RTSP RTMP and MPEG-TS
The Encoder supports 4 channel HDMI video capture and generates dual streams of h.264 encoding with AAC audio (G711 and MP3)

or

ANT-2054 HDSDI ENCODER is a low cost high performance and easy-to-use 4 x HDSDI video streaming device for RTSP HTTP RTMP and MPEG-TS streaming. Designed for professional video applications requiring 1080P60 HDMI signals to be streamed live. This product has 4 x channel HDMI audio and video input interface, and can simultaneously encode video and audio. Various stream formats are supported like HTTP RTSP RTMP and MPEG-TS
The Encoder supports 4 channel HDMI video capture and generates dual streams of h.264 encoding with AAC audio (G711 and MP3).

3.0 MAIN FEATURES

- ➢ 4 x HDMI / 4 x HD-SDI Input per Encoder unit
- ➢ 4 Channel 1RU (19 inch)
- ➢ Adjustable Protocol, Bitrate, Resolution, Profile per HDMI Source Input
- ➢ HDMI input source simultaneously supports
4 x channel up to 1920x1080p60
- ➢ Each channel stream can support any one of the following UDP/RTSP/ HTTP/MPEG-TS/RTMP protocols
- ➢ H.264 High/Main/Baseline Profile, ACC & mp3 audio
- ➢ Video bit rates:16-12000kbps;
- ➢ Audio bitrate:48-256kbps
- ➢ HD-to-SD downscale conversion
- ➢ Superior video quality at ultra-low bitrates, generally video bitrate advised SD about 680kbps, 720p about 1mbps,1080p about 3mbps for lowest bitrate
- ➢ Supporting CBR and VBR mode
- ➢ WEB User Interface / Management
- ➢ Easy-to-Use System Management
- ➢ API Http SDK available

4.0 TECHNICAL SPECIFICATION

VIDEO	
Input	4x HDMI / HDSDI input v1.3a
Resolution	1920 x1080P60 i60 1280 x720 50P/P60 etc
Encoding	H.264 High Profile to Baseline
Video Bitrate	0.8-12 Mbits/sec
Bitrate Mode	CBR or VBR
GOP	Adjustable GOP
Video Pre Processing	De-Interlacing , Noise reduction and image sharpening
AUDIO	
Encoding	AAC MP3
Resample Rate	Adaptive, 32k,44.1k, 48k, 64k, 96k, 128k, 160k, 192k
Sampling	24 bit
Bitrate	64kb/s to 384kb/s
SYSTEM	
RJ45	1GB Ethernet port 10/100/1000
Protocol	http rtsp rtmp mpeg-ts ONVIF
Configuration Interface	Web browser and SDK available
Upgrading	Network based firmware upgrade via web interface or SDK
ENVIRONMENT	
Dimensions	490mm x290mm x 44mm
Weight	3.3kg
Temperature	0-40c ambient
Power	12 volt supply
Power Consumption	39W

5.0 SIGNAL CONNECTIONS

When installing the Encoder each channel requires the following connections. Power (only 1 for the unit) , Ethernet , Video input (HDMI) and Audio.

Please note in this manual the pictures shown are the HDMI version – all instructions remain the same for HDSDI version. In HDSDI version the HDMI is replaced with HDSDI connector.

**Ethernet Interface RJ45   Audio Input Analogue Jack   Video Input –HDMI IN/OUT
RESET**
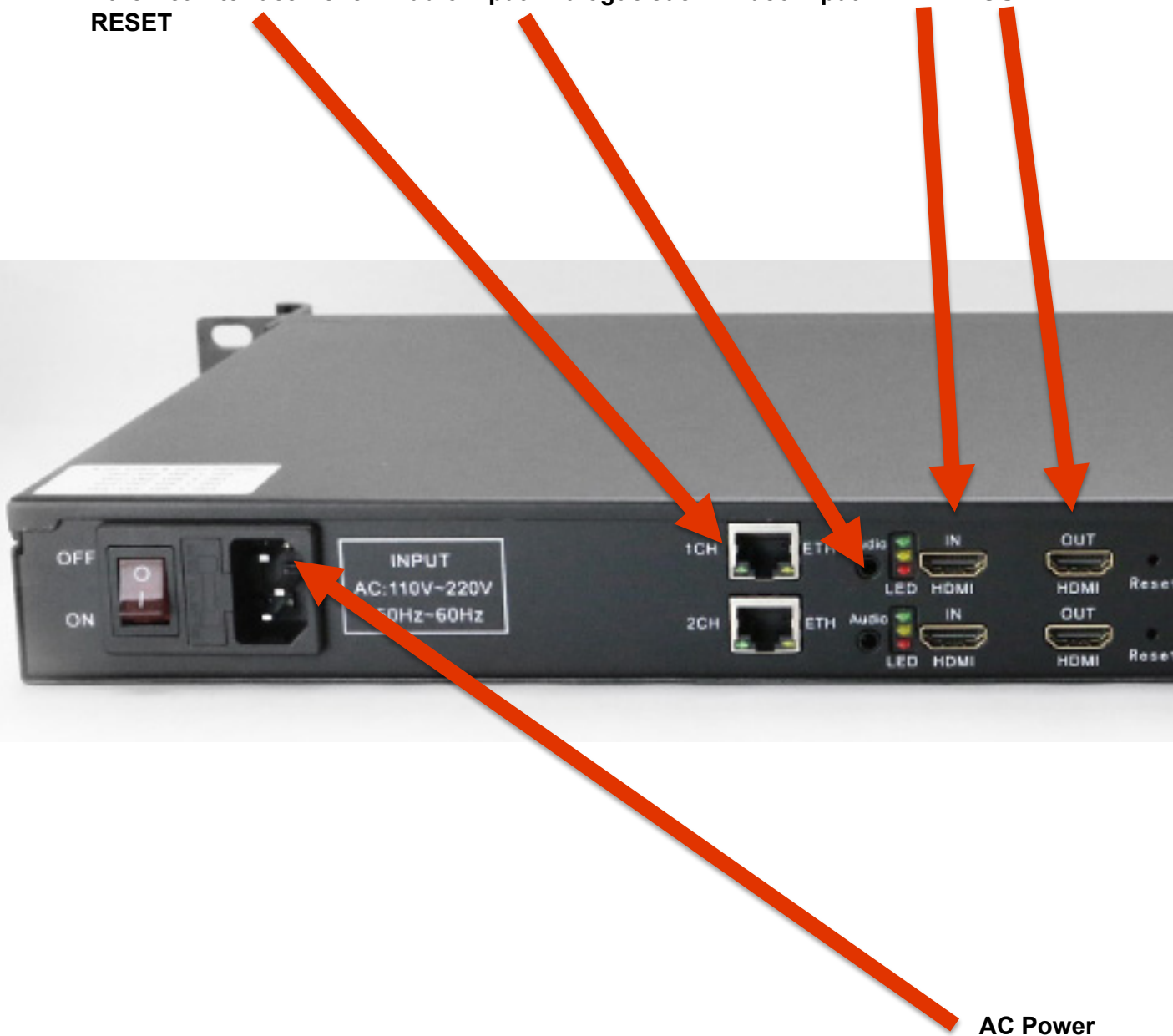
AC Power

