



ANT-4000E/EB

H.264 1080P60 HD VIDEO ENCODER



User Manual Ver. 5.0

FW version up to 203.35

Safety Precautions

**We appreciate you purchasing the ANT-4000E.
Before installing the product, please read the following carefully.**

- ◇ Make sure you turn off the power before installing the ANT-4000E.
- ◇ Do not install under the direct sunlight or in dusty areas.
- ◇ Make sure you use the product within the temperature and humidity specified in the specification.
- ◇ Do not operate the product in presence of vibration or strong magnetic fields.
- ◇ Do not put electrically conducting materials in the ventilation hole.
- ◇ Do not open the top cover of the product. It may cause a failure or electric shock from the components.
- ◇ To prevent the unit from overheating, make sure you keep the ventilation holes at the top least 10cm from any other object. Also allow air underneath the unit and do not obstruct vent holes
- ◇ Make sure the mains voltage is correct (220V/110V) before connecting the power adapter supplied in the box (12V DC output).
- ◇ Do not obstruct ventilation holes above and below the server box. Rubber feet are provided to allow air flow below the server case , in addition to outlet holes at the top of the case.



EC DECLARATION OF CONFORMITY



Name: Antrica (Division of Zilica Ltd)

Address: 8 Hasting Close, Bray, Berkshire, SL6 2DA

Declare under sole responsibility that the product

Product Name: Antrica 1080P60 Video & PC Encoder

Product Type / Model: ANT-4000E

Batch / Serial Number: EMC Unit

Item Number (s): One

Year in which CE mark was affixed: 2012

To which this declaration relates is in conformity with the following standards:

BS EN55103-1	2009	Emissions Standard for Audio, Video, Audio-Visual Equipment
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BS EN55103-2	2009	Immunity Standard for Audio, Video, Audio-Visual Equipment
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BS EN61000-4-2	1995	ESD Requirements
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BS EN61000-4-3	1995 + A1 + A2	Radiated Susceptibility
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BS EN61000-4-4	1995	Electrical Fast Transient Burst Requirement
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BS EN61000-4-5	1995 + A1 + A2	Surges Requirements
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BS EN61000-4-6	2007	Conducted Susceptibility
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BS EN61000-4-11	2004	Voltage Dips and Interruptions
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Following the provisions of EU EMC Directive 2004/108/EC

Bray, Berkshire, England, U.K.

(Place of Issue)

Leslie Litwin

(Name of Authorised Person)

18 January 2012

(Date of Issue)

(Signature of Authorised Person)

TEST REPORT NO: ETS/R1707/EN

ISSUE DATE: 18 JANUARY 2012



RoHS Certificate of Compliance
Antrica Products as of March 11, 2012

This document certifies that the Part Numbers listed in this document and manufactured by Antrica do not to the knowledge of the certifier contain the substances listed in the table below in concentrations exceeding the Maximum Control Value (MCV), and will be compliant as of the date listed.

Substance

- Lead 0.1% by weight (1000 ppm)
- Mercury 0.1% by weight (1000 ppm)
- Cadmium 0.01% by weight (100 ppm)
- Hexavalent Chromium 0.1% by weight (1000 ppm)
- Polybrominated Biphenyls (PBB) 0.1% by weight (1000 ppm)
- Polybrominated Diphenyl Ethers (PBDE) 0.1% by weight (1000 ppm)

Maximum Control Value

Products containing the substances listed in the table above, in concentrations below the MCV, are understood to be in compliance with Directive 2002/95/EC of the European Parliament and of the Council of 27 January 2003 on the restriction of the use of certain hazardous substances in electrical and electronics equipment (RoHS Directive) in accordance with the definitions set forth in the directives.

If you require any further clarification on above matter, please do not hesitate to write to us or call us. +44 1628 626098 esales@antrica.com

Product List

- ANT-4000E and Derivates
- ANT-4000D and Derivates
- ANT-3300
- ANT-320000A
- ANT-320000AS
- ANT-3400

Signed on behalf of Antrica

Leslie Litwin Managing Director Dated 11 March 2012
Antrica (Division of Zilco Ltd) 8 Hasting Close, Bray, Berks, SL6 2DA United Kingdom



REACH Certificate of Compliance
Antrica Products as of March 11, 2012

Antrica does not currently either manufacture or import any chemical substances into the EU on their own or in articles (products) in quantities of 1 ton or more per year. In addition, Antrica products do not contain chemical substances intended to be released during the normal and reasonably foreseeable conditions of the product's use as defined by the REACH regulation and existing guidance.

The "Products" Video Encoders & Decoders identified below are in compliance with European Union Regulation 1907/2006 on the Registration Evaluation Authorization and Restriction of Chemicals (REACH). Based on information provided by our suppliers, Antrica designates the Video Encoders and Decoders listed below as REACH compliant for orders based on or after the date of this certification. REACH compliant means that:

- Our products, Video Encoders and Decoders, are categorized as articles under the REACH Regulations.
- It is not intended that our Video Encoders and Decoders release substances during normal and reasonably foreseeable conditions of use.
- Regarding the Substances of Very High Concern (SVHC) updated candidate list recently released by the European Chemicals Agency on December 15, 2010, Antrica products do not contain more than 0.1% by weight per article of any substance on the SVHC candidate list.

We will continue to monitor the status of the candidate list as part of our on-going compliance activities, including the possible need under Article 33 of REACH to inform product recipients and consumers if an article contains more than 0.1% by weight per article of any substance that is added to the SVHC candidate list in the future.

If you require any further clarification on above matter, please do not hesitate to write to us or call us. +44 1628 626098 e:sales@antrica.com

Product List

ANT-4000E and Derivates
ANT-4000D and Derivates
ANT-3300
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ANT-320000AS
ANT-3400

Signed on behalf of Antrica

Leslie Litwin Managing Director Dated 11 March 2012
Antrica (Division of Zilica Ltd) 8 Hasting Close, Bray, Wick, SL6 2DA United Kingdom


**FEDERAL COMMUNICATIONS COMMISSION (F.C.C.)
DECLARATION OF CONFORMITY**

Name and Address of Manufacturer Antrica (Division of Zilica Ltd) 8 Hasting Close Bray Berkshire SL6 2DA Tel. No. 01628 626098	Name and Address of Responsible Party (must be in USA) Tel. No.
Trade Name:	Antrica (Division of Zilica Ltd)
Product Name:	Antrica 1080P60 Video & PC Encoder
Product Model Number:	ANT-4000E
<p>This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:</p> <ul style="list-style-type: none"> • Reorient or relocate the receiving antenna. • Increase the separation between the equipment and receiver. • Connect the equipment into an outlet on a circuit different from that to which the receiver is connected. • Consult the dealer or an experienced radio/TV technician for help. <p>You are cautioned that changes or modifications not expressly approved by the party responsible for compliance could void your authority to operate the equipment.</p>	
Bray, Berkshire, England, U.K. <hr/> (Place of Issue)	Leslie Litwin <hr/> (Name of Authorized Person)
18 January 2012 <hr/> (Date of Issue)	 <hr/> (Signature of Authorized Person)
TEST REPORT NO: ETS/R1708/FCC	ISSUE DATE: 18 JANUARY 2012

中国大陆 RoHS

Chinese Mainland RoHS

根据中国大陆《电子信息产品污染控制管理办法》（也称为中国大陆RoHS），以下部分列出了Antrica’ 产品中可能包含的有毒和/或有害物质的名称和含量。中国大陆RoHS指令包含在中国信息产业部MCV标准：“电子信息产品中有毒物质的限量要求”中。

According to the “China Administration on Control of Pollution Caused by Electronic Information Products” (Also called RoHS of Chinese Mainland), the table below lists the names and contents of toxic and/or hazardous substances that Antrica’s product may contain. The RoHS of Chinese Mainland is included in the MCV standard of the Ministry of Information Industry of China, in the section “Limit Requirements of toxic substances in Electronic Information Products”.

