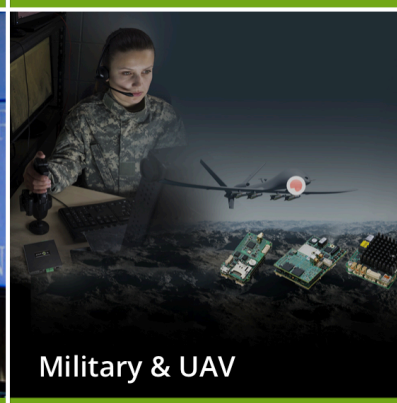
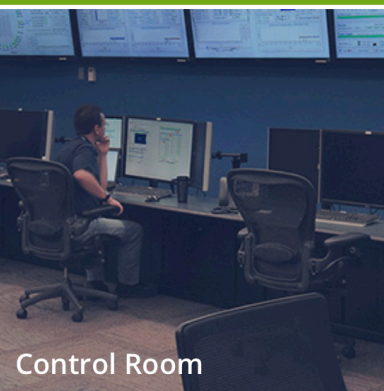
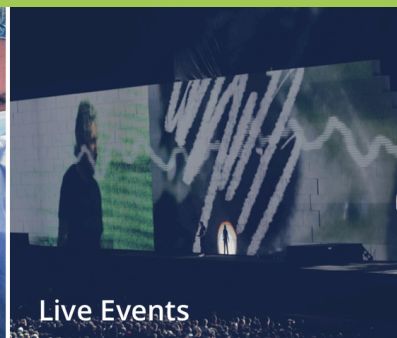




# ANT-1774 QUICK START GUIDE



Applicable to all ANT-1774 with various mezzanine board variants



# ANT-1774 Product Description and Features

- The ANT-1774 Video Encoder
- Ultra small for UAV Robotics applications
- Supports H264 and H265 low bit rates
- Dual 1080P60 simultaneous streams
- RTSP and RTP Unicast and Multicast
- 2 Independent Video channels and streams
- HDMI, HD-SDI or Composite Video options
- Pluggable Video boards - mix and match
- On board independent recording to Micro SD
- Forward Error Correction supported (FEC)
- Two way serial data
- IP finder and Firmware burn PC tools
- Board setup via PC application (web interface planned)
- 5 Volt power supply
- On board SD card firmware recovery or PC tool
- On the fly changes to stream - GOP, Bit rate etc
- Cable sets available
- Warranty and Support

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The ANT-1774 is a universal miniature H265/264 Video Encoder for UAV and other applications where size is required to be small. Low latency and multiple video inputs and streams plus recording are supported.

The ANT-1774 has multiple variant mezzanine boards that support HDMI, HD-SDI and Composite Video inputs. Any two can be plugged in in any combination. This Quickstart uses HDMI plus a Composite mezzanine as an example.

Some of the settings will vary slightly depending on which version and also which firmware. The document applies to Firmware 3.0.7 and newer FW .

## 1.What's in the Box

The ANT-1774 Main board (includes an onboard SD card recording module) . This main board has two plug in mezzanine modules supporting the video inputs required.

- ANT-1774 Mezzanine boards maximum two per main board supporting HDMI, HD-SDI or Composite video. Any two can be used in any combination
- Cable sets if ordered, ethernet ,power ,serial data and video cables

## 2. Software & PC Requirements

Before starting please make sure you download the ANT-1774 SOFTWARE folder containing the following sub folders (you may have newer versions):

**2.1 Burn Files Ver 3.0.7** . These are the firmware files for the specific firmware version 3.X.X . You may from time to time receive updates to this folder with newer Firmware. The term Burn refers to loading firmware from the computer onto the main board usually via the fitted micro SD card

**2.2 Mercury Burn ver. 1.0.0.2** This is a PC Windows executable application which allows you to load the files in 2.1 onto the ANT-1774 main board from your computer.

**2.3 Mercury Control ver 1.0.5.7** This is the main PC application that replaces a web interface to allow complete setup of and control of the ANT-1774 . Until we have a Web interface this is used to set up the device.

**2.4 Mercury Scanner ver. 1001** This is an IP scanner application that allows you to find the IP address of the board even if on another subnet.

**2.5 Neptune Player ver 2.2.5** : This is our own low latency player (software decoder/ recorder) and statistics application. Use Neptune Player as you would VLC player to receive RTSP or RTP Unicast or Multicast streams and display these .You will need a PC Laptop running Windows 10



**WARNING: The two USB ports are powered and intended for future use connected to external memory. Connecting these to a PC or Laptop or other powered USB port will damage the ANT-1774**

## 3.0 Setting up the Hardware and PC

Connect the ANT-1774 to a laptop or PC via an Ethernet switch using standard ethernet cables or directly with an ethernet cable. Please make sure your computer has a fixed IP address ideally in the 192.168.0.XXX as **the default IP address of the ANT-1774 shipped from Antrica is 192.168.0.245**

**Power up the ANT-1774 with a 5 VOLT DC POWER SUPPLY ONLY**

## 4.0 Finding the IP address

**Please open the application Mercury Scanner**

On running the application you will see a window like this:

