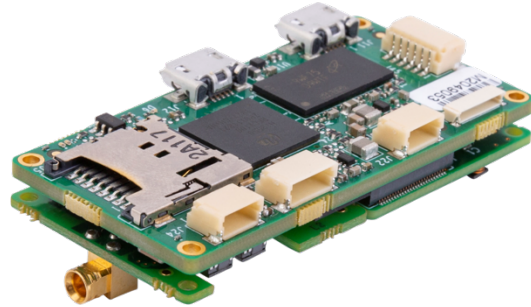


ANTRICA

ANT-1774 User Manual V1.1

Firmware: 3.1.2, PC Control Application: 10514



Applicable to all ANT-1774 with various mezzanine board variants



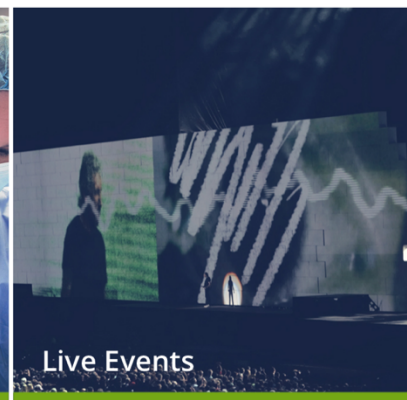
CCTV & Security



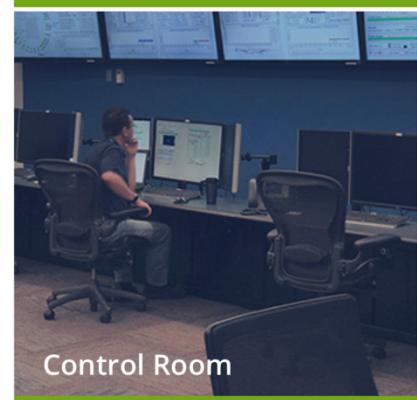
Broadcast



Medical



Live Events



Control Room



Sport Video



Digital Signage



Transport



Betting



Worship



IPTV



Military & UAV

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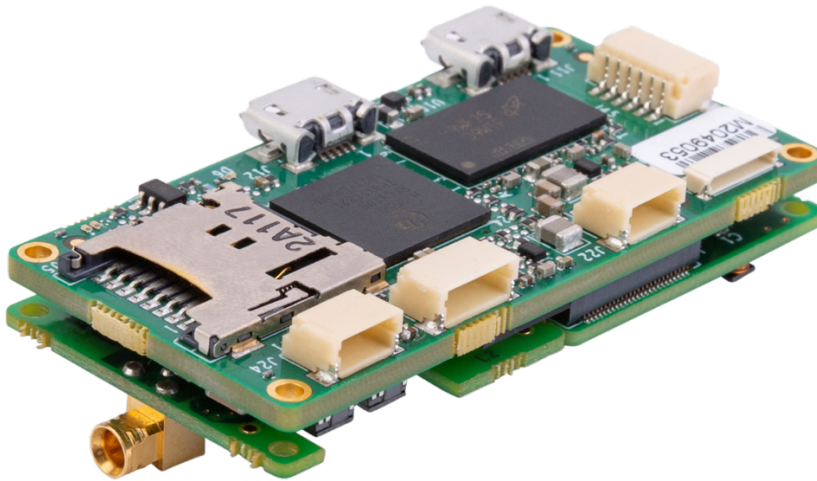
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ANT-1774 – User’s Manual

1. Overview

1.1 Description

ANT-1774 is a Dual Channel SD/HD H.264/5 Encoder.