零件项目(□□) Component Name	有毒有害物质或元素 Hazardous Substances or Elements					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价 铬 (Cr6+)	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
印制电路配件 Printed Circuit Assemblies	X	O	O	O	O	O
外接电(□) 缆 External Cables	O	O	O	O	O	O
底架 Chassis	O	O	O	O	O	O
电源供应器 Power Supply Unit	X	O	O	O	O	O
文件说明书 Paper Manuals	O	O	O	O	O	O
光盘说明书 CD Manual	O	O	O	O	O	O
装置配件 Installation kit	O	O	O	O	O	O
<p>O: 表示该有毒有害物质在该部件所有均质材料中的含量均在 SJ/T 11363-2006 标准规定的限量要求以下。 O: Indicates that this toxic or hazardous substance contained in all of the homogeneous materials for this part is below the limit requirement in SJ/T11363-2006.</p> <p>X: 表示该有毒有害物质至少在该部件的某一均质材料中的含量超出 SJ/T 11363-2006 标准规定的限量要求。 X: Indicates that this toxic or hazardous substance contained in at least one of the homogeneous materials used for this part is above the limit requirement in SJ/T11363-2006.</p>						

在中国大陆销售的相应电子信息产品（EIP）都必须遵照中国大陆《电子信息产品污染控制标识要求》标准贴上环保使用期限（EFUP）标签。Antrica产品所采用的EFUP标签（请参阅实例，徽标内部的编号使用于制定产品）基于中国大陆的《电子信息产品环保使用期限通则》标准。

All Electronic Information Products (EIP) that are sold within Chinese Mainland must comply with the “Electronic Information Products Pollution Control Labeling Standard” of Chinese Mainland, marked with the Environmental Friendly Use Period (EFUP) logo. The number inside the EFUP logo that Antrica uses (please refer to the photo) is based on the “Standard of Electronic Information Products Environmental Friendly Use Period” of Chinese Mainland.



Additional Table Rows

In the following table additional row elements have been collected, which might be applicable for certain products. Please add them to the above table as needed.

零件项目(□□) Component Name	有毒有害物质或元素 Hazardous Substances or Elements					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价 铬 (Cr6+)	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
印制电路配件 Printed Circuit Assemblies	X	O	O	O	O	O
印制电路主要配件 Main Printed Circuit Assembly						
插入式印制电路配件 Plug in Printed Circuit Assembly						
背板式印制电路配件 Backplane Printed Circuit Assembly						
显示制电路装配 Display Printed Circuit Assembly						
插入式插件 Plug assembly						
外接电(□) 缆 External Cables						
内部线路 Internal wiring						
接线器 Wiring looms						
散热片(□) Heatsinks						
底架 Chassis						
外壳 Enclosure						
金属□□ Metal Enclosure						

塑胶□□ Plastic Enclosure						
螺帽,螺钉(□),螺旋(□),垫圈, □□件 Nuts, bolts, screws, washers, Fasteners						
电源供应器 Power Supply Unit						
风扇 Fan						
键盘 Keyboard						
显示(□) Display						
正面(□)面板 Front panel						
金属制品[制造] Metalwork						
塑胶制品[制造] Plastic work						
电池(组) Batteries						
文件说明书 Paper Manuals						
光盘说明书 CD Manual						
装置配件 Installation kit						
<p>O: 表示该有毒有害物质在该部件所有均质材料中的含量均在 SJ/T 11363-2006 标准规定的限量要求以下。 O: Indicates that this toxic or hazardous substance contained in all of the homogeneous materials for this part is below the limit requirement in SJ/T11363-2006.</p> <p>X: 表示该有毒有害物质至少在该部件的某一均质材料中的含量超出 SJ/T 11363-2006 标准规定的限量要求。 X: Indicates that this toxic or hazardous substance contained in at least one of the homogeneous materials used for this part is above the limit requirement in SJ/T11363-2006.</p>						



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Introduction

1. About this Manual

This User Manual provides information on operating and managing the ANT-4000E in a number of video systems. The Manual includes instructions for installation, operation and configuration of the ANT-4000E as well as troubleshooting. The ANT-4000E will be used as a generic part number and where options are mentioned this will be referred to as the ANT-4000EX where X is used to identify the options part number

2. Features

ANT-4000E is a Full HD 1920 x1080 at 60 frames/second encoder designed to be used for various streaming applications where high quality video or PC output needs to be sent over an IP network at low data rates. Video resolutions from PAL and NTSC up to 1080P60 are supported as well as stereo audio. In combination with the ANT-4000D Decoder unit the ANT-4000E can additionally stream video at extremely low latencies (delay) typically 80mS. The ANT-4000E provides a number of different video and audio interfaces together with a general purpose virtual 2 way serial cable interface. Network transmission is via a 10/100 ethernet port. Power is supplied by the 240/110V AC to 12Volt DC converter supplied.

□ Video

- State-of- the art Compression Algorithm, H.264 Baseline level 4.2
- 24 bit RGB + YUV (4:2:2)
- Low latency encode decode typ. 80mS (when used with ANT-4000D)
- Single stream + Stereo Audio
- Video and PC interfaces supported YCbCr & RGB
- HDMI v1.3 (DVI-D) VGA, Composite Video and Component video supported
- YPbPr Component plus CVBS composite video
- Compression and Decompression with multiple Resolution options
 - : 1920x1080i60/P60, 1280x720P60, 720x480i60/P60
 - : WSXGA + (1680 x1050), SXGA (1280x1024) WXGA(1280x800)
 - XGA (1024x768) SVGA (800x600) , VGA (640x480) see table for more
- Wide Range of Video Transmission Rates : 100kbps ~ 12Mbps
- Various Transmission Modes : I frame GOP mode, Slice Mode (I frame in P frames)
- HDCP compliant v1.1

❑ **Audio**

- 2x HDMI audio supported - Compressed or uncompressed
- Stereo Audio one way 44.1kHz / 48kHz , 16 bit ADC.
- RCA stereo jacks and mini stereo headphone jacks

❑ **Network**

- Static IP & Dynamic IP (DHCP) Support 10/100 ethernet
- One to One Connection & One to Multiple Connection
- Multi-Casting and Simulcast modes
- Various Protocols supported : TCP/IP, UDP, Multicast, DHCP, HTTP, RTSP,
- RTSP , One to one proprietary low latency plus MPEG-TS (Video only)
- PLC modem connection

❑ **Serial Data**

- Two serial ports : RX and TX bi directional data
- 3.3v TTL serial data (external level shift for RS232 required)
- Data pass-through mode : Serial data communication between Encoder - Decoder
- Virtual serial cable between encoder and decoder, Bi Directional.