6.0 NETWORK

When you enter the WEB interface using a browser, you will need to set the Laptop to a fixed IP address in the 192.168.1.xxx range
Browse to **192.168.1.200** (default IP address of 1 of the 4 channels of the encoder – others listed below)
You can now enter the settings page with a Log In of:

User: **admin**
Password: **admin**

Reset initialization: You can find a RESET button to the right of the HDMI input. Press and hold RESET ,after 10 seconds release the button and the encoder will restart automatically, factory default parameters will be initialized and the IP address reset to :
192.168.1.200
192.168.1.201
192.168.1.202
192.168.1.203
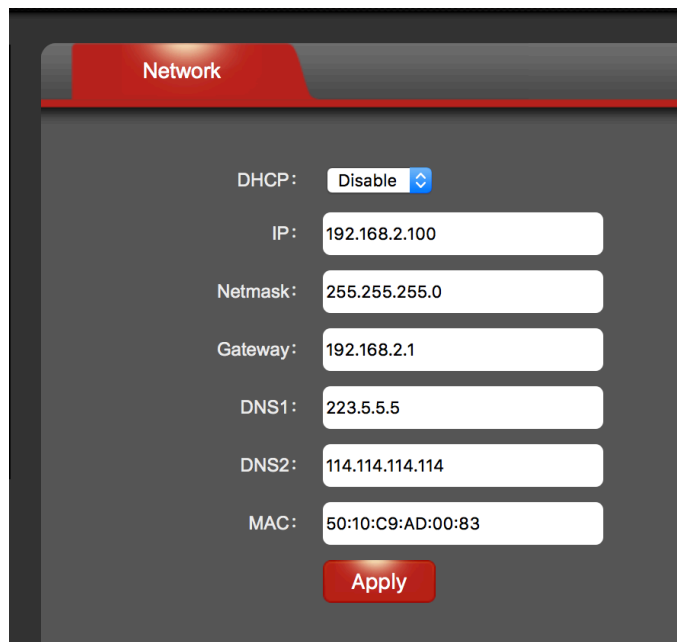
To change the IP address go to Network Settings and change the IP address to the required IP address . Once changed this will require a Reboot for the new IP address to be set.
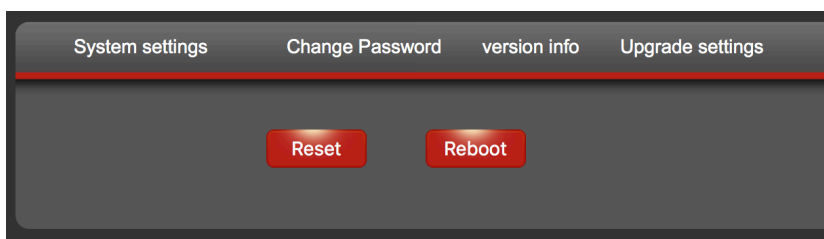
Either go to SYSTEM and click REBOOT or physically power down and power up the device

Network	
DHCP:	Disable
IP:	192.168.2.100
Netmask:	255.255.255.0
Gateway:	192.168.2.1
DNS1:	223.5.5.5
DNS2:	114.114.114.114
MAC:	50:10:C9:AD:00:83
	Apply

System settings	Change Password	version info	Upgrade settings
Reset	Reboot		

7.0 STATUS > HDMI / SDI STATUS

This page is an Information page only and details the main settings of the encoder
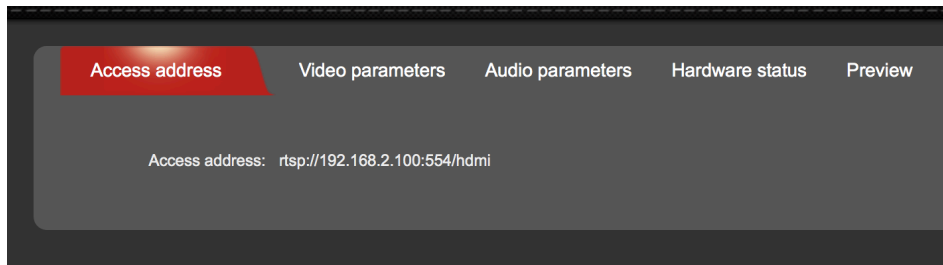
These settings can be changed further on in this manual.