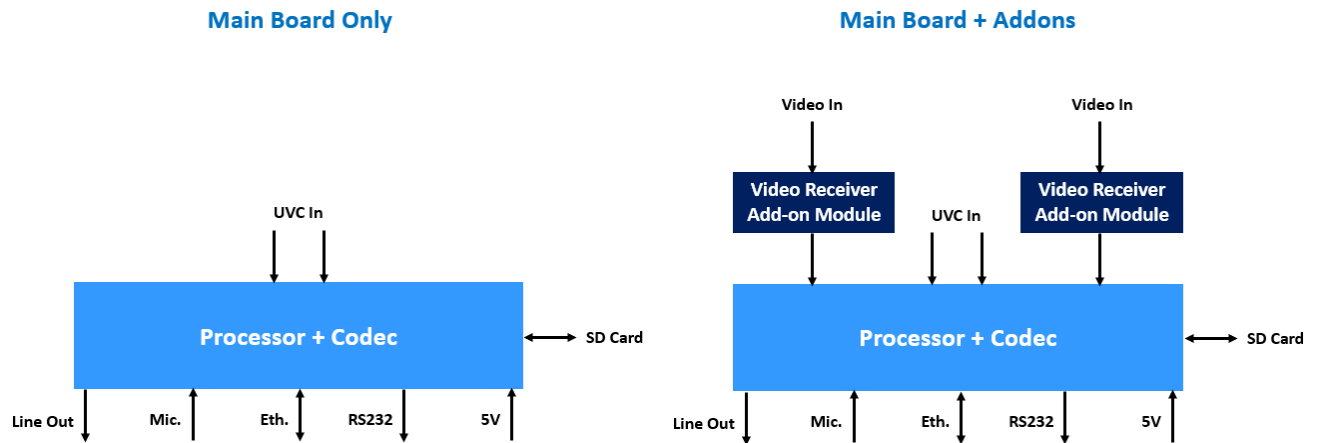
1.2 Architecture

Consists of Main board + 2 optional video receiver addon modules

1.3 Interfaces

- 2 x camera ports, each may accommodate Video Receiver Addon Module, which may receive one of the following inputs:
 - HDSDI
 - Analog
 - HDMI
 - 2 x USB 2.0 ports
 - 1 x microphone
 - 1 x Line Out
 - 1 x Ethernet port
 - 1 x SD Card
 - 1 x RS232
- Do not connect to a PC or powered USB port as this will damage the unit**
- USB ports are powered and intended to connect to external memory. This feature will be supported in future Firmware releases**

1.4 Block Diagram



1.5 Functionality

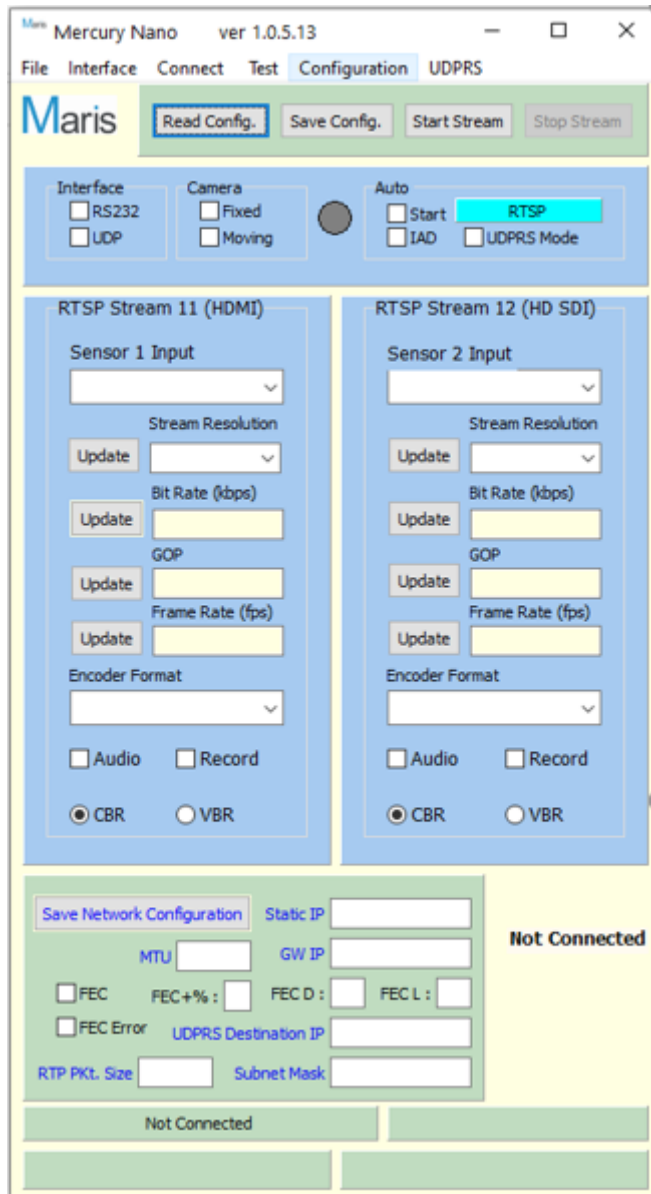
- Any combination of dual video input out of the available addon modules
- Mic audio capture
- Line out audio
- H.265 or H.264 video encoding up to 2 x 1080p60 each
- AAC audio encoding
- Dual RTP in Unicast/Multicast or RTSP streaming
- 2D Forward Error Correction ("FEC")
- Bi-Directional UDP to Serial support
- Dual stream recording on SD card (recording stream parameters can be different from streaming parameters)
- Control via RS232 and Ethernet using API and Windows control application

1.6 Others

- **Power In: 5V**
- Max power consumption while streaming dual HSDI inputs @1080p60: 3.75W
- Dimensions: 25.4 x 50.8mm
- Weight with 2 addon modules: 16g

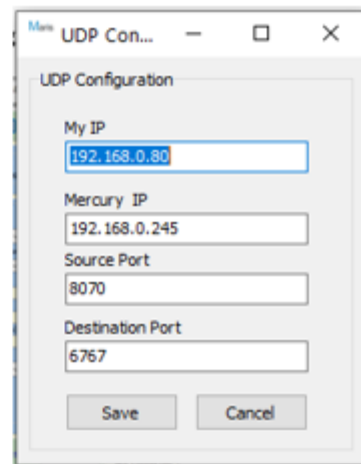
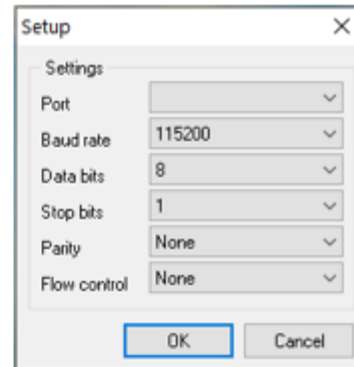
2. Control Application (“App”)

Controls the ANT-1774 over Ethernet or RS232. Available for Windows platforms.



