



ANTRICA

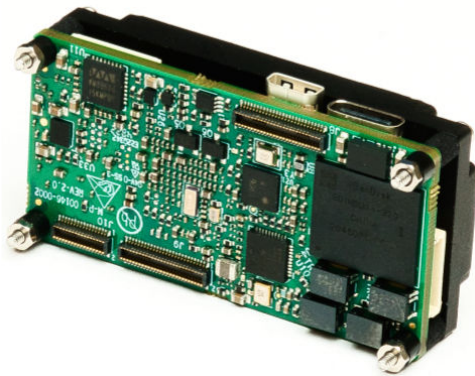
encoders | decoders

ICD Requirements

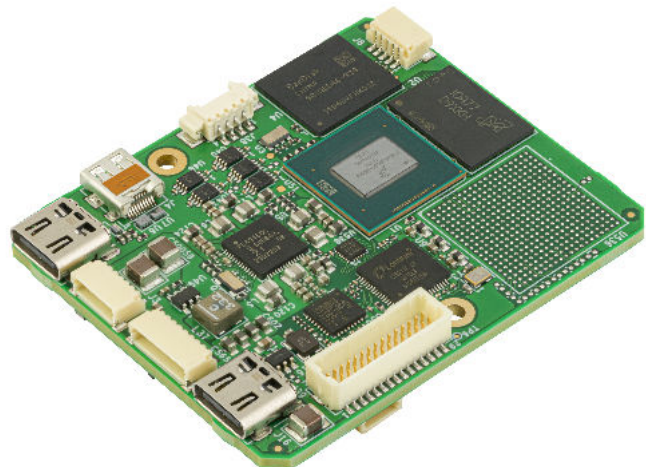
For

ANT-1776 family

ANT-1776 Nano



ANT-1776 ZB



Version	Date	Change Description	Name
1.0.0	20/10/2022		Nehama Novick
1.0.1	3/6/2023		Nehama Novick
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1 General

1.1 LAN Broadcast message for identifying the board from different networks

The board sends a broadcast message once a second to identify the board from different networks, broadcast address: 255.255.255.255:30003

1.2 Remote LAN protocol that controls and operate the LDVC board

Sending the commands for controlling and operate the board will be on port 3100. (Details of the commands see section 2 – API Messages)

1.3 RS232 Interface

- Bits per second: 115200
- Data bits: 8
- Parity: None
- Stop Bit: 1
- Flow Control: None

1.4 Definitions

- **Mux** - Object that is linked to the camera and unites 3 tracks within it – one for video, one for audio and one for data, through this object you can control, operate and configure the camera.
- **Stream File** – transport stream file including video, audio and metadata
- **Data File** – data file in the User's configuration

1.5 Message Encoding

Hexadecimal values will be preceded by a '0x' and the hex-digits (such as 0xAB) and decimal values will appear normally without any header.

The API Protocol is Binary Encoded, Little Endian (least significant byte is stored first).

1.6 Message Format

The message format is comprised of a fixed length Message Header and a variable length Message Data as follows:

Message Section	Field Name	Data Type	Value
<i>Message Header</i>	Message Sync	Byte	0xA5

	Message ID	Byte	
	Checksum	Byte	
	Data Length	Byte	
<i>Message Data</i>	Parameter 1	According to Message	
	...		
	Parameter N	According to Message	

Message Fields:

- **Message Sync** – A Sync byte (0xA5)
- **Message ID** – A unique message identifier
- **Checksum** – A Sum of all the Message (not include itself)
- **Data Length** – Total number of bytes in Message Data
- **Parameters 1 to N** – Message parameters

1.7 ACK/NAK Message Format

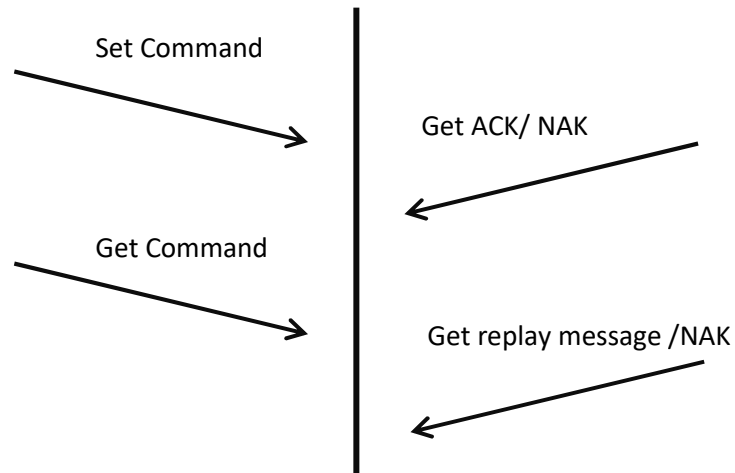
The message format is comprised of a fixed length Message Header and data as follows:

Message Section	Field Name	Data Type	Value
<i>Message Header</i>	Message Sync	Byte	0xA5
	ACK/NAK Message ID	Byte	0xFF
	Checksum	Byte	
	Data Length	Byte	3
<i>Message Data</i>	ACK/NAK	Byte	ACK - 0xBB NAK - 0xCC
	Message ID	Byte	
	Error Number	Byte	Not implemented now

Message Fields:

- **Message Sync** – A Sync byte (0xA5)
- **Data Number** – A unique message identifier for ack/nack message
- **Checksum** – A Sum of all the Message (not include itself)
- **Data Length** – Total number of bytes in Message Data
- **Data 0** - ACK (0xBB) or NACK (0xCC)
- **Data 1** –Message ID we ACK/NAK
- **Data 2** – A unique error identifier

1.8 Data Flow



A message sequence:

- The user sends a message to the board.
- In the case of “set command” the program returns the acknowledge (ACK) for success or not acknowledge (NAK) for failure.
- In the case of “get command” the program returns replay message for success or not acknowledge (NAK) for failure.

2 API Messages

Note: Each command that config the system is written to a configuration file.

2.1 Power Off (1)

Not implemented, future development.

Note: Shutting down the system after sending an ACK.

Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 1 Data Length = 4
4	MAGIC ID1	Byte	1	0xD
5	MAGIC ID2	Byte	1	0xE
6	MAGIC ID3	Byte	1	0xA
7	MAGIC ID4	Byte	1	0xD

Reply Message Structure: ACK/NAK

2.2 Set Time & Date (9)

Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 9 Data Length = 6
4	Hour	Byte	1	Value: 0 – 23
5	Minute	Byte	1	Value: 0 – 59
6	Second	Byte	1	Value: 0 – 59
7	Day	Byte	1	Value: 1 – 31
8	Month	Byte	1	Value: 1 – 12
9	Year	Byte	1	2 last digits of year, start from 2000 (13...)

Reply Message Structure: ACK/NAK

2.3 Get Time & Date (10)

Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 10 Data Length = 0

Reply Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 10 Data Length = 6
4	Hour	Byte	1	Value: 0 – 23
5	Minute	Byte	1	Value: 0 – 59
6	Second	Byte	1	Value: 0 – 59
7	Day	Byte	1	Value: 1 – 31
8	Month	Byte	1	Value: 1 – 12
9	Year	Byte	1	Year - 1900

2.4 Get Version (11)

Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 11 Data Length = 0

Reply Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 11 Data Length = 2
4	Version	Byte	1	
5	Subversion	Byte	1	

2.5 Set Factory Default (12)

Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 12 Data Length = 4
4	MAGIC ID1	Byte	1	0xD
5	MAGIC ID2	Byte	1	0xE
6	MAGIC ID3	Byte	1	0xA
7	MAGIC ID4	Byte	1	0xD

Reply Message Structure: ACK/NAK

2.6 Set Configuration Number (13)

Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 13 Data Length = 1
4	Config Number	Byte	1	0 – Config 1 (default) 1 – Config 2 2 – Config 3 3 – Config 4

Reply Message Structure: ACK/NAK

2.7 Get Configuration Number (14)

Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 14 Data Length = 0

Reply Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 14

				Data Length = 1
4	Config Number	Byte	1	0 – Config 1 (default) 1 – Config 2 2 – Config 3 3 – Config 4

2.8 Reboot System (15)

Note: Rebooting system after sending an ACK.

Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 15 Data Length = 4
4	MAGIC ID1	Byte	1	0xD
5	MAGIC ID2	Byte	1	0xE
6	MAGIC ID3	Byte	1	0xA
7	MAGIC ID4	Byte	1	0xD

Reply Message Structure: ACK/NAK

2.9 Set Camera Interface Config (16)

Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 16 Data Length = 2
4	CSI 1 ID	Byte	1	-1 – None 0 – HDSDI 1 – HDMI 2 – analog 3 – QAnalog 4 – Sony
5	CSI 2 ID	Byte	1	-1 – None 0 – HDSDI 1 – HDMI 2 – analog 3 – GAnalog 4 – Sony

Reply Message Structure: ACK/NAK**2.10 Get Camera Interface Config (17)****Message Structure:**

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 17 Data Length = 0

Reply Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 17 Data Length = 2
4	CSI 1 ID	Byte	1	-1 – None 0 – HDSDI 1 – HDMI 2 – analog 3 – GAnalog 4 – gs2971 5 – Sony
5	CSI 2 ID	Byte	1	-1 – None 0 – HDSDI 1 – HDMI 2 – analog 3 – GAnalog 4 – gs2971 5 – Sony

2.1 Get Camera Devices Info (18)

The function returns one device by ID from list.
When ID is wrong, it returns NAK.

Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 18 Data Length = 1
4	Camera Number	Byte	1	0 – HDSDI 1 – HDMI 2 – Analog

				4 – Quad Analog
--	--	--	--	-----------------

Reply Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 18 Data Length = 22
4	Camera ID	Byte	1	0 – HDSDI 1 – HDMI 2 – Analog 4 – Quad Analog
5	Type	Byte	1	0 – SD (Standard definition) 1 – HD (High Definition) 2 – Multiple Analog 3 – Generic
6-25	Camera Name	String	20	

2.2 Set Log Bits (19)

Bits for Error info and Debug message put in log files.

Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 19 Data Length = 4
4-7	Bits Mask	Int	4	

2.3 Get Log Bits (20)

Bits for Error info and Debug message put in log files.

Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 20 Data Length = 0

Replay Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 20 Data Length = 4
4-7	Bits Mask	Int	4	

2.4 Get Camera Info Count (21)**Message Structure:**

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 20 Data Length = 0

Replay Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 20 Data Length = 1
4	Count	Byte	1	

2.5 Get Camera Info (22)**Message Structure:**

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 40 Data Length = 1
4	Id	Byte	1	0-N

Replay Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 23 Data Length = 18
4	Id	Byte	1	0-3 – CSI0 4-7 – CSI1 8 – Virtual camera 9-12 – USB

				13-16 – ETH
5	Device Type	Byte	1	0 – CSI0 1 – CSI1 2 – USB 3 – Virtual camera 4 – GETH 5 – UART
6	mch	Byte	1	4 in case of quad analog witch channel
7	vstate	Byte	1	0 – No Exist 1 – Unlock 2 – Lock
8	vmode	Byte	1	0 – Progressive 1 – Interlaced 2 – Multi Channel
9	FPS	Byte	1	fps
10	Device	Byte	1	sensor device
11	Format	Byte	1	
12,13	Resolution Width	Byte	2	
14,15	Resolution Height	Byte	2	
13-16	Eth Ip	Byte	4	IP case of GETH
17,18	Eth port	Byte	2	port case of GETH

Reply Message Structure: ACK/NAK

2.6 Set UART Config (23)

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 23 Data Length = 12
4	UART Number	Byte		Values between 0 – 9
5	State	Byte	1	0 – Off 1 – On (default)
6	Baud Rate	Byte	1	0 – 2400 1 – 4800 2 – 9600 3 – 19200 4 – 38400 5 – 57600 6 – 115200 (default) 7 – 230400
7	Flow Control	Byte	1	0 – None (default) 1 – Hardware
8	Parity	Byte	1	0 – None

				1 – Odd 2 – Even 3 – Mark 4 – Space
9	Data Size	Byte	1	7 – 7 bits 8 – 8 bits
10-15	Reserved	Byte	6	

Reply Message Structure: ACK/NAK

2.7 Get UART Config (24)

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
	Header		4	Message ID – 24 Data Length = 0

Reply Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 24 Data Length = 12
4	UART Number	Byte	1	Values between 0 – 9
5	State	Byte	1	0 – Off 1 – On
6	Baud Rate	Byte	1	0 – 2400 1 – 4800 2 – 9600 (default) 3 – 19200 4 – 38400 5 – 57600 6 – 115200 7 – 230400
7	Flow Control	Byte	1	0 – None (default) 1 – Hardware
8	Parity	Byte	1	0 – None 1 – Odd 2 – Even 3 – Mark 4 – Space
9	Size	Byte		7- 7 bits 8 -8 bits
10-15	Reserved	Byte	6	