❑ **USB**

- Engineering applications only

❑ **User Interface**

- Internet Explorer for system setup
- Firmware upgrade via PC command interface (simple)
- OSD system status if required

❑ **Operating conditions**

- 0 to +40 ambient operating temp

❑ **Reliability** Reliable embedded system

- System recovery utilizing dual watch-dog functions
- System reset switch

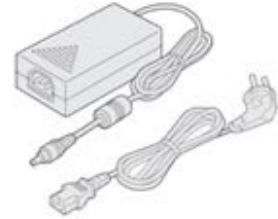
3. Contents of Box



ANT-4000E



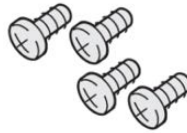
User Manual (CD)



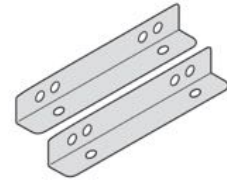
Power adapter and Cable



Software CD



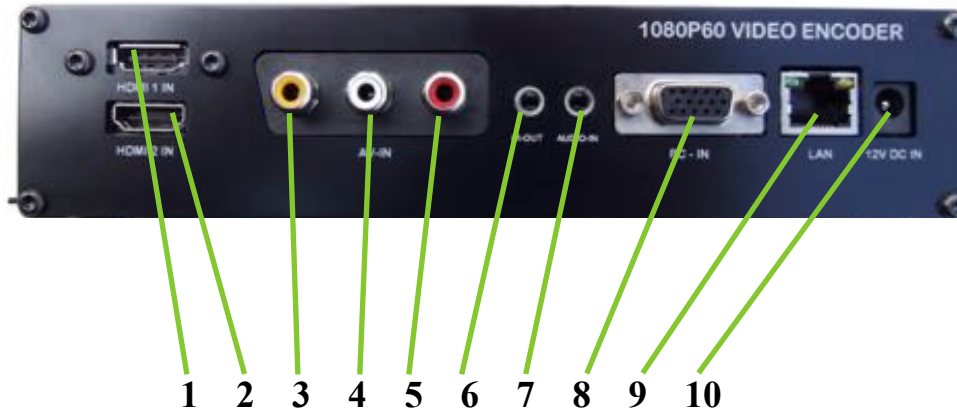
**Screws
(fitted)**



**Brackets
(fitted)**

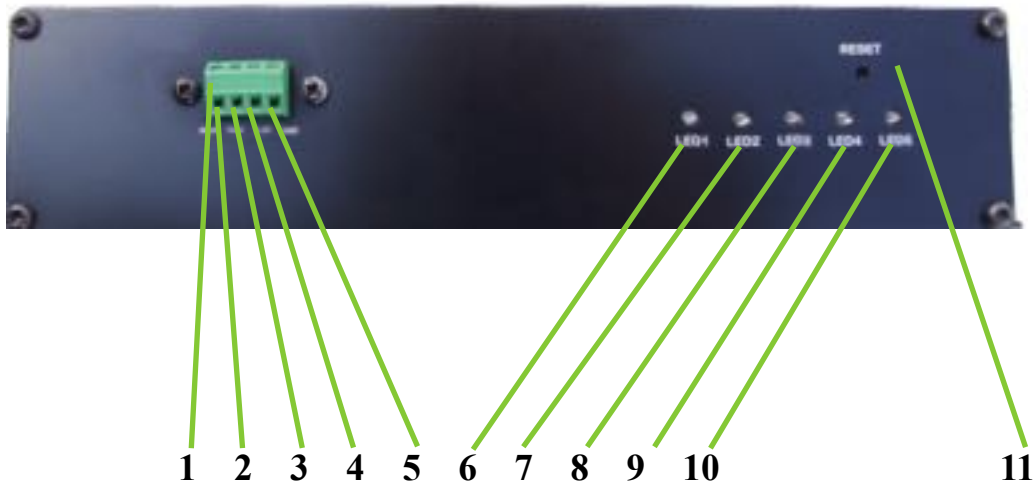
4. Panel Layout

□ Front View



No.	Parts	Function
1	HDMI 1	HDMI input number 1
2	HDMI 2	HDMI input number 2
3	CVBS Video	Composite Video Input RCA
4	Audio L	Audio input left
5	Audio R	Audio input Right
6	IR Out	Not used
7	Audio Jack	Stereo audio input jack
8	PC-IN	VGA input for PC interface
9	LAN	10/100 LAN RJ45 interface
10	12V DC	12 Volt DC input

□ Rear View



No.	Part	Function
1	Serial	Two way serial connector
2	Rx	Serial Data Rx output
3	Tx	Serial Data Tx input
4	3.3V	3.3 volts DC out
5	Ground	Ground
6	LED1	Power indicator LED1=On= 12v Power On
7	LED2	System booting (blinking), Booted (On)
8	LED3	Connected to Client On=Decoder Blink=IE
9	LED4	Video streaming On=Video streaming
10	LED5	selected video port has a valid input signal
11	Reset switch	System reset to factory default/ IP address

5.Quick Start Guide

The ANT-4000E is a high quality 1080P60 maximum video and audio encoder with virtual serial connections. ANT-4000E compresses Video and Audio using H264 standards and streams this compressed signal over an IP network via Ethernet. Using an ANT-4000D decoder unit will allow the IP network stream to be decoded and converted back to Video plus Audio. Alternatively a Software decoder such as VLC player may be used to decode the IP network stream generated by the ANT-4000E

❑ Quick Start - Power up and streaming video

The ANT-4000E comes with a 12 volt power converter (220/240/110V AC to 12 VDC) plus a kettle lead for connection to the mains supply. Plug the Kettle lead into the 12 volt supply and the other end of the kettle lead into the local mains AC supply.

Remove the ANT-4000E from its packaging and connect the 12Volt DC plug into the 12 socket of the ANT-4000E. 5x LEDs will gradually change state as the unit boots into its standby/ ready condition. (See LED description for exact meaning of LEDs) All 5 LEDS will be lit when the unit is streaming to a decoder

Connect a suitable video source via one of the external Video and Audio inputs provided on the ANT-4000E. **(Note factory default is HDMI 1 input)** Video resolutions can be from PAL, NTSC up to 1920 x1080 at 60 Hz or frames/second. A full list of supported video formats is described later in this manual. (HDMI , CVBS, VGA and Component (using a Component to VGA dongle) . DVI-D may be connected using a DVI-D to HDMI dongle.

If you are using an ANT-4000D decoder unit connect this in a similar way as described above except Video and Audio connections will be Outputs instead of inputs .

ANT-4000E + ANT4000D are shipped with the following defaults:

- ***Encoder will communicate / stream to the Decoder via LAN***
- ***HDMI Port 1 (upper most input) on ANT-4000E is input and HDMI output on ANT-4000D***
- ***IP addresses are 192.168.0.151 (E) and 192.168.0.152 (D)***
- ***Connection via LAN will allow video from the ANT-4000E to be streamed to the ANT-4000D without any changes being made to the settings. Customers with both units should test this configuration first. This is the low latency mode proprietary mode.***

❑ Quick Start- Connecting a web browser to adjust/ change settings.

The ANT-4000E/D has a web interface for setting up all parameters , network functions etc. Currently you must use Internet Explorer for this function.

Having connected the ANT-4000E to a video/audio source and 12vDC next connect the ethernet port to an ethernet network/ switch using an RJ45 ethernet cable (not supplied).

Connect a laptop or PC to the same network that the ANT-4000E is connected to.

ANT-4000E Factory default IP address is 192.168.0.151 (ANT-4000D is 192.168.0.152)

Internet Explorer will display the System Setup page first, you may then browse and chage other pages and settings

5.Quick Start Guide- Continued

❑ Quick Start- Streaming video to VLC player using RTSP streaming.

The ANT-4000E can be set to stream video to a software decoder such as VLC player. There are two modes supported :

- a) RTSP video plus Audio
- b) MPEG-TS mode Video Only!