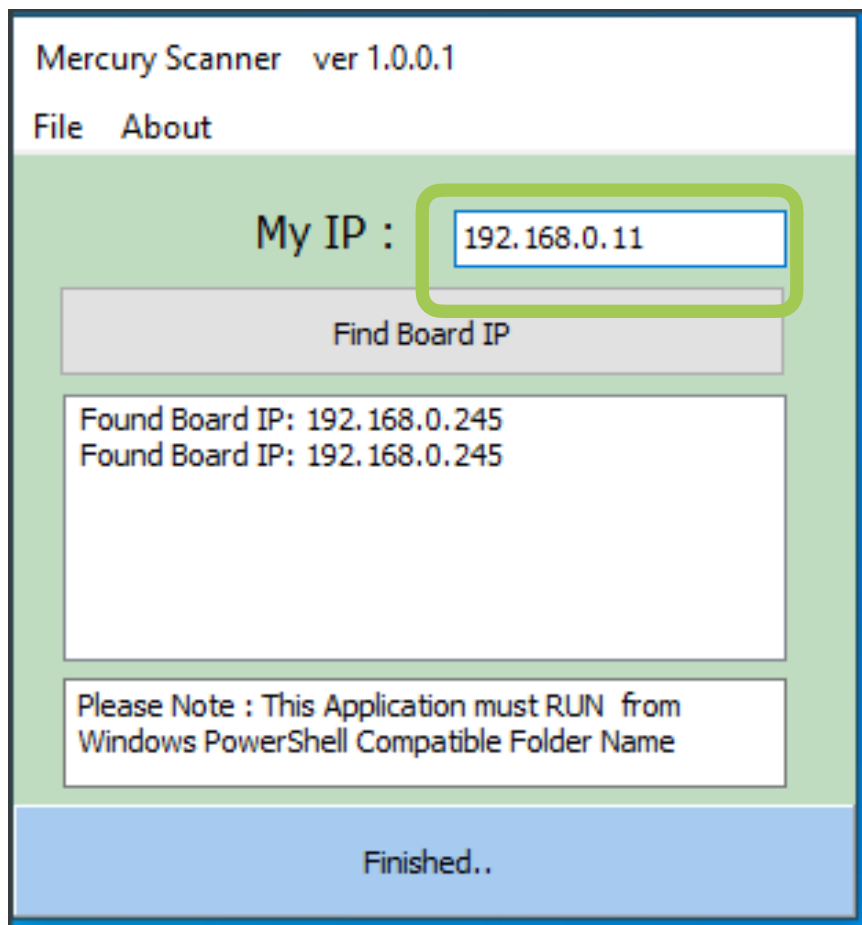
(If you cannot run the application rename the folder in which it is kept using letters

and numbers only

and no special characters or spaces)

Please enter the fixed IP address of your PC into the top window and click Find Board IP. After a few seconds the app will find the IP .

Please now change your PC fixed IP to the same subnet eg 192.168.0.xxx in this example