2.1 App to Board Interfaces Definition

Select “Interface” button to define the interface details.



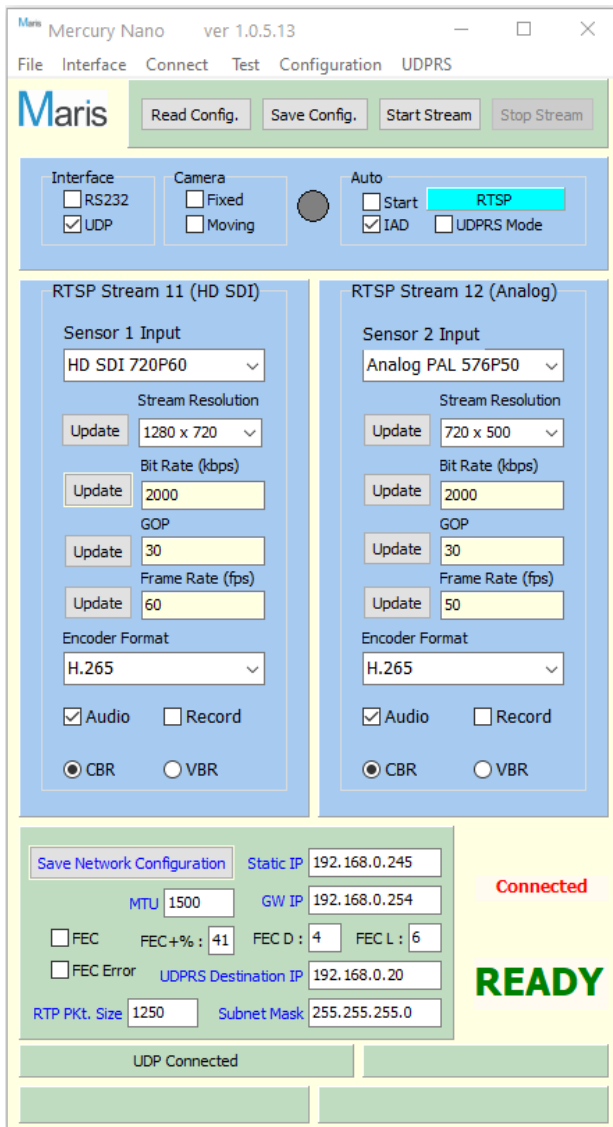
For RS232 select the correct comm port and “OK”.

For UDP enter PC IP (My IP) and boards IP (Mercury IP). Both addresses should be within the same subnet range.

Unless there're port conflicts leave the Source and Destination Port default values and “Save”.

2.2 Connect PC and Board

Check the RS232 or UDP box and select the “Connect” button.



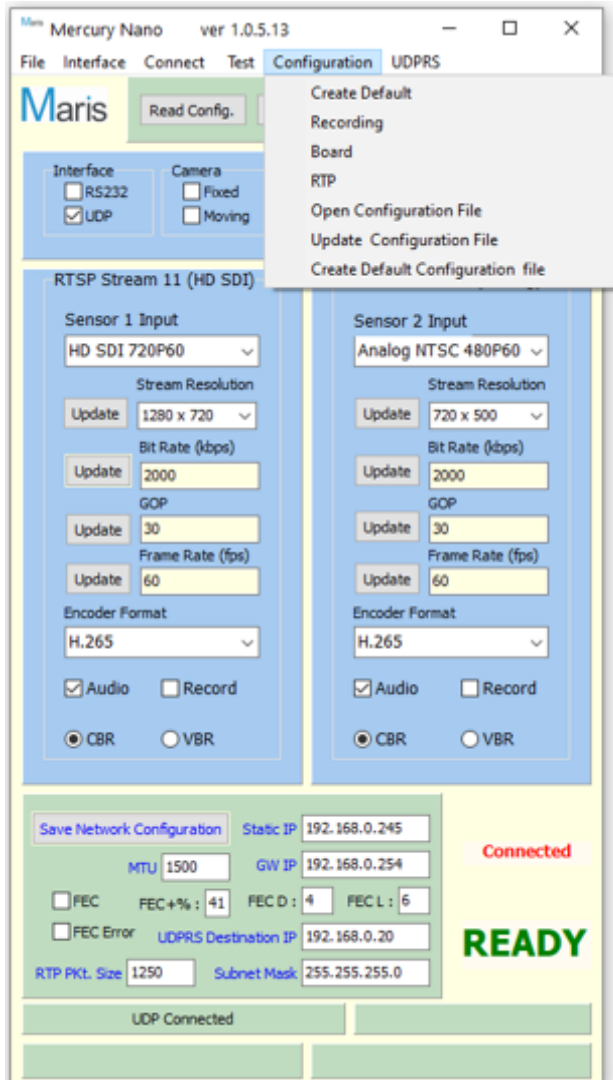
A successful connection will:

- Indicate **connected** and **READY**
- Automatically read and display the board's setup configuration