To test Software decoding using VLC player please follow these instructions:

- 1) Browse to the ANT-4000E IP address using Internet Explorer. Active X is used to control and change settings so your browser may ask if it is safe to install Active X control.
- 2) On the Streaming Control page select the RTSP SERVER pull down menu and select ON. Then press SUBMIT to save these setting changes to RAM
- 3) If you wish to save this configuration to FLASH memory so that after next power up these settings will be default, go to SAVE SETTINGS and click SAVE then confirm.
- 4) Open VLC player and in Network type : **rtsp://192.168.0.151:8054/stream** (where 192.168.0.151 is the IP address of the ANT-4000E encoder)
- 5) VLC will now decode the incoming rtsp stream from the ANT-4000E. Please use VLC version 1.1.11 or later

❑ Quick Start- Streaming video to VLC player/ Set top box using MPEG-Transport Stream

The ANT-4000E can stream using MPEG Transport Stream based on H264.

Connect the ANT-4000E to a network and a PC/Laptop with VLC player.

In the SYSTEMS SETTING PAGE of the ANT-4000E you must set the Peer IP address to be the same as the PC which is running VLC. This will effectively be Peer to Peer mode using MPEG Transport Stream via UDP. Port 1234 is pre set

Now in the ANT-4000E Streaming Control page you must enable STREAMING and Encapsulation should be MPEG TS via UDP (TS2UDP)

If you set P2P mode in the ANT-4000E settings you will need to open a network page on VLC and type **udp://@:1234** , this will open a unicast MPEG TS stream

If you set multicast on the ANT-4000E System Settings page then in VLC you should type:

udp://@227.2.2.7:1234 (where 227.2.2.7 is the multicast IP address you set in the ANT-4000E systems setting page. Replace this IP address with whatever multicast IP address you set in the ANT-4000E Systems setting

Please Note currently Video Only is supported with MPEG TS mode.

INSTALLATION

6. Connecting Video

❑ Encoder System

● Connecting Video

The ANT-4000E has multiple inputs which can be used to input video

- **HDMI 1 and HDMI 2:** These inputs support video plus audio but must be selected in the Web Setup (See System Configuration)
- **Composite CVBS:** Composite video input in the form of an RCA socket (Yellow) together with Audio Left and Right RCA sockets (White and Red)
- **VGA D-Sub:** Supports VGA analogue inputs from a PC , audio is input separately via the stereo Jack socket or RCA socket above.
- **DVI-D:** Supported via one of the HDMI inputs using an external DVI to HDMI dongle (not supplied)
- **Component Video:** Supported via the VGA input using an external Component Video to VGA converter dongle. Supplied as an option

7. Connecting Audio

● Connecting Audio.

The ANT-4000E has two methods to connect Audio

- Via the stereo 3.5mm Jack socket
- Via the RCA stereo left and right input sockets
- Audio signal is at line level, therefore, a microphone or speaker with an amplification function should be used

8. Connecting Network & Serial Ports

- **Connecting the Network Cable**

The ANT-4000E has a 10/100 RJ45 Ethernet port for connection to a network or external wireless device

- **Connecting the Serial Ports**

The ANT-4000E has a two way serial connection capability via a "Virtual Cable" function. This allows two way serial data to be sent/received if the ANT-4000E is paired up with an ANT-4000D decoder unit. 3.3V data may be sent bi-directionally for control and command applications. Serial data is sent and is subject to the serial port configurations (See System setup- Serial Ports)

- Serial Data Tx
- Serial Data Rx
- +3.3V DC
- Earth

9. Powering Up & LED Status

Connect the 12V power converter to 110/240 V AC supply with the power lead provided. Connect the 12V connector into the front panel of the ANT-4000E marked 12V DC Input.

1) Observe ALL LEDs are illuminated and flashing momentarily, this is to check all LEDs are working



2) LED1: This indicates if 12V DC power is connected

ON= Power On, OFF =Power OFF, Flashing= test mode on power up

3) LED2 : Booting Status of the onboard CPU

Flashing= Booting , On= Booted (LED3/4/5 will flash)

4) LED3: Client Connected

Flashing: No Client connected (decoder) , On= Client decoder Connected

5) LED4: Video Stream Data:

On= Video data is streaming, Flashing = Streaming is Off.

6) LED5: Video Input Connected

On= Video is connected to the selected input and identified as valid ,flashing= No Video

If the Encoder is working correctly in a typical system and connected to decoder and is streaming video then ALL LEDs will be ON.

Web Based System Setup

10. System Configuration

This Page is the default Web interface when connecting to the ANT-4000E via Internet Explorer.

Type in the default IP address of the ANT-4000E into Internet Explorer 192.168.0.151 or if this has been changed your new modified IP address. Hit [ENTER] and the System Configuration screen will appear.

This page allows changes to the Network settings , Peer IP (the Decoder IP address you wish to connect to, Multicast IP address to be used and P2P (peer to peer mode) or multicast can be set.

The screenshot shows the 'System Configuration' page in a Microsoft Internet Explorer browser window. The page title is 'WBI(192.168.0.151) - Microsoft Internet Explorer'. The address bar shows 'http://192.168.0.151/home.asp'. The page content includes a navigation menu on the left with 'System Configuration' selected. The main content area has the following fields and controls:

- Ethernet IP:** 192.168.0.151 (Callout: IP Address of Encoder (Fixed))
- Ethernet NetMask:** 255.255.255.0
- Ethernet MAC:** 00:26:90:02:1B:B5
- Gateway:** 192.168.0.1 (Callout: Gateway of Network)
- Streaming Mode:** P2P (Callout: Select Peer 2 Peer mode or multicast one to many mode. P2P uses Peer IP address above, Mcast uses Mcast IP address)
- Group IP(multicast):** 227.2.2.7 (Callout: Multicast IP address)
- Peer IP(lan):** 192.168.0.152 (Callout: IP Address of Decoder)

Buttons at the bottom include 'Submit', 'Refresh', and 'LedTest'. A callout for 'Submit' explains: 'Submit changes: changes will be saved when this button pressed. However if system is rebooted changes will be lost unless **also saved** in "Save Changes" menu on left menu bar.' A callout for 'Refresh' says: 'Refresh this web page.' A callout for 'LedTest' says: 'Click to cause LED3 to Flash To identify which Encoder is being setup'.

A red dashed box highlights the 'Streaming Mode' dropdown menu, which is currently set to 'P2P'. The dropdown options are 'P2P' and 'Multicast'.

11. Serial Port Configuration ●

The Serial Port is a bi directional “Virtual” Serial cable using TTL 3.3v signals. RS232 and RS485 can be sent bi-directionally using an external RS232/485 to TTL converter. This page allows setting of the serial port baud rates and other characteristics. Serial interface consists of Earth,3.6V , RX Data and Tx Data

Navigation

- System Configuration
- Serial Port Configuration
- S/W Images
- Streaming Control
- Save Changes
- Reboot System

Decoder Stream Control

Baudrate: 9600
Stop Bit: 1
Character Size: CS8
Parity: DISABLE
Flow Control: None