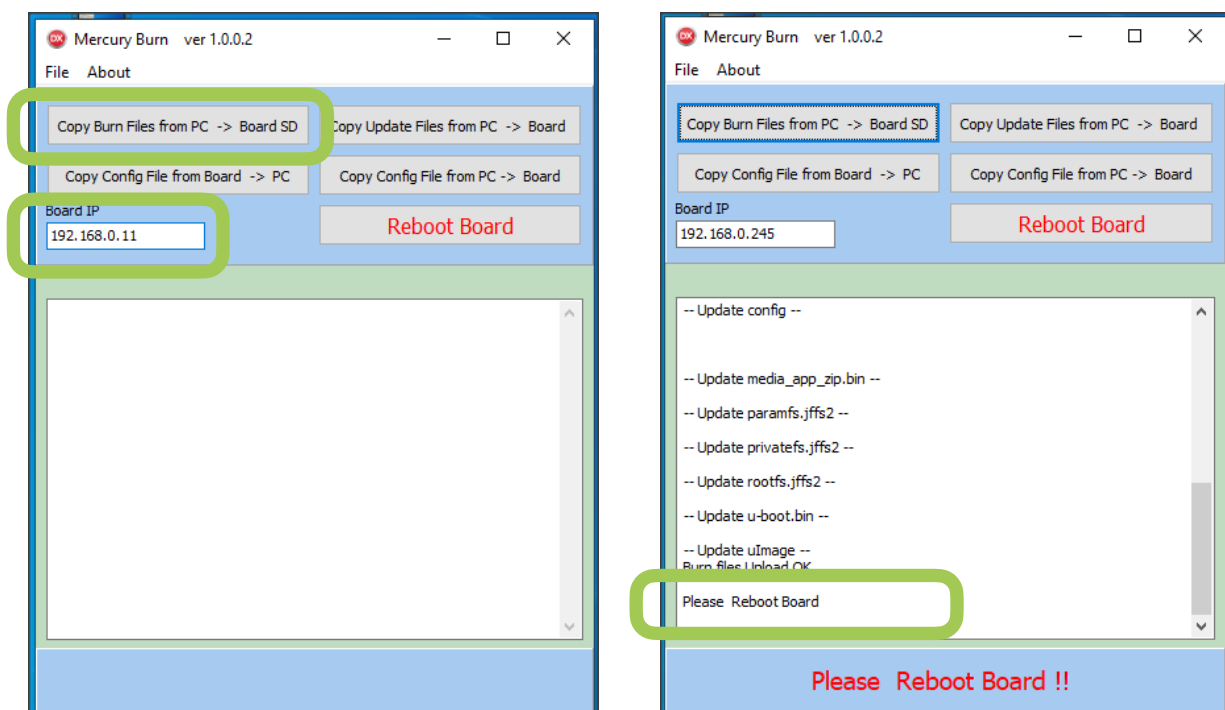


## 5.0 Firmware loading and Recovery

The ANT-1774 may come with older firmware so we recommend you update the device to the following firmware located in your folder in section 2.0 above **Burn Files ver. 3.0.7**

To upload these files please open the Application : **Mercury Burn ver. 1.0.0.2 (or newer)**

Inside this folder you will find a **Mercury\_Burn.exe** file, double click this to run it and you will see the following window:

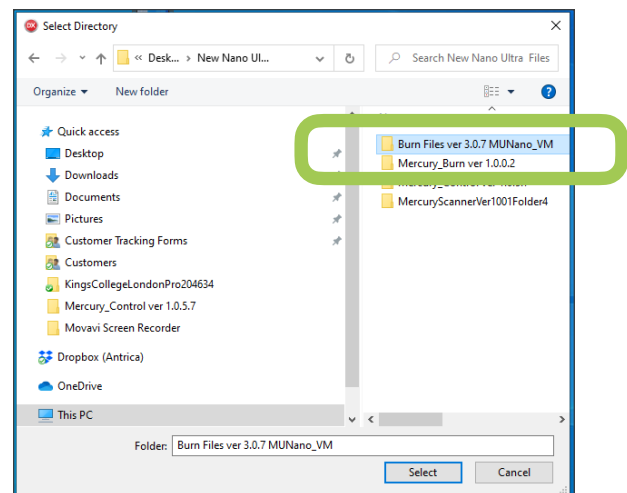


**STEP 1.0 :** In the BOARD IP section please enter the IP address of the ANT-1774 you found in section 4.0 **The default IP of the board when shipped with Factory Defaults is 192.168.0.245**

**STEP 2.0 :** There are 4 boxes at the top of this window click on Copy Burn Files from PC >> Board SD. This will copy the firmware from the PC to the micro SD card fitted into the ANT-1774.

**NOTE: If an SD is not fitted please find a micro SD card and format it FAT 32 then insert into board SD card socket before proceeding.**

**STEP 3.0 :** Having clicked on the button in STEP 2 you will be asked to point to the location of the Burn Files (Firmware) Locate the folder in Section 2 of this guide called **Burn Files Ver 3.0.7 (or newer)** and select this folder (Do not open the folder as you will have gone to far , step back to select the folder)



**STEP 4.0 :**

Once you select the folder and click “SELECT” the application will start to run and you will see progress in the window. Please wait until you see the REBOOT message on page 5.

**STEP 5.0: This is the final step .** Click REBOOT BOARD at the top right.

**PLEASE WAIT 10 MINUTES**

The board is now downloading the firmware from the SD card to the onboard memory and then will Reboot. This process can take from 5-7 minutes **so for safety please wait 10 minutes** . After 10 minutes the board is ready to to be configured in the next section 6.0

NOTE: The files on the SD card have been automatically renamed to avoid continuous firmware upgrading from the SD card. If you wish to reload the firmware you must start at STEP 1 above and repeat the process.

## 6.0 Setting up the Board parameters using the Mercury Control Application :

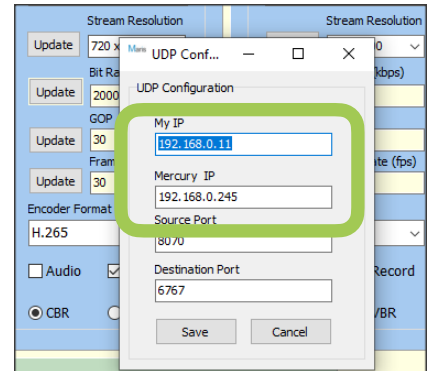
Please open the Mercury Control application by double clicking Mercury\_Control.exe

This is the window you will see on initial opening.