Notes:

- In the previous version it was necessary to use “Read Config”
- In the previous version it was necessary to “Save Config” if any parameter has been changed, on this version the App automatically saves only modified parameters when “Start Stream” is selected

2.3 Define Configuration



2.3.1 Create Default

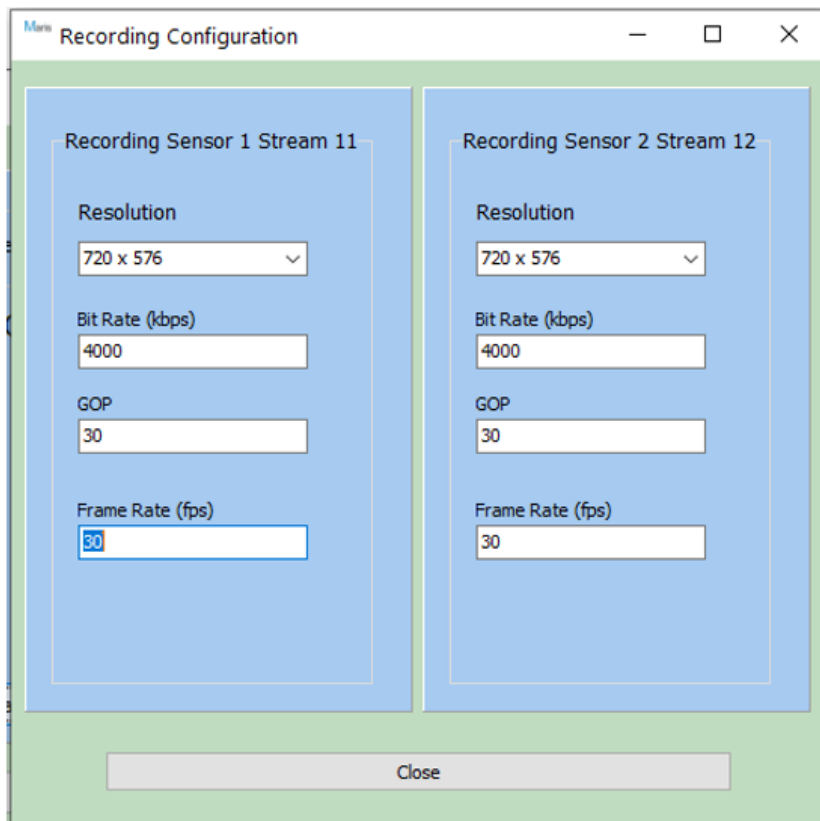
Sets the board to its default parameters (Factory Default).

2.3.2 Recording

The ANT-1774 enables 4 separated encoders, 2 for streaming and 2 for recording.

The recording parameters consist of:

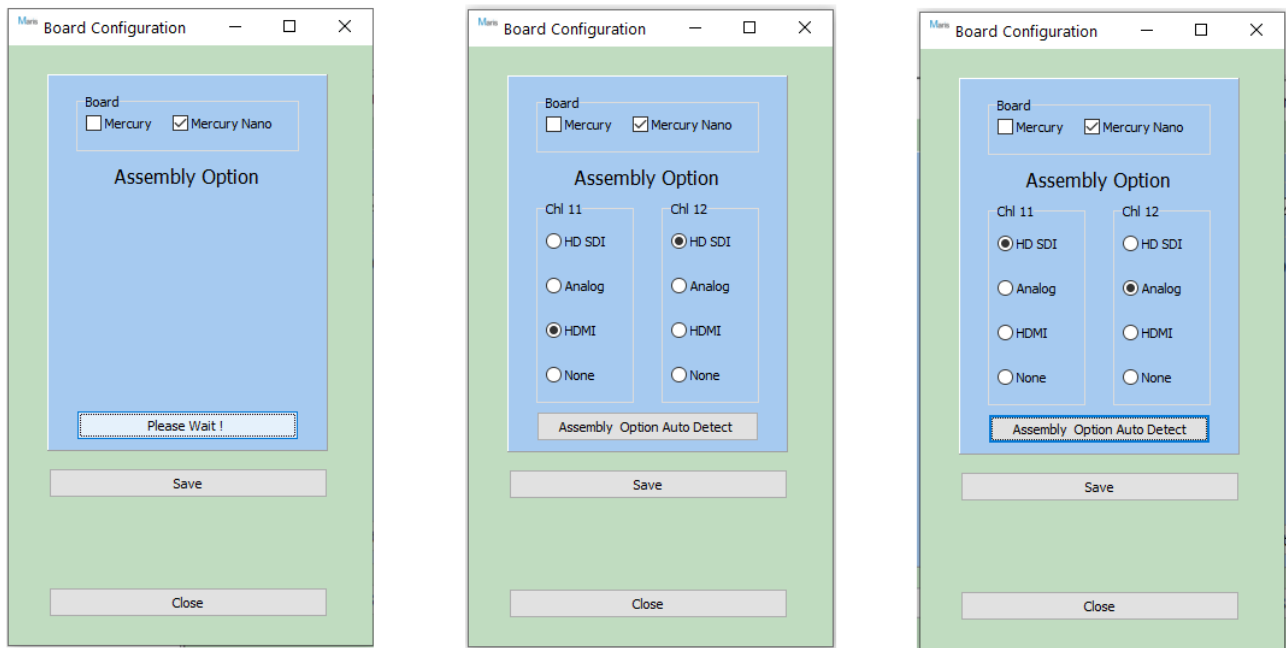
- Resolution \leq Input Source resolution
- Bitrate from 10Kbps to 102.4 Mbps
- GOP
- Frame Rate \leq Input Source frequency (frame rate)



2.3.3 Board

Board's assembly configuration should be defined once when first using it.