Submit Refresh

Set Serial data Baud Rate 1200-11520

Stop Bit 1-2

Character size CS5-CS8

Parity Odd Even Disable

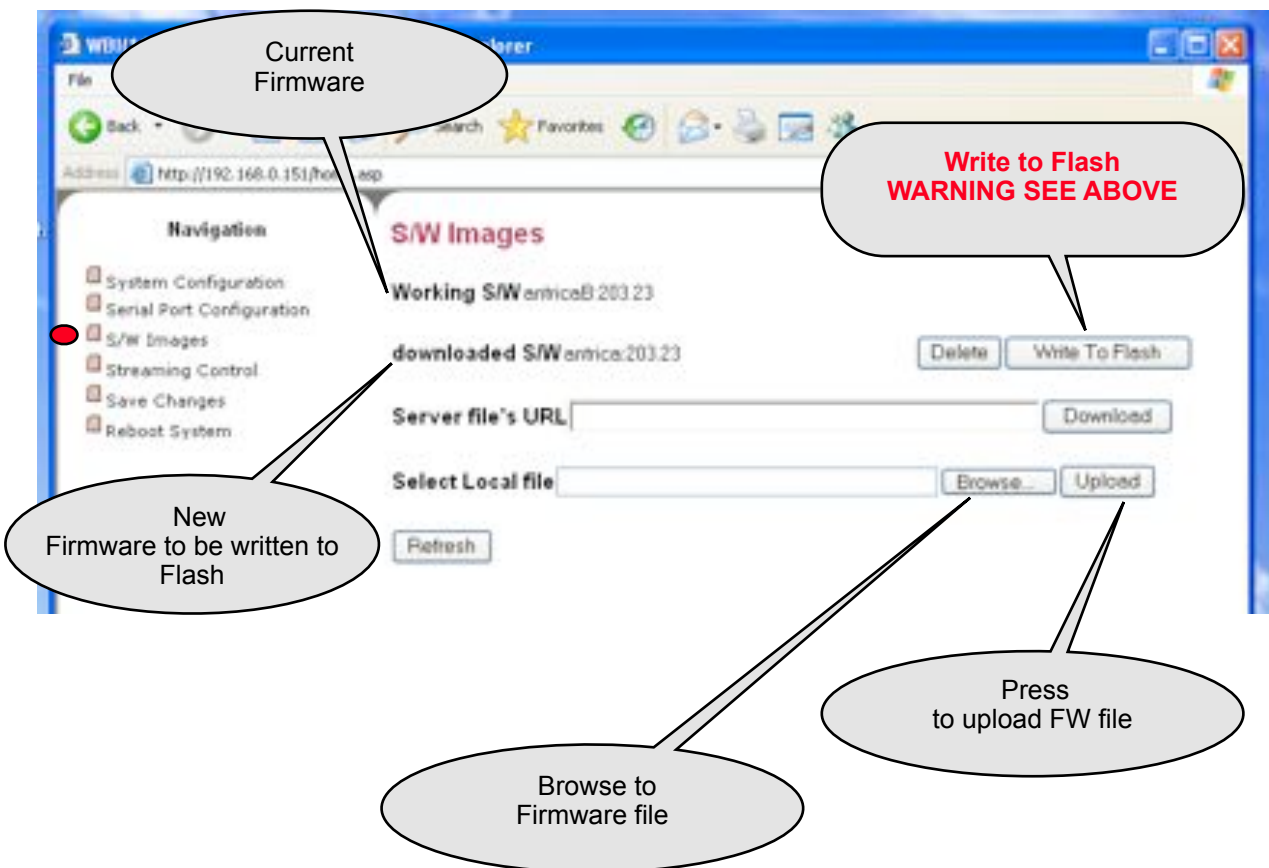
Submit changes: changes will be saved when this button pressed. However if system is rebooted changes will be lost unless **also saved** in “Save Changes” menu on left menu bar.

Refresh this web page.

12. Firmware Upgrade & S/W Images ●

This section allows users to easily upgrade the Firmware of the ANT-4000E

- To upgrade the firmware use the Browse button below to locate the new Firmware file on your computer
- Once the F/W file is selected click UPLOAD. This will cause the ANT-4000E to upload the file into temporary memory. This may take several seconds
- Once the UPLOAD process is finished the web page will show a WRITE TO FLASH box as shown below.
- Pressing WRITE TO FLASH will cause the ANT-4000E to save the file to its Flash memory. **WARNING! Once you press this button do not unplug the power lead as this may cause the system to be corrupted and may not recover or function correctly. Make sure the Firmware file is correct before pressing UPLOAD TO FLASH. (If an ANT-4000D is connected BOTH units will be upgraded with new FW)**
- Once UPLOAD TO FLASH is pressed the system will take several minutes to write the file to Flash and then reboot. Do NOT UNPLUG the system at this time or make any further changes until it has rebooted fully (All LEDs illuminated and as a minimum LED1 and LED2 illuminated permanently if video is not connected or a decoder is not connected) Allow 5 minutes for this take place.



Web Based System Setup-Continued

13. Streaming Control (1) - Information Screen

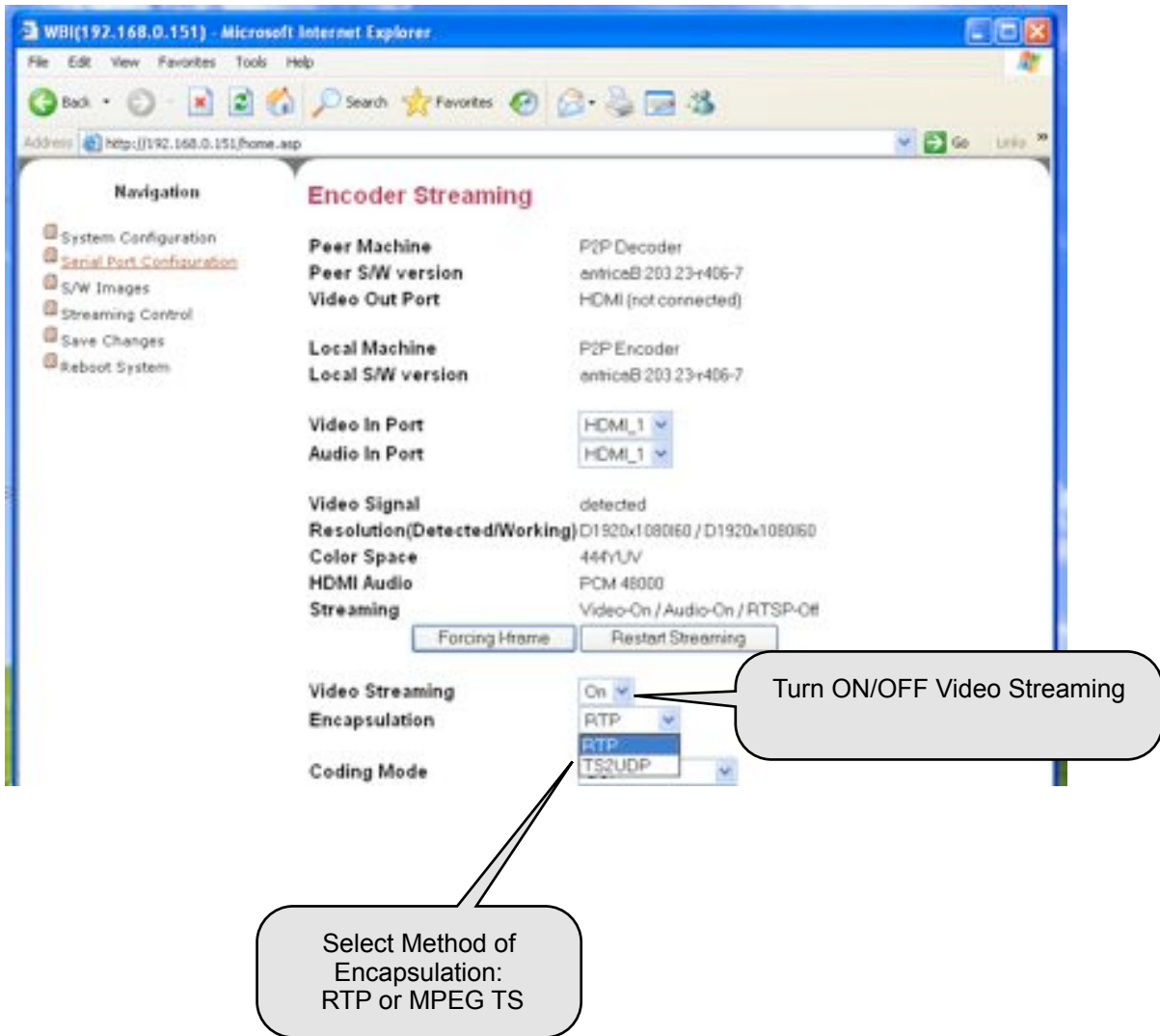
Streaming Control page allows settings to be made to the method of streaming.
Part of this page has information about this encoder and the remote decoder if connected.
Video and Audio input ports can be selected on this page