To use this application please follow these basic steps

### STEP 1.1 : Configure the UDP Ethernet Interface

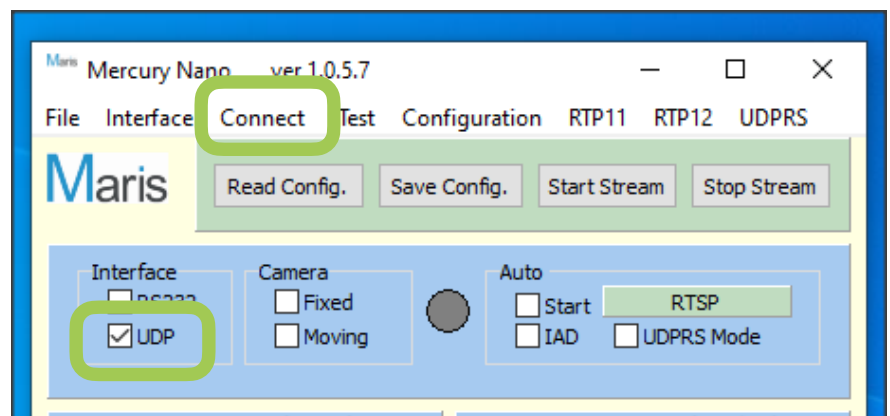
In the toolbar select **INTERFACE** -> **UDP** and you will see this window open; Fill in your PC IP address and the Board IP address , leave ports as default



### Step 2.1: Connect to the ANT-1774 Board

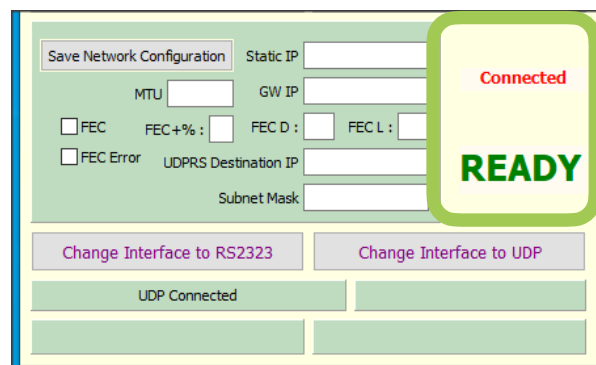
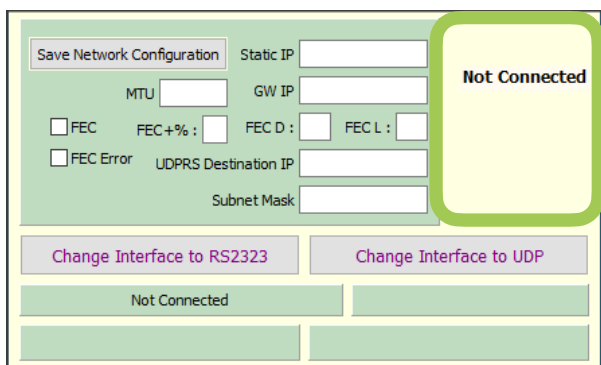
In this step you will tick the UDP check box and click CONNECT in the toolbar  
At the bottom of the main window you will see two messages:

Not Connected (before you check UDP box and click Connect)



Connected and **READY** : (After clicking connect if your connection is successful)

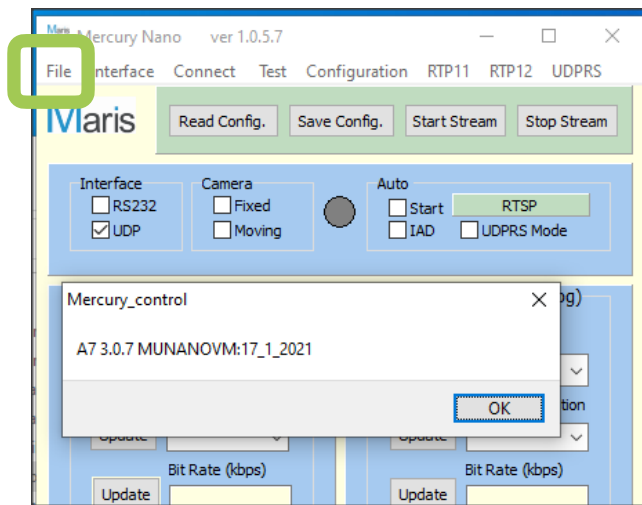
Note! Please don't not make any further changes until you see the READY light as the board may freeze.





### STEP 3.1: Read the Firmware version

Check the firmware version installed on the board is correct FILE/Get Firmware Version in the toolbar

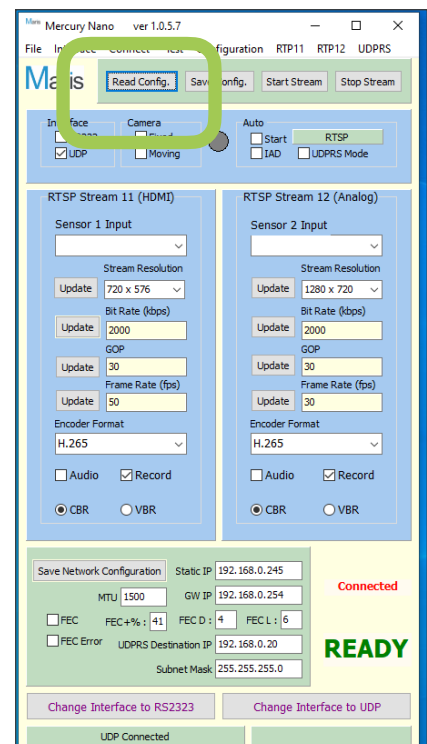


### STEP 4.1: Reading the Configuration of the Board (Read Config)

In this step please click the READ CONFIG button and you will see the PC application populated with the boards previously saved Configurations.