The "Assembly Option Auto Detect" searches and detects the video receiver modules assembled on the board and their physical location Channel 11 or Channel 12. It can be any combination of 2 inputs (if 2 were assembled) out of HDMI, HDSDI and Analog.



Use "Save" button upon search completion.

2.3.4 RTP

RTP configuration can be defined separately for each channel as follows:

- Session Type – Unicast or Multicast
- Destination IP – PC IP address for Unicast
- Input Port – Unicast/Multicast port number
- Multicast IP – Multicast IP address

The screenshot shows a window titled "RTP Configuration" with two columns for "RTP Stream 11" and "RTP Stream 12".

Field	RTP Stream 11	RTP Stream 12
Session Type	Unicast	Multicast
Destination IP	192.168.0.20	192.168.0.20
Input Port	1234	5698
Multicast IP	225.1.1.1	225.1.1.1

Below the fields are two "Create SDP File" buttons. At the bottom of the window, a note states: "Multicast IP must be in the range : 224.0.0.0 - 239.255.255.255" and a "Close" button is present.

“Create SDP File” creates SDP file to be used for RTP playback on VLC. The file is placed on the App directory.

2.3.5 Configuration File Management on PC

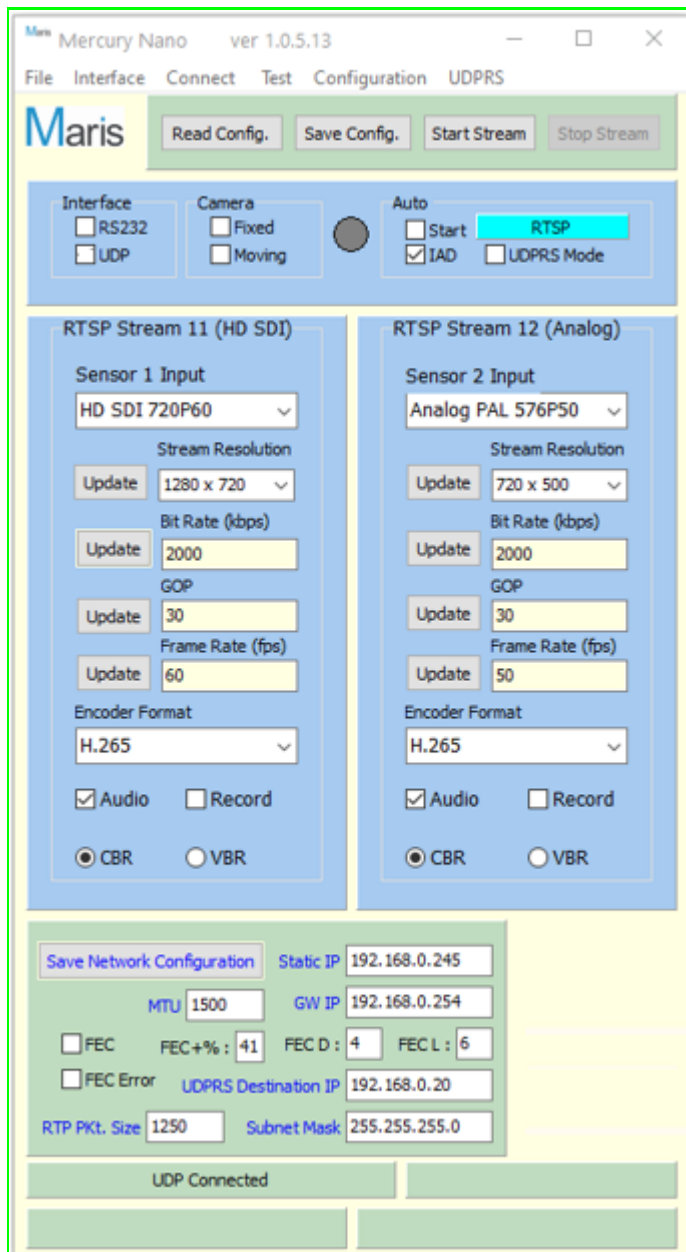
, modified (using Control application), saved on PC and copied back to board (using Burn application).

All these actions should be done when Control application isn't connected to the board.

2.3.5.1 Open Configuration File

Open a configuration file on PC. Such file can be created on PC using "Create Default Configuration File" or read from board to using Burn application.

The configuration parameters will appear on the Control application and can be modified.



2.3.5.2 Update Configuration File

Updates the Conrol application modified parameters in current configutration file.

File can be uploaded to board using Burn application

2.3.5.3 Create Default Configuration File

Creates default configuration file on PC.