The screenshot shows a web browser window displaying the 'Encoder Streaming' configuration page. The page is divided into several sections, each highlighted with a different dotted border and annotated with a callout box:

- Peer Machine Information:** A callout points to the top section containing 'Peer Machine', 'Peer S/W version', and 'Video Out Port'. The values shown are 'P2P Decoder', 'artriceB.203.23-r406-7', and 'HDMI (not connected)'.
- Local Machine Information:** A callout points to the middle section containing 'Local Machine', 'Local S/W version', 'Video In Port', and 'Audio In Port'. The values shown are 'P2P Encoder', 'artriceB.203.23-r406-7', and two dropdown menus both set to 'HDMI_1'.
- Video/Audio/Streaming Status:** A callout points to the bottom section containing 'Video Signal', 'Resolution', 'Color Space', 'HDMI Audio', and 'Streaming'. The values shown are 'detected', 'D1920x1080i60 / D1920x1080i60', '444YUV', 'PCM 48000', and 'Video-On / Audio-On / RTSP-Off'. Below this section are 'Forcing I-Frame' and 'Restart Streaming' buttons.
- Streaming Settings:** A callout points to the bottom-most section containing 'Video Streaming Encapsulation', 'Coding Mode', 'GOP Size', 'Intra Count', 'Video Bitrate(Mbps)', 'Frame Rate', 'OSD Status', 'RTSP Server', 'Audio Streaming', and 'Audio Direction'. The values shown are 'On', 'STP', 'GOP', '60', '120', '12', '30', 'Off', 'Off', 'Stereo', and 'All'. Below this section are 'Submit' and 'Refresh' buttons.

Additional callouts provide context: 'Information on Video/Audio/Streaming if connected' points to the bottom section, and 'In systems where a large GOP is used it may be necessary to force an I frame to be generated to assist the decoder in locking on to the decoder stream. Press here to force I frame' points to the 'Forcing I-Frame' button.

13. Streaming Control (2)- Video Encapsulation/ Streaming ●



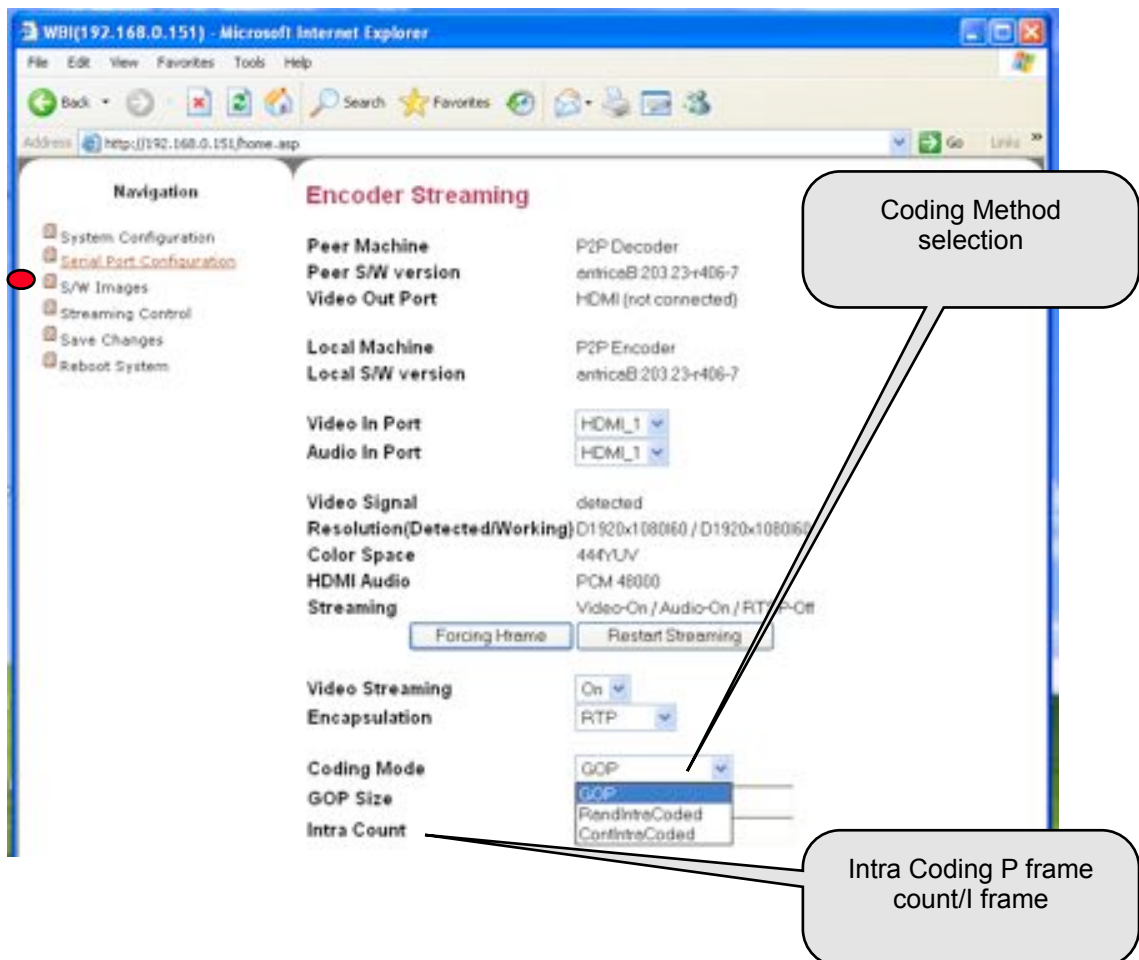
ANT-4000E has 3 modes of Video encapsulation:

- RTP mode is used when the RTSP server is enabled and the ANT-4000E streams to an RTSP software or hardware decoder or when ANT-4000E is used in low latency P2P mode with an ANT-4000D decoder.. Note: The ANT-4000D may also decode RTSP mode but ultra low latency is not supported.
- P2P mode is default if the RTSP server is turned OFF.
- MPEG-TS mode is used when the ANT-4000E is streaming via UDP to a set top box or soft decoder capable of decoding MPEG Transport Stream (H264 only) . Note Audio is currently not supported in this mode.