Access Address: This is the main HTTP URL for the main stream.
 Note that the main URL is http://192.168.1.200:80/hdmi and secondary URL for 2nd Stream is http://192.168.1.200:80/hdmi_ext (we have used 192.168.1.200 in this example)

Copy this into VLC player to play this http stream.(VLC Network Stream / Open Stream)

Video Parameters: Will tell you what resolution and frame rate is set

Audio parameters: Will tell you what sample rate is set and number of channels (1/2)
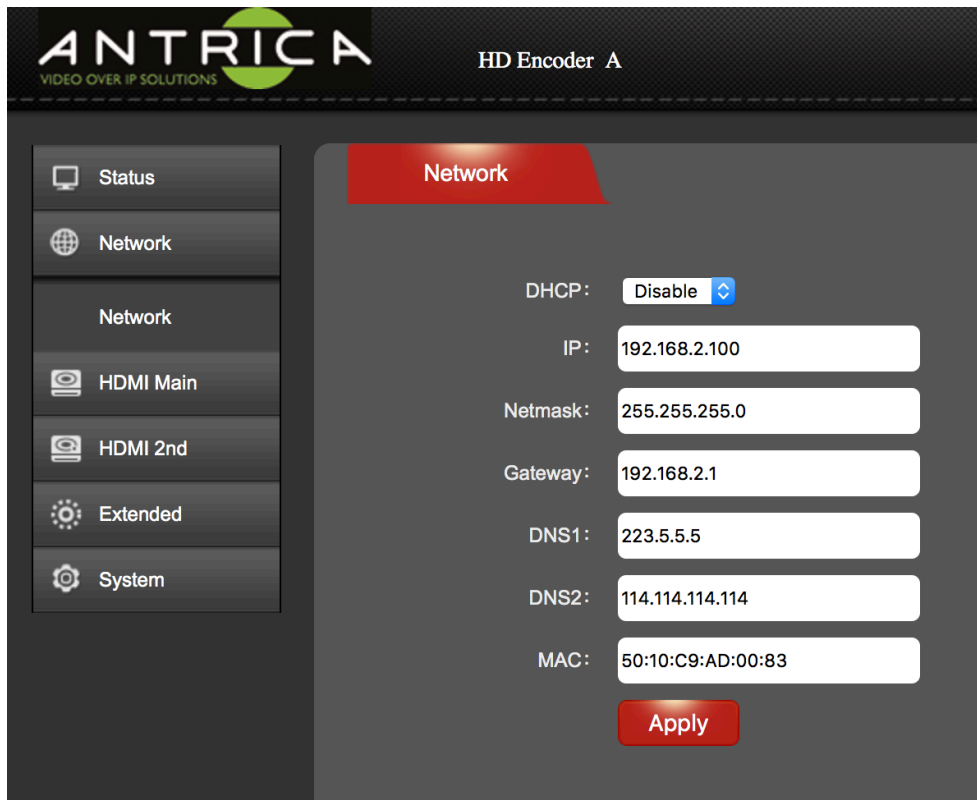
Hardware Status: XXXXXXXX

STATUS > 2ND STATUS

This section defines the status of the Secondary Stream exactly as above for the Primary Stream

8.0 NETWORK > NETWORK

 On this page you can set up the main Network Settings of the encoder:

DHCP: Either is Enabled or Disabled (Fixed IP address)

IP: Current IP address

Netmask: Current Network Mask 255.255.255.0 or 255.255.0.0 etc

Gateway: Router Gateway IP address

DNS: DNS Server IP address if used
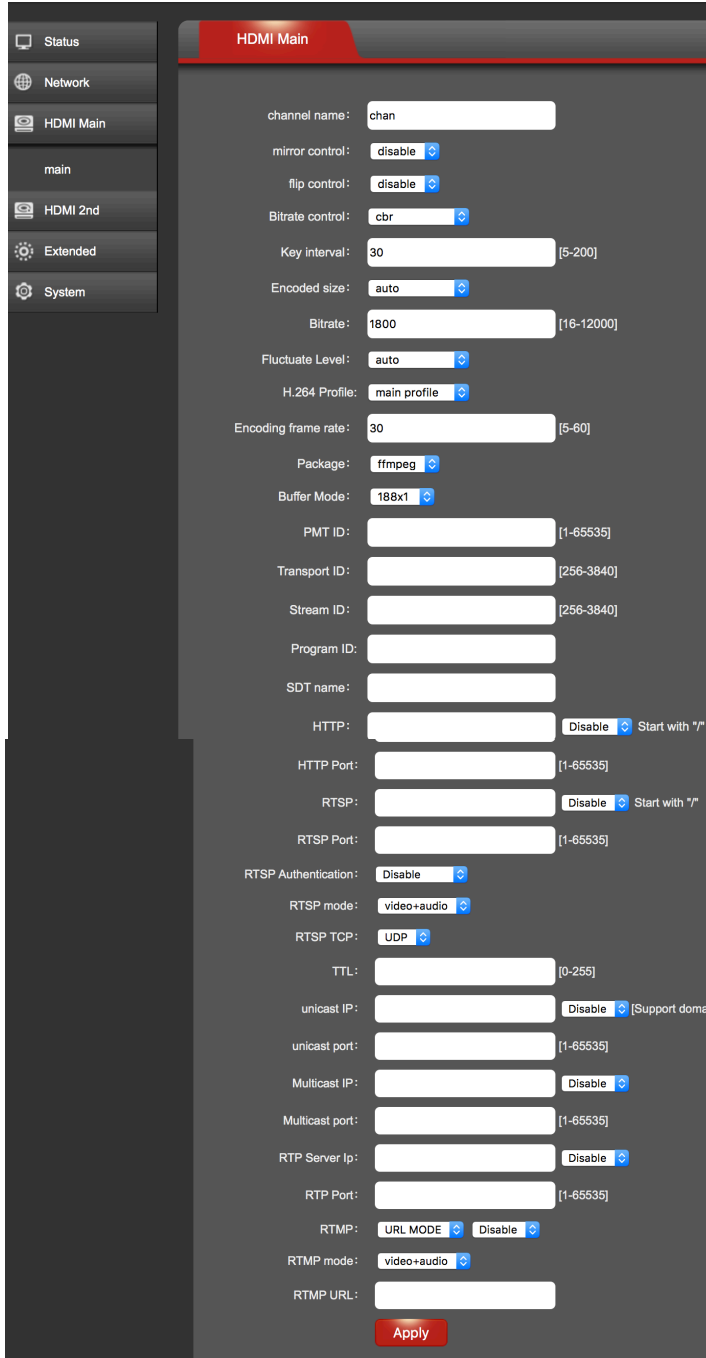
MAC: The MAC address of this encoder (unique address)