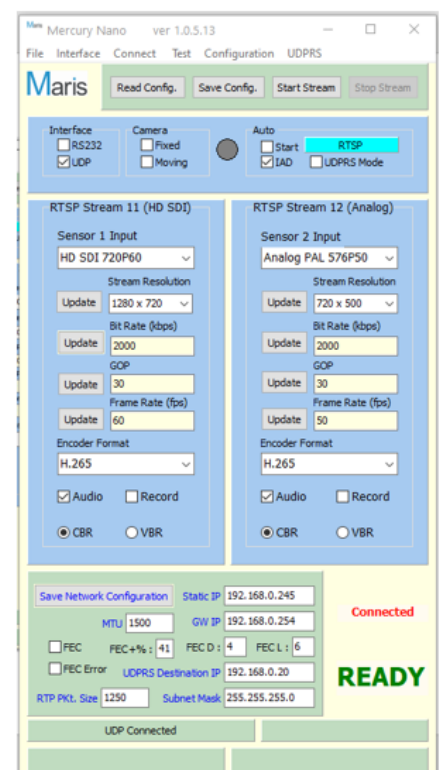
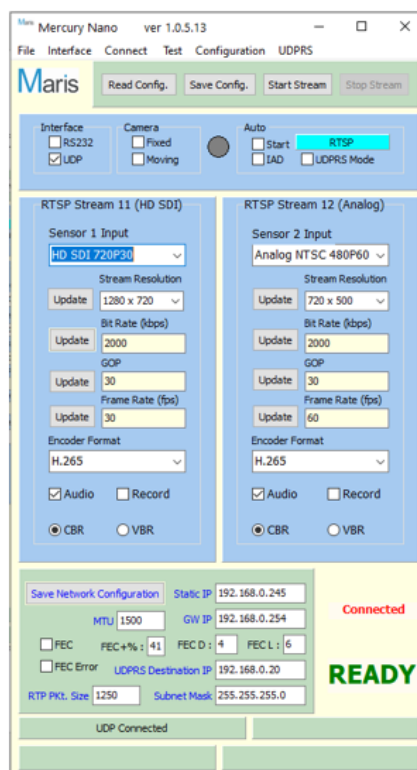
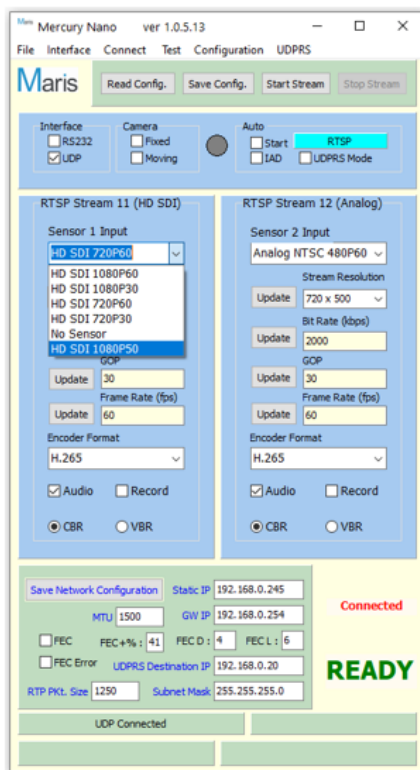
2.4 Channels Definition

The ANT-1774 support 2 channels simultaneously, defined as Channel 11 and Channel 12.

2.4.1 Input Source Definition

Following assembly configuration, video input source should be defined. It can be done manually if source resolution and frequency is known or automatically using the IAD (Input Automatic Detection) check box.

For each channel select any source definition out of the available list and then mark the IAD. The correct source definition will appear in a few seconds.



2.4.2 Encoding Parameters

Encoding parameters for each channel consist of:

- Stream Resolution \leq Input Source resolution
- Bitrate from 10Kbps to 102.4 Mbps
- GOP
- Frame Rate \leq Input Source frequency

Each parameter can be defined before streaming starts or can be modified on-the-fly using the “Update” button, which isn’t saved in configuration setup.

2.4.3 Other Streaming Parameters

Other parameters can be defined using the related check box:

- H.264 or H.265
- CBR or VBR
- Enable/Disable integrated audio
- Enable/Disable simultaneous recoding according to “Configuration/Record” setup

2.5 Network Parameters

Network parameters consist of: vxcx

- IP addresses:
 - Static IP – board’s IP address
 - GW IP – Gateway IP address
 - UDPRS – UDP to RS232 IP address
 - Subnet Mask
- MTU - maximum transmission unit
- RTP Packet Size
- 2D Forward Error Correction (“FEC”) Parameters:
 - FEC enable/disable
 - FEC D value – automatically changes FEC %
 - FEC L value – automatically changes FEC %
 - FEC bitrate load % - automatically sets equivalent D & L creating FEC % as close as possible to the selected % value
 - FEC Error enable/disable – generates stream errors for testing

A change in IP address should be followed by “Save Network Configuration”.

MTU can be changed on-the-fly.