You may find that some boxes have not been populated like the Sensor inputs , this is normal as the board may not have mezzanines connected or previously configured.

In the next step you will see how to identify and configure the Sensor interface boards  
HDMI, HDSDI or Composite may be fitted in any combination



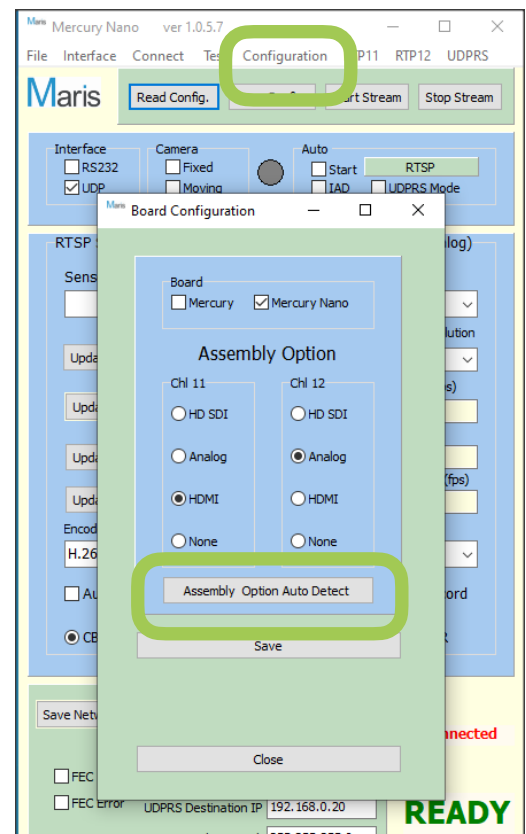
### STEP 5.1: Board Configuration

Please select **Configuration** from the tool bar and select **Board**

This will open a pop up window

In this window you can see Channel 11 (CH 11) on the left and CH 12 on the right. The current Board Configuration shows HDMI in CH 11 and Composite in CH 12.

This may be correct but to be sure select **ASSEMBLY AUTO DETECT** and the application will detect what you have connected actually. Once detected click **SAVE** then **CLOSE** to close this window



### STEP 6.1 : Detect what input resolutions are connected

Please select any resolution initially from the pull down menus for **SENSOR 1 INPUT** and **SENSOR 2 INPUT**

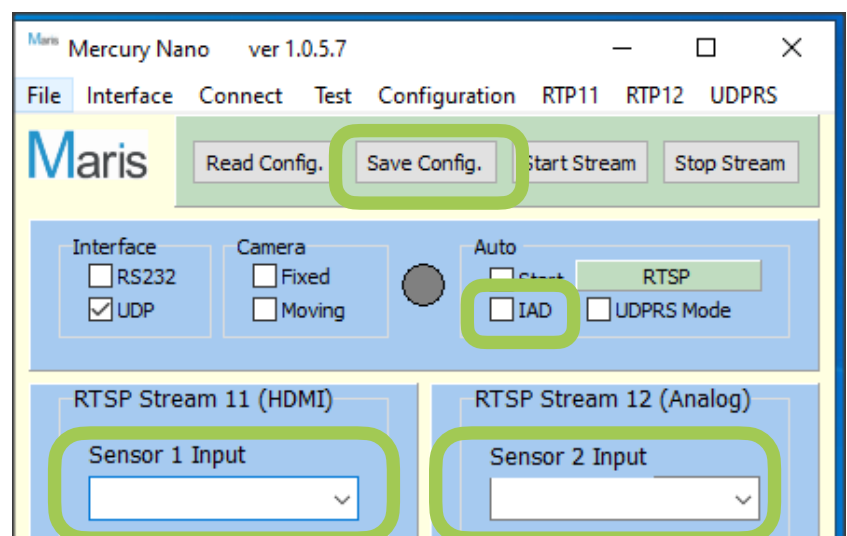
Next **SAVE CONFIG**

To Detect input resolutions check the **IAD** box as this will force the board to detect what is actually connected .

Finally **SAVE CONFIG**. Your board is setup ready to stream

NOTE! **IAD** only works if the pull down **SENSOR inputs** have something selected and the Config saved.