Click Apply after any changes

NOTE! When changing an IP address setting, a REBOOT is required for settings to be applied. This may affect all 4 encoders in this unit

9.0 HDMI / SDI MAIN > MAIN

 On this page you can see the settings as they apply to the HDMI input such as Streaming type, encoding settings such as bit rate frame rate etc. More details are described on the following 4 pages:

9.1 HDMI / SDI MAIN > MAIN (part 1 of 4)

Here you are able to change the main stream settings as they relate to H264 encoding.

Channel Name: The name given to this stream (chan) appears on web page only

Bitrate Control: CBR (Constant Bit Rate) or VBR (Variable Bit Rate)

Key Interval: This is the I frame interval or Key Frame . E.g 30= one I frame for every 30 P frames

Encoded Size: This is the Resolution of the stream output. In Auto the encoder will stream the same size resoltion as the HDMI input . Other settings allow the user to constrain the resolution to a fixed value e.g 1280 x720 for example.

Bitrate: this controls the encoders bit rate from 16kBits/sec to a max of 12 Mbits/second.

Fluctuate Level: This is the amount of spread of data bandwidth(bit rate) to accommodate fast changing video. Constraining the bandwidth may result in poorer video when scenes are changing fast.
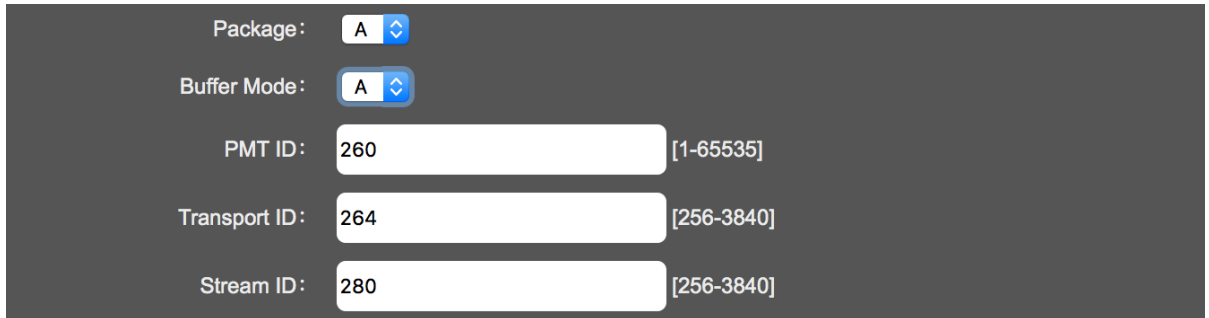
H.264 Level: Base, Main or High Profile encoding can be selected

Encoding Frame Rate: sets the stream frame rate regardless of input frame rate 5-60 fps range

Click Apply after any changes

9.2 HDMI / SDI MAIN > MAIN (part 2 of 4)

Here you can change settings to do with MPEG-TS streams and also adjust the encoder for optimum decoding using FFMPEG or VLC based players.

Package A or B: If using an FFMPEG based decoder use Package A , If using VLC based decoder use Package B.

Buffer Mode A or B : When using MPEG-TS streams : A=188*7 and b=188*7

PMT ID: When using MPEG-TS according to DVB rules the PMT PID can be set here.

Transport ID : This is the MPEG-TS Transport ID which can be set by the user.

Stream ID : This is the MPEG-TS Stream ID setting

Click Apply after any changes

9.3 HDMI / SDI MAIN > MAIN (part 3 of 4)

 These settings define HTTP and RTSP streaming parameters and enable or disable these streams.

HTTP Format: Enables or Disables the HTTP streaming format

HTTP Port: Set the port to be used for http streaming (usually port 80)

RTSP URL: Set the stream identifier used in RTSP streaming e.g rtsp://192.168.1.168:554**/hdmi** Stream identifier "hdmi" can be changed here.
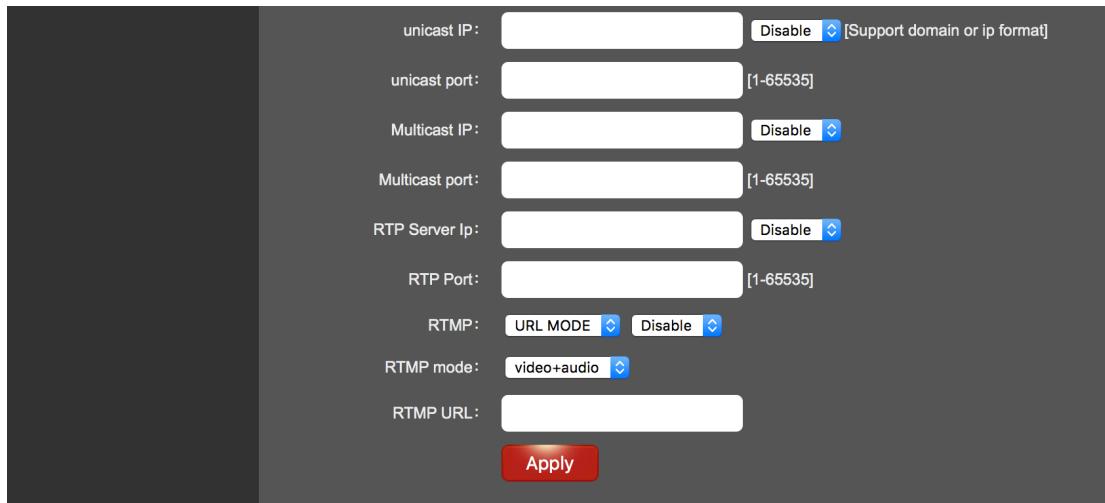
RTSP Port: change to the desired RTSP port: usually 554 but any port from 1-65535 can be chosen. Avoid conflicts with ports being used for other purposes.