13. Streaming Control (3)- GOP and Intra Modes ●

ANT-4000E supports three modes of sending the I frames:

- I and P frames sent separately. This is referred to as GOP mode (Group Of Pictures). An I frame or reference frame is generated followed by a number of P frames (Predictive) determined by the GOP SIZE setting (e.g GOP=60 is 1x I frame followed by 60 P frames)
- RandIntraCoded and ContIntraCoded are similar methods of “Slice” encoding where the I frame data is broken into pieces (macroblocks) and sent together with the P frames. A traditional I frame is generated when a new client joins in or at the start of a transmission.
- Contiguous Intra Coded (ContIntraCoded) is where the top left macroblock of an I frame is sent with the first P frame. The next Macroblock of the I frame is sent with second P frame and so on . Last macroblock is bottom right.
- Random Intra Coded (RandIntraCoded) is where macroblocks of the I frame are randomly selected and sent embedded in P frames.
- Intra Count defines the period over which I frames are dispersed over P frames, simply number of P frames to each I frame.



Web Based System Setup-Continued

13. Streaming Control (4)- Video Bitrate, Framerate & Audio ●

- Video maximum bitrate, framerate and On Screen Display can be set using these settings. Very low bitrates for certain fast action video sequences or higher resolutions may cause blocking / artifacts.
- RTSP streaming can be turned ON or OFF, when OFF P2P propriety low latency mode is enabled to an ANT-4000D Decoder.

The screenshot displays the 'Encoder Streaming' configuration page in a web browser. The page is divided into several sections:

- Navigation:** System Configuration, Serial Port Configuration, S/W Images, Streaming Control (highlighted with a red dot), Save Changes, Reboot System.
- Encoder Streaming:**
 - Peer Machine: P2P Decoder, antriceB.203.23-r406-7
 - Peer S/W version: antriceB.203.23-r406-7
 - Video Out Port: HDMI (not connected)
 - Local Machine: P2P Encoder, antriceB.203.23-r406-7
 - Local S/W version: antriceB.203.23-r406-7
 - Video In Port: HDM_1
 - Audio In Port: HDM_1
 - Video Signal: detected
 - Resolution(Detected/Working): D1920x1080i60 / D1520x1080i60
 - Color Space: 444YUV
 - HDMI Audio: PCM 48000
 - Streaming: Video-On / Audio-On / RTSP
 - Buttons: Forcing I-frame, Restart Streaming
 - Video Streaming: On
 - Encapsulation: RTP
 - Coding Mode: GOP
 - GOP Size: 60
 - Intra Count: 120
 - Video Bitrate(Mbps): 12
 - Frame Rate: 30
 - OSD Status: Off
 - RTSP Server: Off
 - Audio Streaming: Stereo
 - Audio Direction: All (highlighted in a callout)
 - Buttons: Submit, Refresh

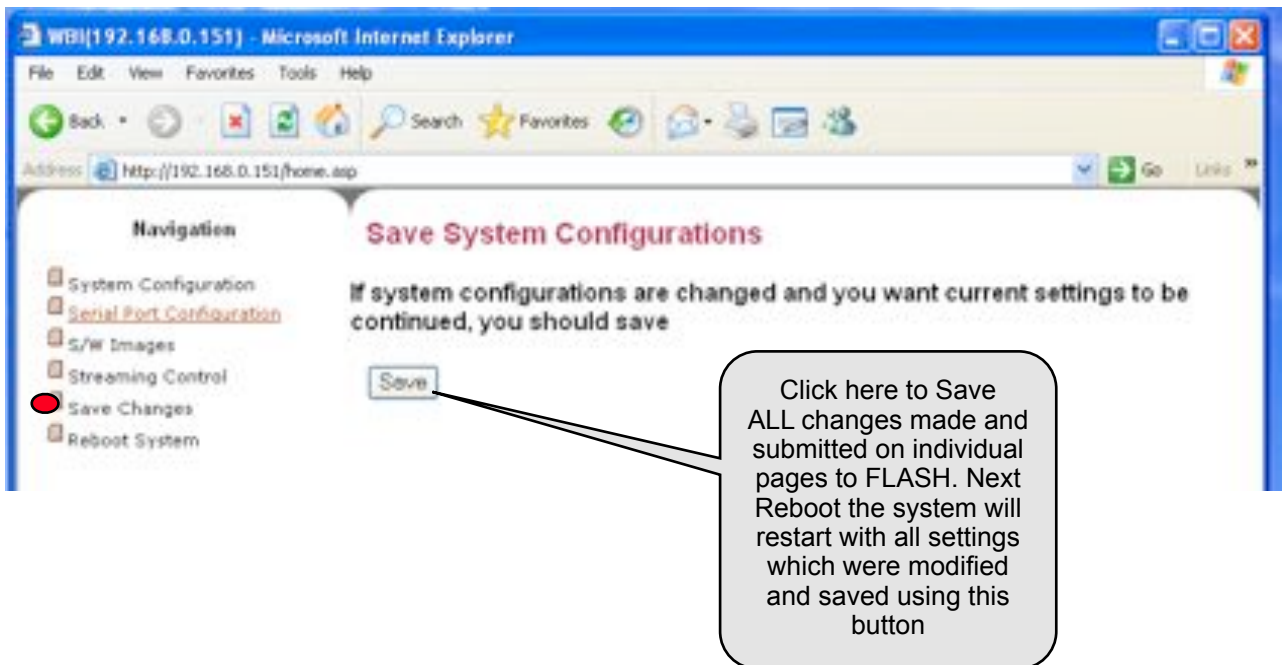
Callouts provide additional information:

- Video Bitrate Maximum setting:** Points to the 'Video Bitrate(Mbps)' field set to 12.
- Video Frame Rate setting 1-30:** Points to the 'Frame Rate' field set to 30.
- Turn On Screen Display On or Off:** Points to the 'OSD Status' dropdown menu set to Off.
- Audio Direction. RTSP= rtsp client only, RX= ANT-4000D decoder only, ALL= Both RTSP and ANT-4000D:** Points to the 'Audio Direction' dropdown menu set to All.

Web Based System Setup-Continued

14 Save Changes ●

On each Setup page there is a button called SUBMIT . This causes the changes on that page to be enabled. However if the system is rebooted these changes will be lost. To write the changes on ALL pages into the system FLASH memory go to this page and click SAVE

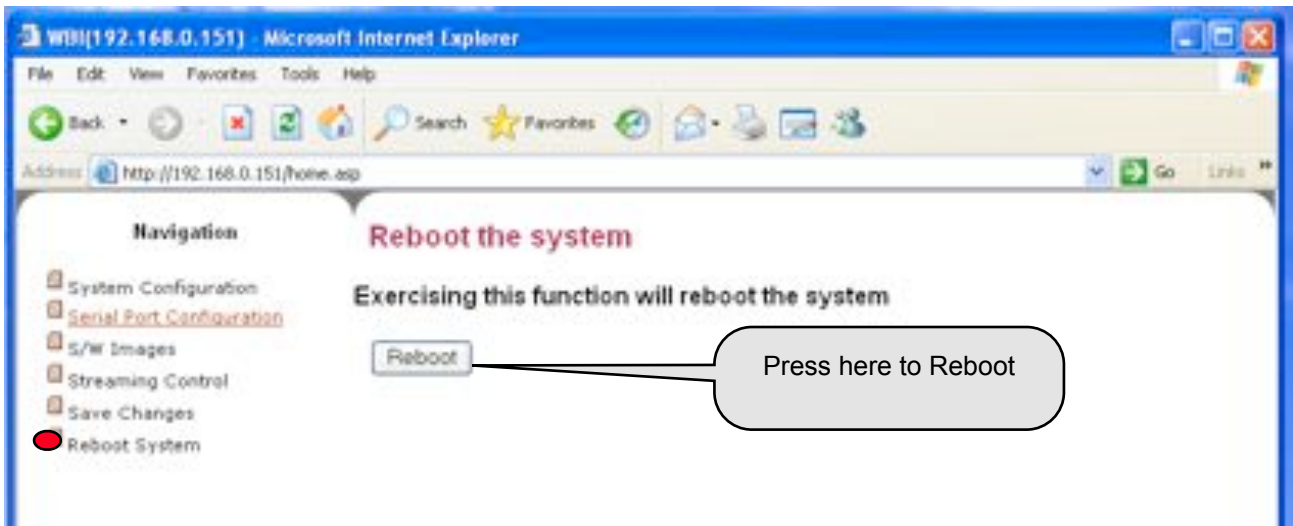


Web Based System Setup-Continued

15 Reboot System & Factory Reset ●

☐ Reboot

Simply this is a Soft Reboot of the system which saves unplugging the 12 volt power cord. This is useful if a remote reboot is required