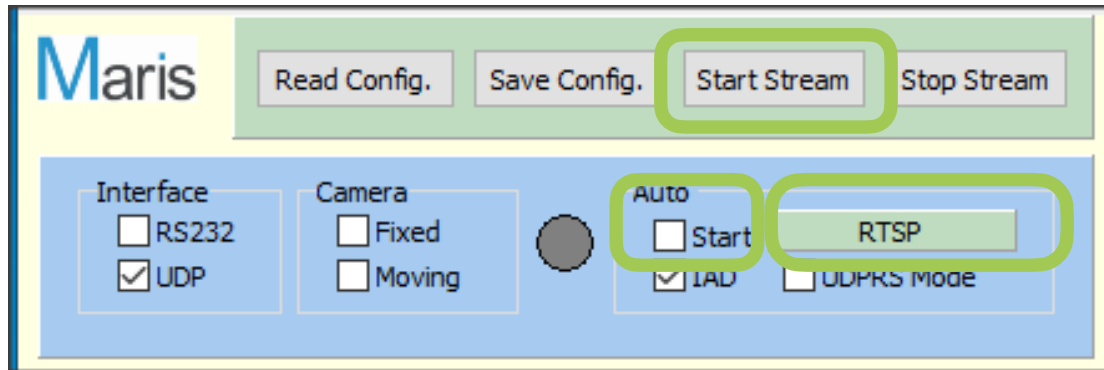
**You are now Ready to STREAM**



## 7.0 Setting up and Streaming RTSP

To set up RTSP streaming please select **RTSP** using the green button

Before using VLC Player or our NEPTUNE PLAYER you MUST Start the stream ,  
click the grey button **START STREAM**



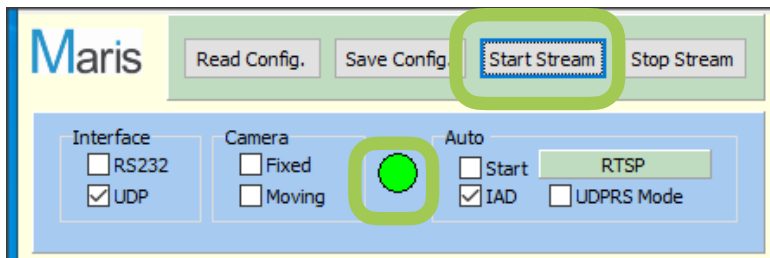
Selecting the **START** tick box will force the board to stream on each reboot automatically

## 8.0 VLC Player Settings and Setup

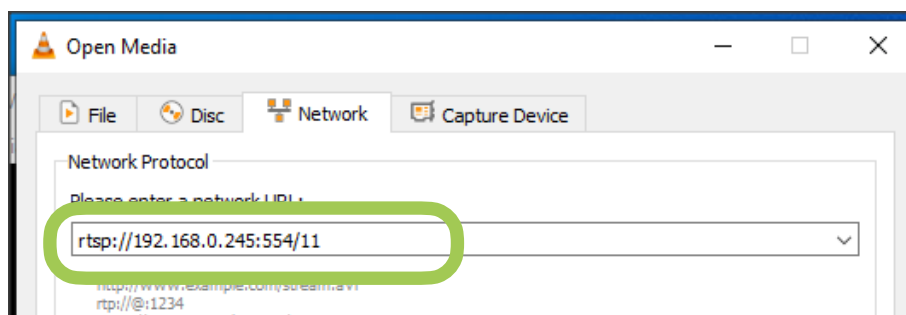
For VLC player the RTSP URL will be as follows

**rtsp://192.168.0.245:554/11** for Channel 11 (HDMI in this example)or

**rtsp://192.168.0.245:554/12** for Channel 12 (Composite video in this example)



Please make sure the GREEN round light is on after you click START STREAM  
Open VLC player and enter the above URL in open network stream, click PLAY



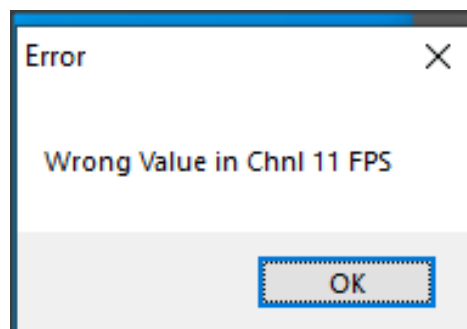
You will see the video displayed on your PC running VLC

## 9.0 Changing Stream settings on the fly

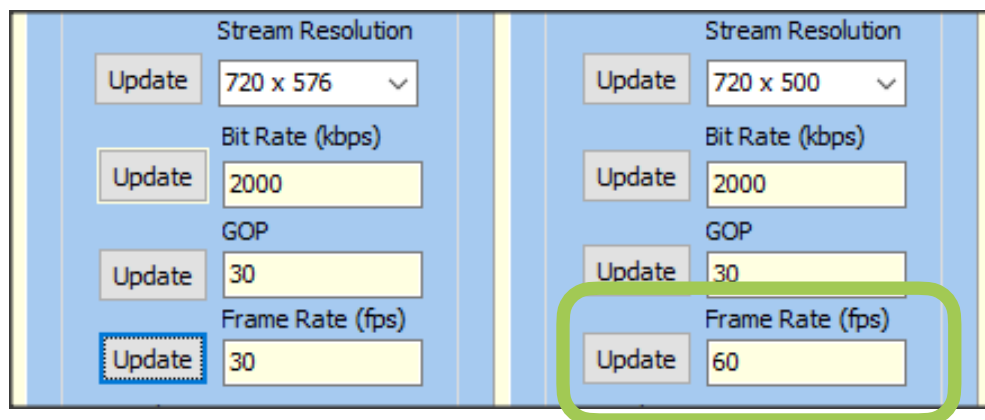
You may make changes to the stream settings real time by changing the setting and clicking UPDATE.

This setting will immediately change the bit rate, GOP, frame rate or stream resolution (scaling)

NOTE! You cannot stream frame rates that are Higher than input resolution . You will get an error message like this .