RTSP TCP: You can choose to stream over TCP or UDP

Click Apply after any changes

9.4 HDMI / SDI MAIN > MAIN (part 4 of 4)

These settings define the MPEG-TS or RTMP stream settings

Unicast IP: This refers to MPEG-TS streaming , set up the IP address of the Receiving Decoder here
Unicast Port: This refers to MPEG-TS streaming in unicast mode, set the Port here
Multicast IP: This refers to MPEG-TS streaming in multicast mode. Set the Multicast IP address to be used here.
Multicast Port: This refers to MPEG-TS streaming , set the multicast port here.

The following section defines all RTMP streaming parameters to stream to you tube for example.

RTMP Server IP : The Server URL (Youtube) or public IP address here e.g **rtmp://video.mudu.tv/8eano/zvrut9** leave out the rtmp:// so enter video.mudu.tv (a.rtmp.youtube.com)

RTMP Server Port: Add a port number if known else defaults to 1935

RTMP User Name/ Password: Add user name password if used

RTMP app name: Add the app
RTMP stream name:
Example : rtmp://video.mudu.tv/8eano/zvrut9

       RTMP Server IP：   **video.mudu.tv**
       RTMP app name：   **8eano**
       RTMP stream name: **zvrut9**

Click Apply after any changes

10.0 HDMI / SDI 2nd > SECONDARY

On this page you can define parameters to do with a secondary stream with individual settings for the secondary stream. All settings are the same as primary stream but totally independent.
There may be some limitations when the primary stream is set to max resolution frame rate as CPU loading will be at its peak. Only one stream type can be selected as per the MAIN settings RTSP RTMP HTTP or MPEG-TS (Unicast and multicast section refers to MPEG-TS)

11.0 AUDIO EXPAND > AUDIO SETTING

These settings allow the user to adjust the audio characteristics of the encoder
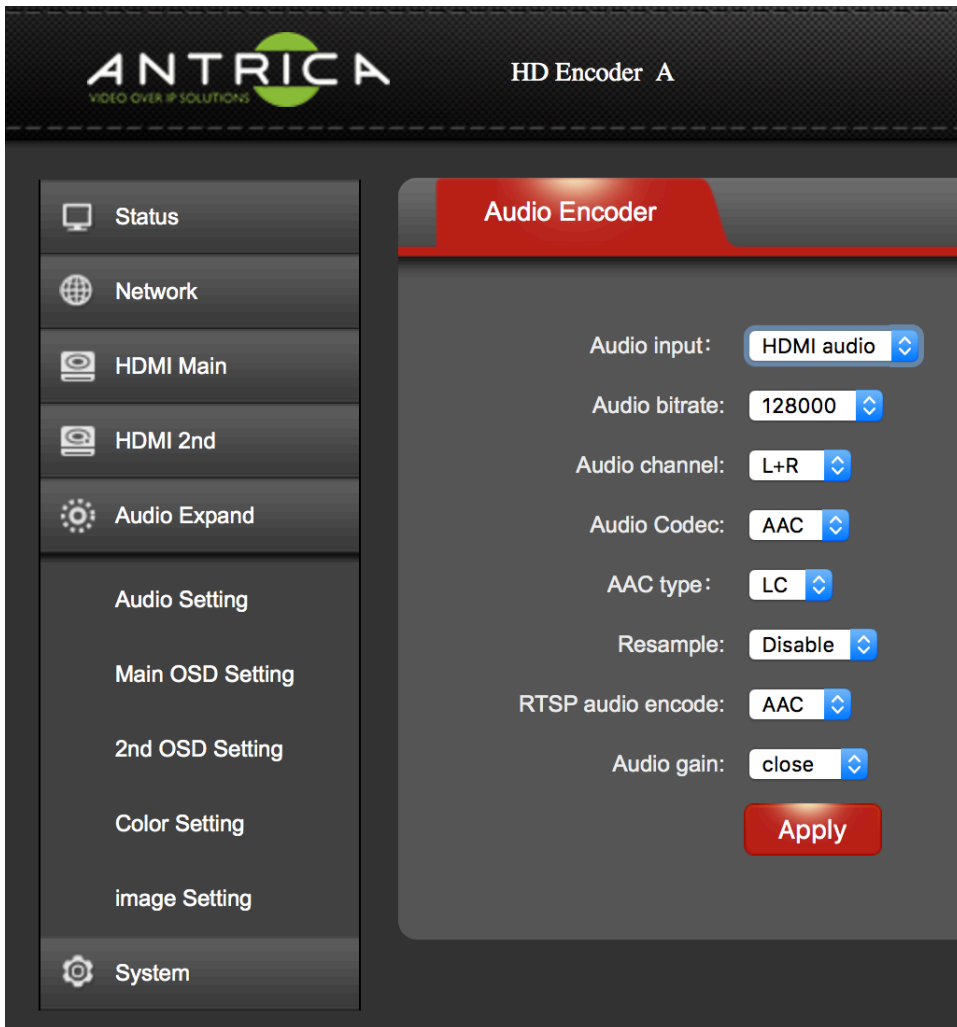
Audio Input: Select either line input (analogue jack) or embedded audio via HDMI input

Audio Bitrate: choose the bit rate for audio encoding

Audio Channel: Stereo Mono L or Mono R can be selected

Audio Codec: Choose AAC or MP3 (Note RTSP can be AAC or G711 PCM)