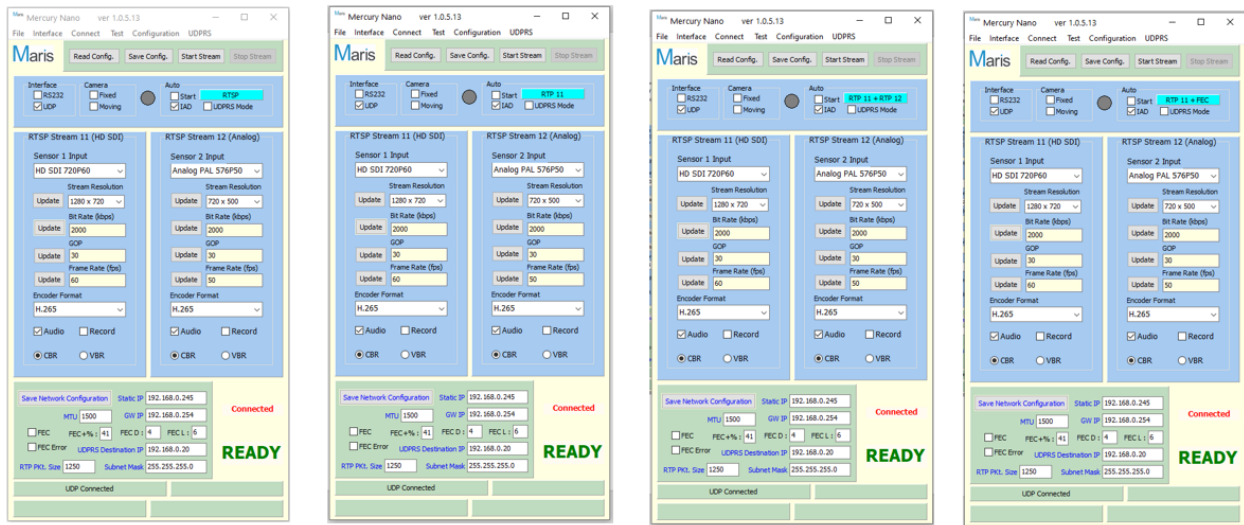
RTP Packet Size and FEC Parameters can’t be changed during streaming.

2.6 Streaming & Recording

2.6.1 Streaming

The ANT-1774 can stream 2 channels simultaneously. It may stream RTSP or RTP in Unicast or Multicast.

Streaming modes include, RTSP or RTP 11 or RTP 12 or RTP 11 + 12 or RTP 11 + FEC or RTP 12 + FEC



“Start Streaming” button initiates the pre-selected streaming mode.



Neptune Player or VLC may be used to initiate the stream in RTSP or receive the stream in RTP. Only Neptune Player supports the FEC. See Neptune Player user's manual.

Only single channel can be streamed with FEC.

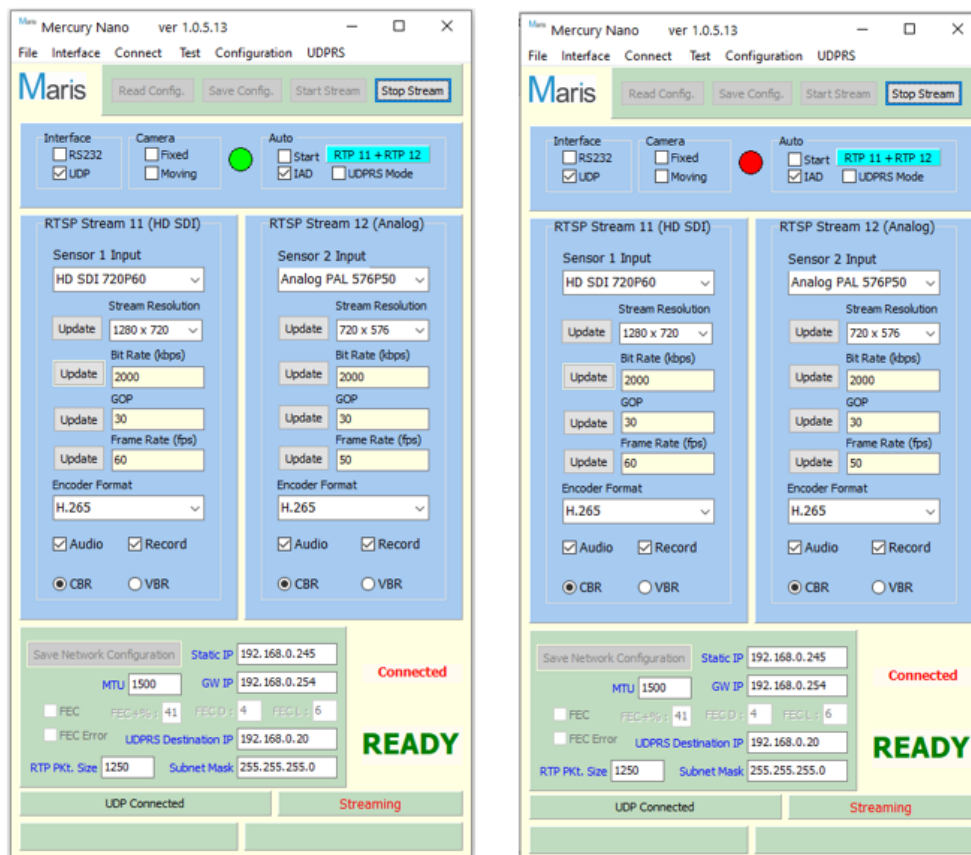
When using RTP 11 + FEC or RTP 12 + FEC the FEC is automatically enabled and it can be disabled or enabled on-the-fly using the FEC check box.