These are the 4 settings that can be changed.

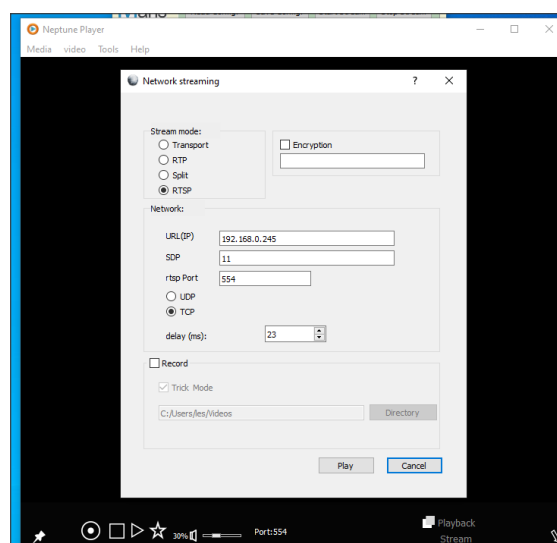


## 10.0 Neptune Player Settings

Neptune Player is a low latency player similar in function to VLC but with much lower decoder delay (latency)

Open NETWORK on the toolbar and select RTSP, fill in the IP address of the board , Channel number (SDP), RTSP port and select TCP (or UDP)

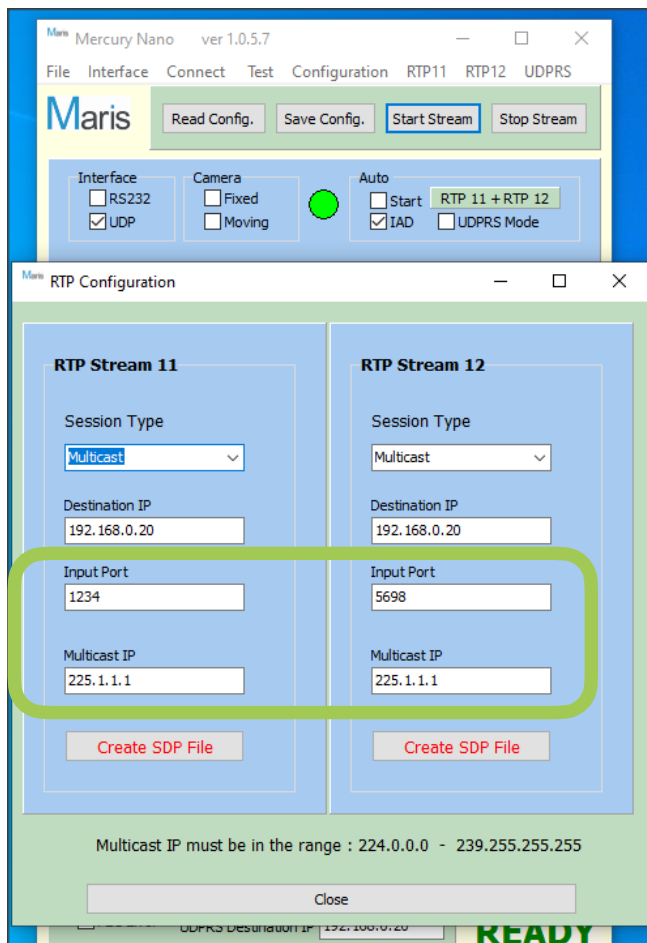
Then click **PLAY**



NOTE! There is a separate document on Neptune Player with all its functionality .  
You will need to apply to [support@antrica.com](mailto:support@antrica.com) for an unlock licence key when first using Neptune Player.

## 11.0 RTP MULTICAST settings

RTP supports one to one unicast and multicast. This Quickstart deals with multicast settings for VLC and Neptune Player



First select either channel as RTP or both channels as per this example using the Green button that toggles between RTSP > RTP11 > RTP12 > RTP11+RTP12 (then back to RTSP).

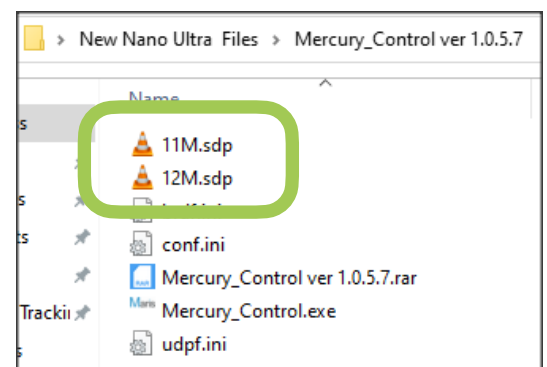
In the toolbar select  
**CONFIGURATION / RTP**

This will open up the RTP Configuration pop up window.