AAC Type : Choose LC or HE here

Resample: 32000 - 192000 resampling or disable.
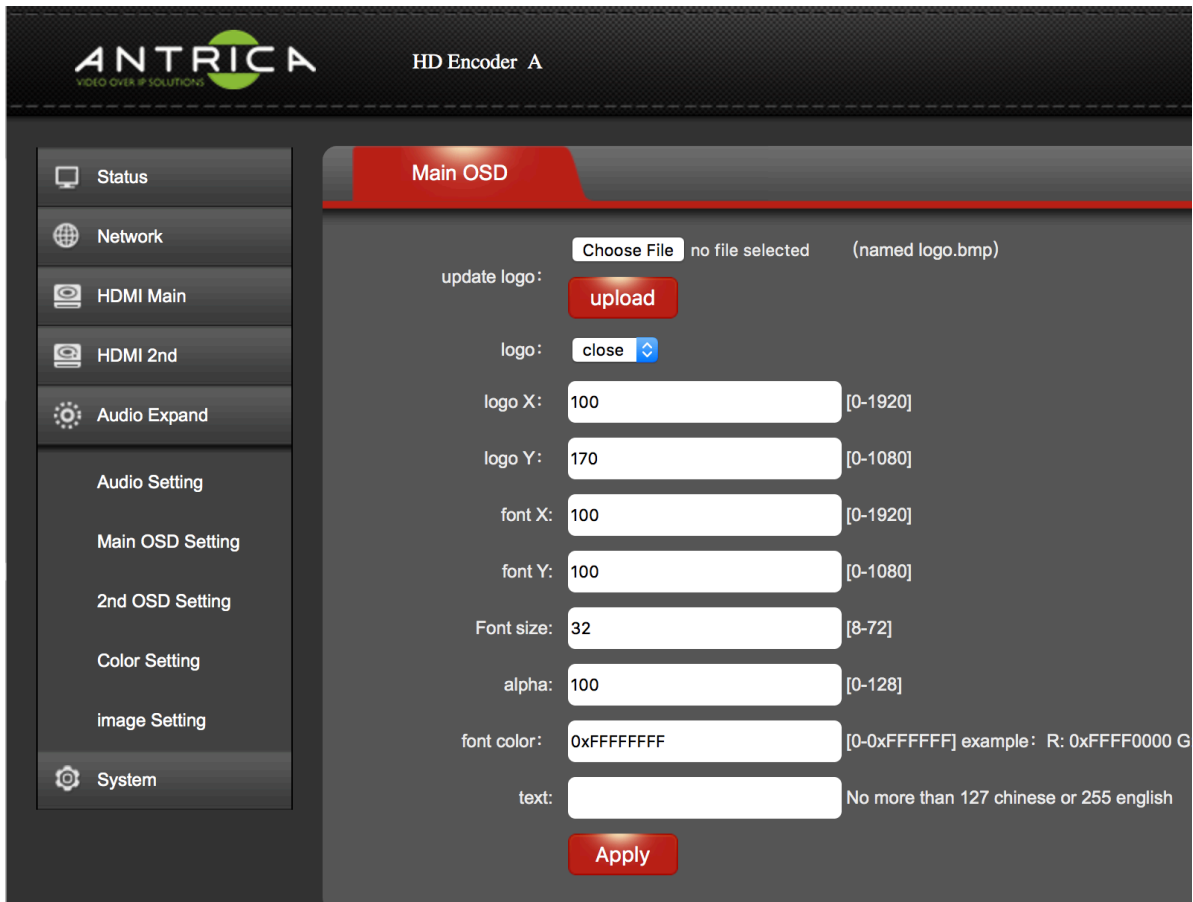
RTSP Audio: Select G711 (ONVIF) or AAC

Audio Gain: Adjust from +10 to -20dB

Click Apply after any changes

12.0 AUDIO EXPAND > MAIN OSD SETTING / 2ND OSD SETTING

These settings allow you to define the position colour and size of both text and a bitmap image burnt into the streaming video.The text and image will be displayed at the receiving end.

2nd OSD Setting: Select an On Screen Display to be burnt into the SECONDARY stream

Choose File for a LOGO to be uploaded in .bmp format.: Select a bmp file (rename it logo.bmp) and click upload.File size max is 1920 x 1080 2MB

Logo : Close or Open means show the logo (Open) or do not show (close)

Logo X & Y : location of the logo in pixels left to right (1920 max) and top to bottom (1080 max)

Font X & Y: Location of the OSD Text top to bottom left to right as per logo.