● **FACTORY RESET**

To restore the Encoder to Factory default settings and factory IP address **192.168.0.151**
HDMI 1 input is default on factory reset

Instructions

Using paper clip press and hold the reset button on the panel for approximately 10 seconds or until ALL LEDs flash
Release Reset button
Allow up to 2 minutes for unit to fully reboot
All settings are now restored to Factory Default

Power Up.
Press and Hold for approx
10 seconds
Factory Reset of all settings



16 Using P2P Low Latency Mode with ANT-4000D

Connect ANT-4000E plus ANT-4000D to a network

Configure the Decoder with the Encoders IP address and Encoder with Decoders IP address in the PEER IP section of System Setup. The example below shows the encoder System Configuration page with the IP address of the Decoder in PEER IP (LAN)

Encoder IP address

Decoder IP address here

Streaming mode is P2P

STREAMING CONTROL WEB PAGE
Turn RTSP OFF
Encapsulation= RTP
Video Streaming ON
other settings as required

Select the correct Video Input and Output ports on the ANT-4000E and ANT-4000D

In all cases make sure you save the setting changes by clicking SUBMIT on each web page and then on completion SAVE CHANGES on the save changes web page.

The Encoder will now stream Video to the Decoder which will display the decoded video on a suitable monitor or TV.

If the Encoder is streaming correctly all 5 LEDs will be solidly lit. On the Decoder all 4 LEDs will be solidly lit (LED5 not used on the Decoder)

17 Using VLC player with ANT-4000E -Unicast



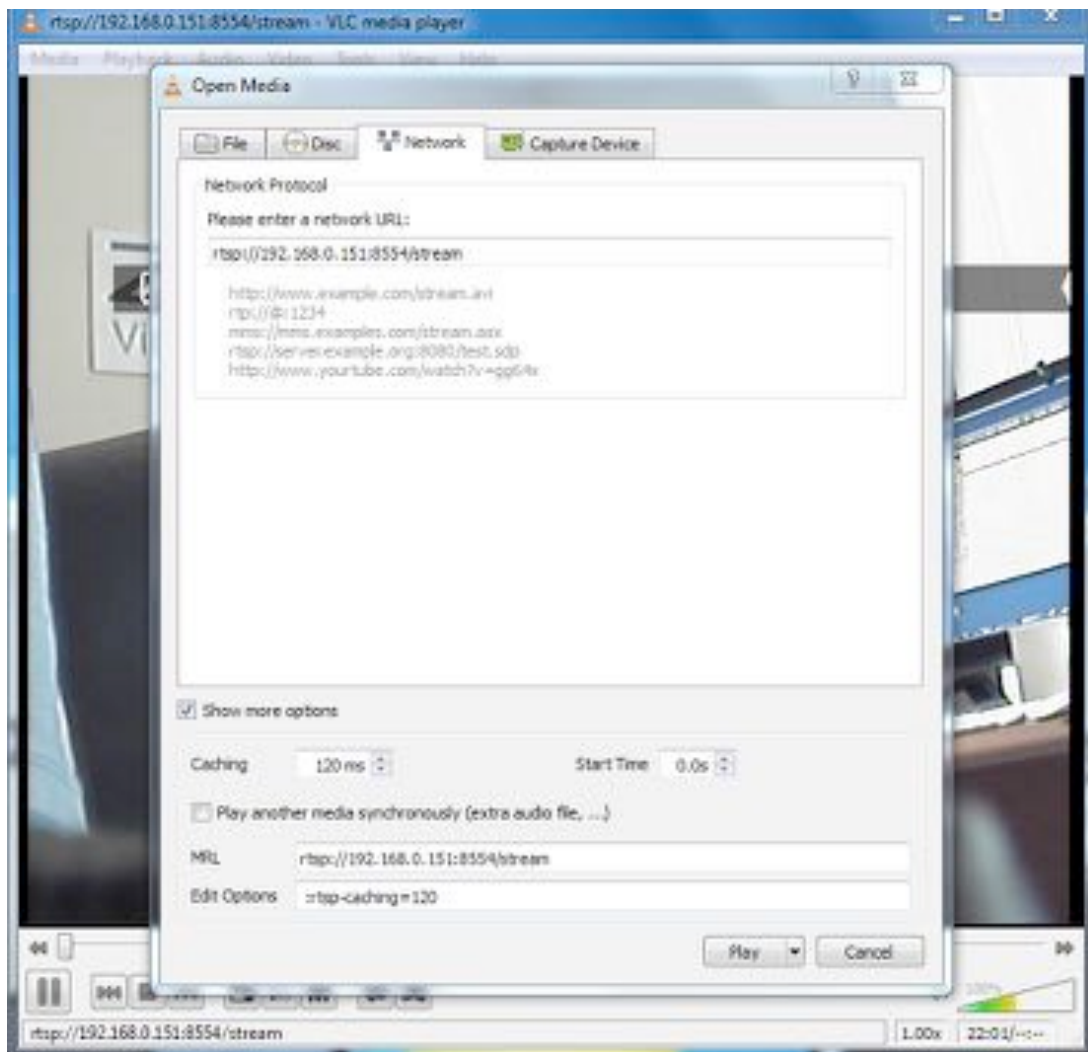
□ VLC Setup

VLC player can be used as a decoder in both RTSP and MPEG-TS modes. RTSP supports full AAC audio plus video whilst MPEG-TS only supports video.

Open VLC Player and click MEDIA then OPEN NETWORK STREAM. This will open the window shown below. Type:

rtsp://192.168.0.151:8554/stream
into the "Please enter a network URL" box

By checking the Show more options box in the bottom left corner you will have the option to increase or decrease the video buffer size (cache). Smaller buffer/cache = lower latency but possible jitter in video under certain network conditions. We suggest 120mS as a starting point

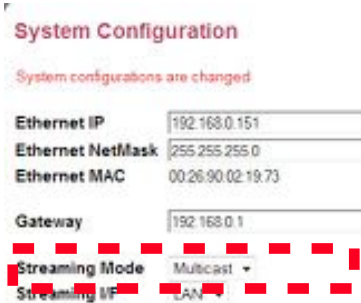


16 Using VLC player with ANT-4000E- Multicast

❑ VLC Setup

VLC player can be used to decode Multicast streams from the ANT-4000E.

1) In the ANT-4000E System Configuration page select Multicast rather than P2P



- 1) Once ANT-4000E is set to multicast make sure you click submit.
- 2) Next in VLC type in the network page (as in Simulcast)
rtsp://192.168.0.151:8554/stream or whatever the encoder IP address is set to.
Port is fixed as 8554.
- 3) Under Show More Options-Edit Options type
rtsp-mcast=1 Now click PLAY
- 4) You will now be receiving a multicast stream on the multicast IP address in the ANT4000x, although VLC makes it appear you are still on the simulcast IP address