Here you choose a multicast IP address and Port (Destination IP is only used for unicast RTP )  
Once you have selected the Multicast IP and Port you can create an SDP file (11M.SDP and 12M.SDP). This is

Automatically saved to the same folder where this **PC Board Application** is located (the same folder as the Mercury\_Control.exe file

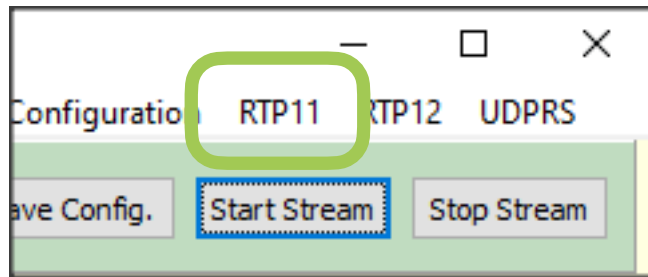
**IMPORTANT Before proceeding please save the config to save all your new RTP settings to the board**





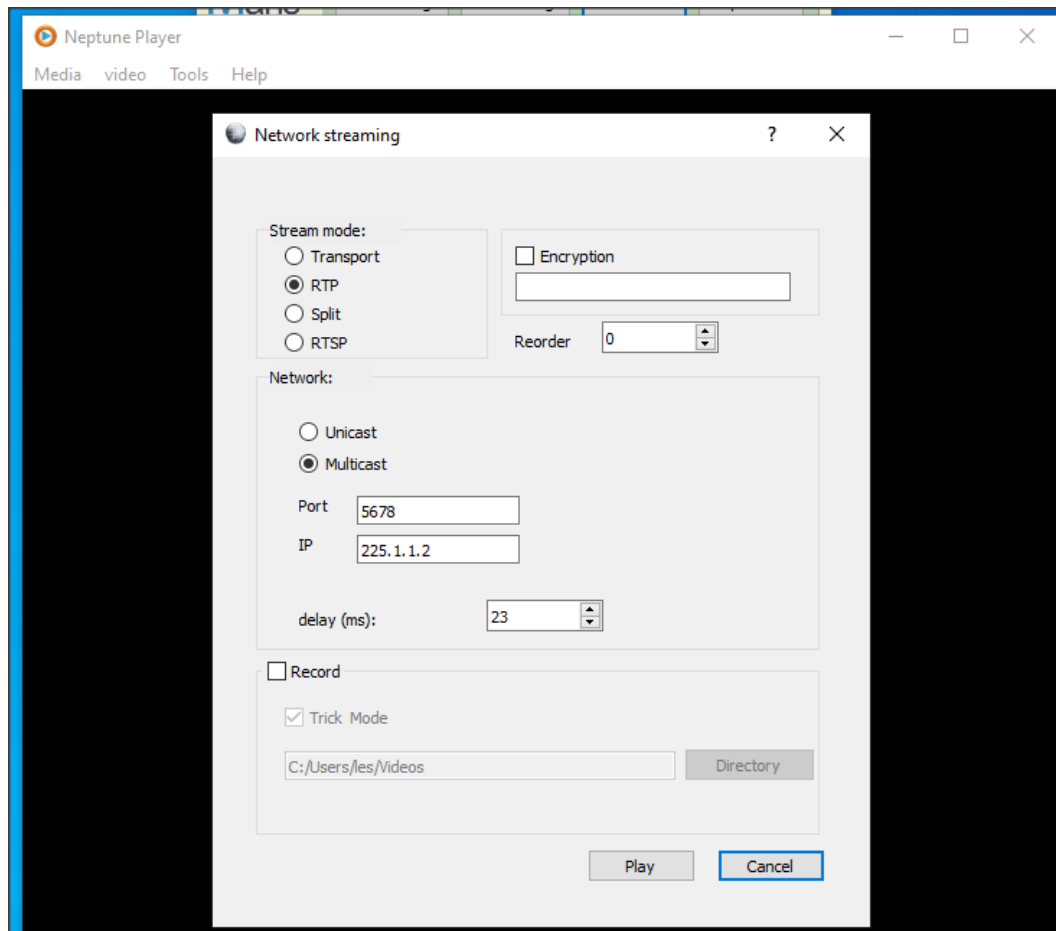
## 12.0 VLC Player with RTP Multicast

To run a multicast stream in VLC simply double click the appropriate SDP (11M.SDP) file you created in section 11.0 then click the RTP11 button in the Toolbar



## 13.0 Neptune Player with RTP Multicast

Similar to VLC you fill in the RTP Multicast IP and Port and click PLAY



## 14.0 Help and Further Support

Please visit our website [www.antrica.com](http://www.antrica.com) and browse to the product page (e.g ANT-1774 where you can find a DOWNLOADS SECTION :

- SOFTWARE SUB FOLDER download the folder containing 5 sub folders mentioned in this Quickstart:
- Burn Files (Firmware latest)
- Mercury Burn application
- Mercury Control (PC application to set up the board streams(
- Mercury Scanner (IP Finder)
- Neptune Player (Low latency player)

### **Other Folders contain**

- application notes
- User manuals
- Mechanical drawings
- FAQs
- Other useful information
- More help Open up a Technical Support Ticket from the support page.
- Serial data is supported in both directions contact [support@antrica.com](mailto:support@antrica.com) for further details.

**Contact: [support@antrica.com](mailto:support@antrica.com) Call : +44 1628 626098 x3**