Font Size: Size of Font to be used

Alpha: This is the transparency of the logo , the lower the number the more transparent the logo will become.
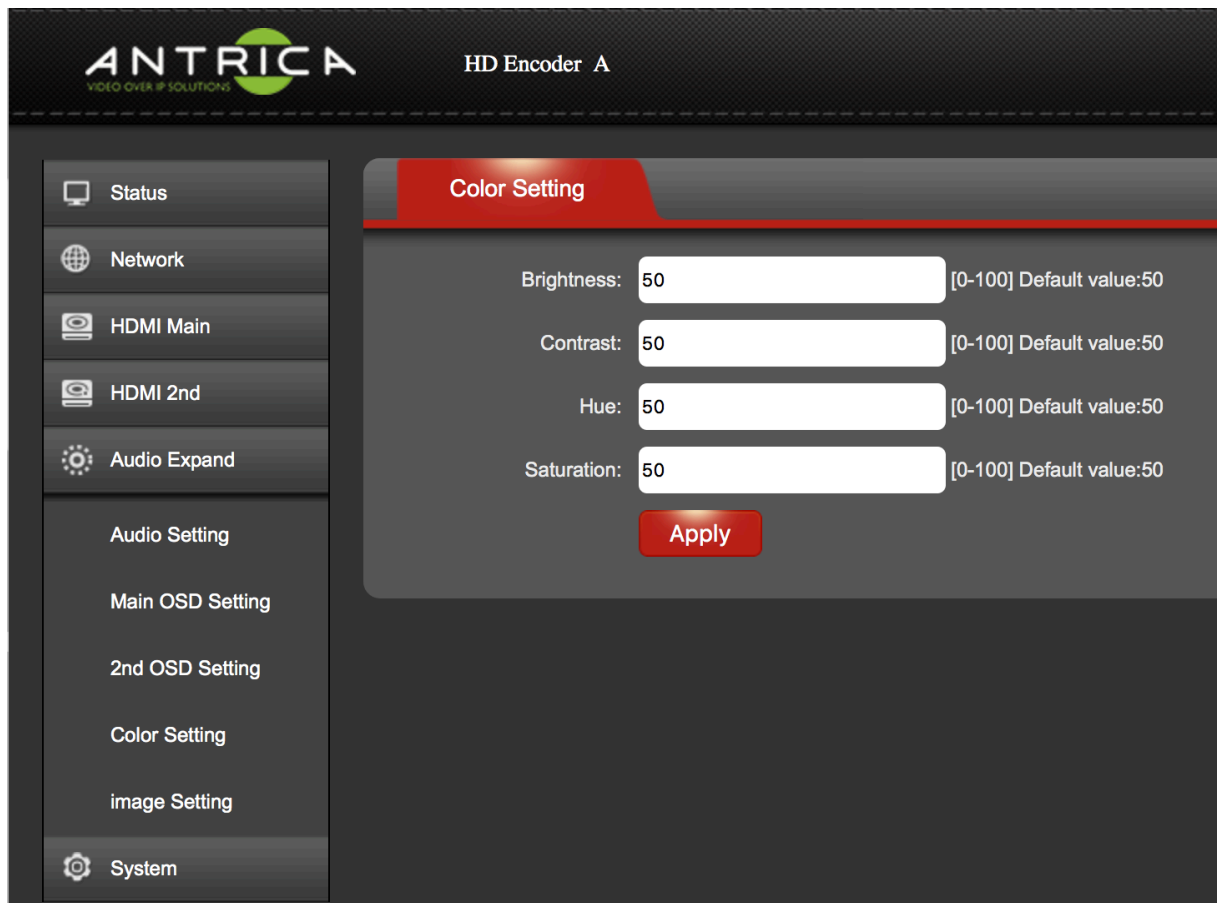
Font Colour: e.g 0xFFFFFFFF

Text: write the OSD text required here

Click Apply after any changes

13.0 AUDIO EXPAND > COLOUR SETTING

These settings allow the user to adjust Brightness, Contrast Hue and Saturation of the image being streamed

Brightness; Set from 0-100 (100 is maximum)

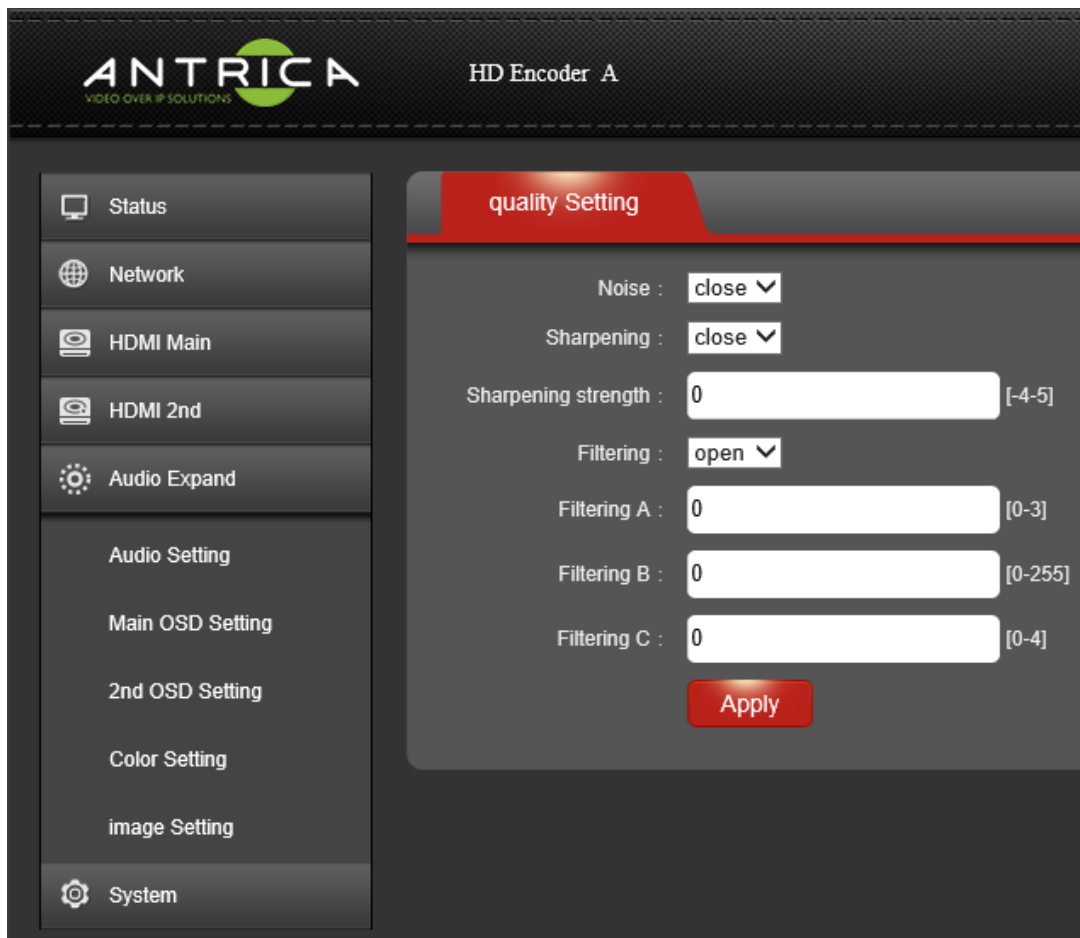**Contrast**; Set from 0-100 (100 is maximum)

Hue; Set from 0-100 (100 is maximum)

Saturation; Set from 0-100 (100 is maximum)

Click Apply after any changes

14.0 AUDIO EXPAND > IMAGE SETTING

These settings allow you to set up various filters to improve the image quality

NOISE: Enable or disable a noise filter for removing white noise from camera images typically found on night time images.