“Stop Stream” button stops the current streaming session.

2.6.2 Recording

Recording can be initiated only when the Record is checked, SD card is inserted and board is in streaming mode.

Click on Green circle in order to start reording, circle becomes Red. Click on Red circle in order to stop recording, circle becomes Green.



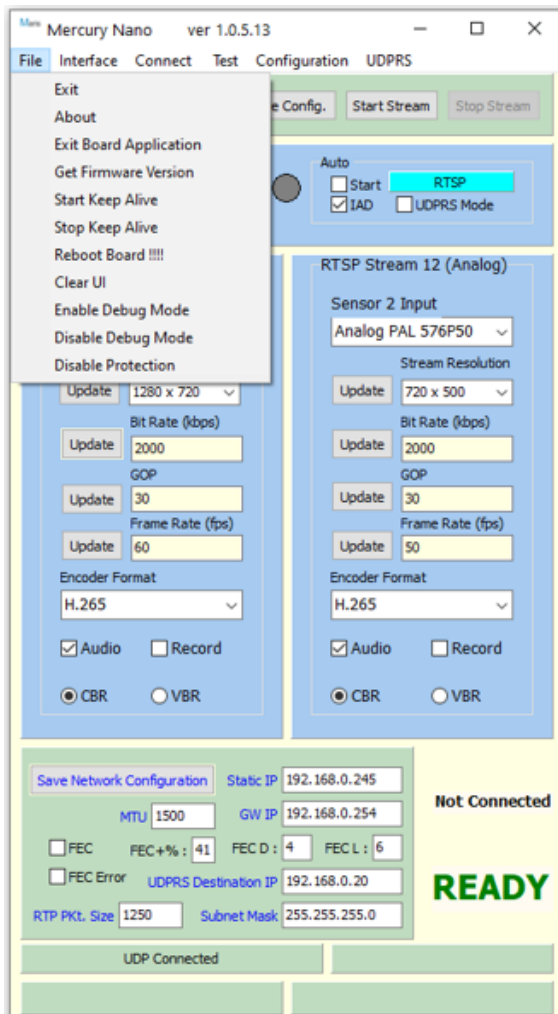
Notes:

- On previous version RTP streaming was activated by clicking on the RTP11 and/or RTP12 after “Start Streaming”.
- On previous version FEC was activated/deactivated from FEC check box only

2.7 File Functions

System utilities including:

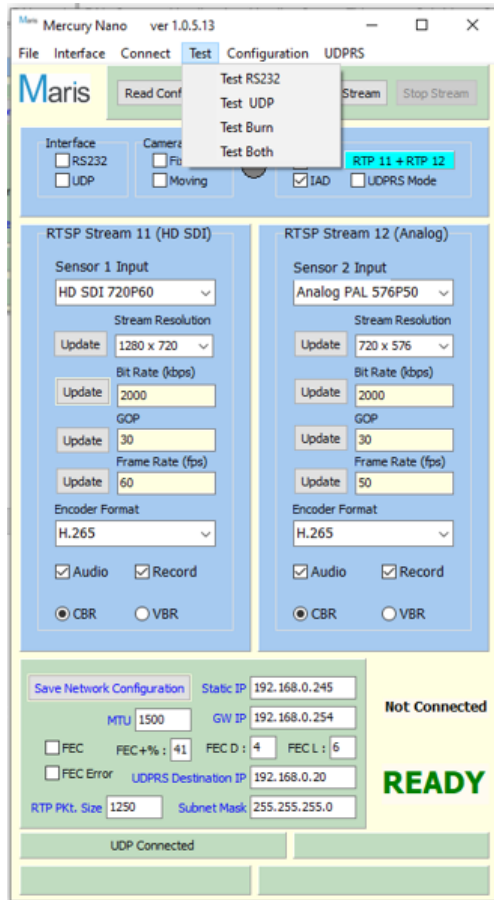
- Exit – from App
- About – App info
- Exit Board Application – stops board firmware running in order to enable new firmware burning
- Get Firmware Version – show board’s firmware version details
- Start Keep Alive – enables keep alive messages through connecting interface
- Stop Keep Alive – disables keep alive messages
- Reboot Board- restarts the board
- Clear UI – clears all App parameter fields, “Read Config” should be used to display parameters again
- Enable Debug Mode – Enables debug messages on terminal
- Disable Debug Mode – Disable debug messages on terminal
- Disable Protection – this feature has been already deleted, instead there will be a feature, which enables/disables log file information



2.8 Test

Tests connectivity for the following:

- RS232 – RS232 connection exists?
- UDP - UDP connection exists?
- Burn – monitors if burning is still in process?
- RS232 + UDP - RS232 + UDP connection exists?



2.9 UDPRS

Enables/Disables the UDP to RS232 function