SHARPENING: Enables a sharpening filter for improving edge detail

SHARPENING STRENGTH: Allows the user to set up the level of sharpening

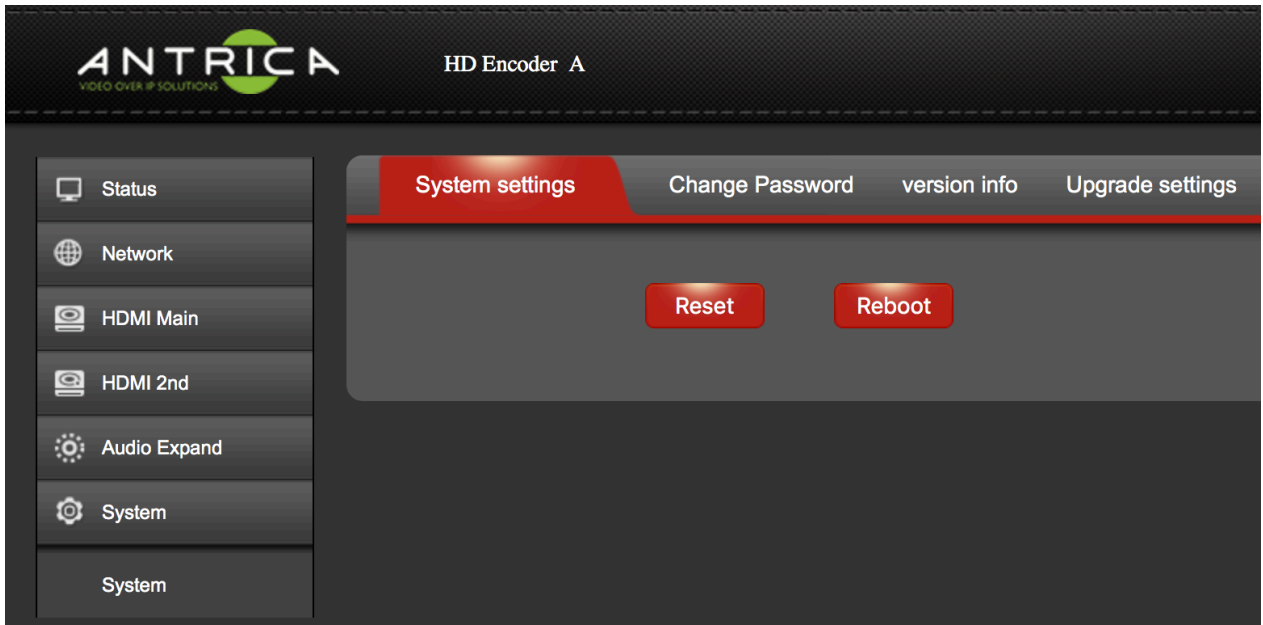FILTERING: OPEN /CLOSE Leave Open this feature is not supported currently

FILTER A: 0

FILTER B: 0

FILTER C: 0

Click Apply after any changes

15.0 SYSTEM

On this page you can Reboot the system, upgrade firmware and change user credentials like password.


SYSTEM > SYSTEM SETTINGS:
SYSTEM > SYSTEM SETTINGS > RESET will restore the unit to factory settings and default IP address of 192.168.1.200 and 192.168.1.201 and 192.168.1.202 and 192.168.1.203
SYSTEM > SYSTEM SETTINGS > REBOOT: Unit will be rebooted but no system settings will be changed.
SYSTEM > CHANGE PASSWORD: Type in the new password , currently user is : admin and password is also admin
SYSTEM > VERSION INFO: The current version of firmware running on this unit
SYSTEM > UPGRADE SETTINGS: Upgarde the firmware here
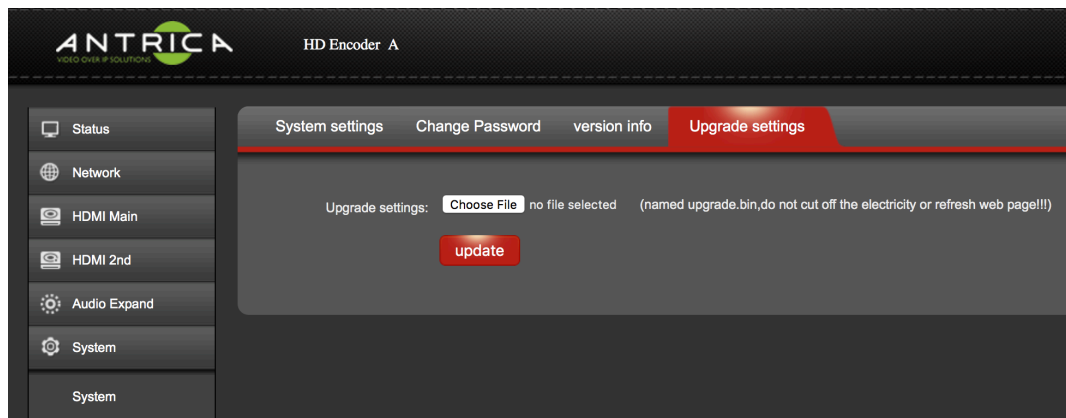
Choose the new .bin Firmware file from relevant product page on www.antrica.com under the downloads tab at the bottom of the relevant product page. or email support@antrica.com for the latest firmware.
ONCE YOU CLICK UPDATE DO NOT TURN OFF THE SYSTEM UNTIL THE UNIT REBOOTS OR WAIT 5 MINUTES BEFORE DEPOWERING. FAILURE TO FOLLOW THIS STEP WILL RESULT IN THE UNIT NO LONGER FUNCTIONING AND WILL NEED TO BE SENT BACK TO ANTRICA.