2.8 Set Network Interface (27)

Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 27 Data Length = 28
4	Network ID	Byte	1	0 – eth0 1 – usb0 2 – wlan0 3 – eth1
5	Type	Byte	1	For usb0: 0 – CDC Client 1 – CDC OST
6	Enabled	Byte	1	0 – Off 1 – On
7	Mode	Byte	1	0 – DHCP 1 – Manual 2 – DHCP Server
8-11	IP Address	Byte	4	For Manual mode
12-15	Mask Address	Byte	4	For Manual mode
16-19	Gateway Address	Byte	4	For Manual mode
20-23	Subnet	Byte	4	For DHCP Server mode
24-27	Range Min	Byte	4	For DHCP Server mode
28-31	Range Max	Byte	4	For DHCP Server mode

Reply Message Structure: ACK/NAK

2.9 Get Network Interface (28)

Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 28 Data Length = 1
4	Network ID	Byte		0 – eth0 1 – usb0 2 – wlan0 3 – eth1

Replay Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 28 Data Length = 28

4	Network ID	Byte	1	0 – eth0 1 – usb0 2 – wlan0 3 – eth1
5	Type	Byte	1	For usb0: 0 – CDC Client 1 – CDC OST
6	Enabled	Byte	1	0 – Off 1 – On
7	Mode	Byte	1	0 – DHCP 1 – Manual 2 – DHCP Server
8-11	IP Address	Byte	4	For Manual mode
12-15	Mask Address	Byte	4	For Manual mode
16-19	Gateway Address	Byte	4	For Manual mode
20-23	Subnet	Byte	4	For DHCP Server mode
24-27	Range Min	Byte	4	For DHCP Server mode
28-31	Range Max	Byte	4	For DHCP Server mode

2.10 Set Record Auto Delete (30)

Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 30 Data Length = 5
4	Auto Delete Files	Byte	1	0 – Off 1 – On
5-8	Disk Limit Size	Byte	4	In MB

Reply Message Structure: ACK/NAK

2.11 Get Record Auto Delete (31)

Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 31 Data Length = 0

Replay Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 31 Data Length = 5
4	Auto Delete Files	Byte	1	0 – Off 1 – On
5-8	Disk Limit Size	Byte	4	In MB

2.12 Set Fast Encode Params (38)

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 38 Data Length = 6
4	Mux Number	Byte	1	0 – mux 0 1 – mux 1 ... N-1 mux N-1
5	Active flag	Byte	1	Bit 0 – kbps Bit 1 – fps Bit 2 – scale
6	Bitrate	Byte	1	Out of 100 (for example - 0 for 7000 kbps)
7	Fps	Byte	1	
8	Width	Byte	1	Out of 8 (for example - 60 for 480)
9	Height	Byte	1	

Reply Message Structure: ACK/NAK

2.13 Get Capture Camera Status (40)

Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 40 Data Length = 1
4	Channel Number	Byte	1	Camera logical Channel Depend on the camera CSI and USB camera devices

Reply Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 40 Data Length = 9
4	Channel Number	Byte	1	Camera logical Channel Depend on the camera CSI and USB camera devices
5	Status	Byte	1	0 – Not Exist 1 – Unlock 2 – Lock
6	Resolution - std	Byte	1	Reserved
7	Interlaced	Byte	1	0 – Unknown 1 – Noninterlaced 2 – Interlaced
8	Fps	Byte	1	0 – Unknown 30,60,25,50
9-10	Resolution - Width	Byte	2	
11-12	Resolution - Height	Byte	2	

2.14 Setup Streaming Mux (41)

1. When the user selects unicast, the system can transmit broadcast if the IP destination is broadcast IP, for example (192.168.0.255)
Or multicast when the IP is multicast example(240.1.1.2)
2. In RTSP protocol the user needs to enable the RTSP server because the IP transition and ports are selected by the client.

Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 41 Data Length = 16
4	Mux Number	Byte	1	0 – N
5	Auto	Byte	1	BIT 0 – Auto Streaming BIT 1 – Auto Recording BIT 2 – Auto Display BIT 3 - VMD 0 – Off 1 – On
6	Video Channel	Byte	1	-1 None, Logical camera channel number depend on the camera devices

7	Audio Channel	Byte	1	-1 – None 0 – Channel1 1 – Channel2
8	Data Channel	Byte	1	-1 – None 0 – Data1 1 – Data2
9	Interface	Byte	1	-1 – None 0 – Network
10	Protocol	Byte	1	When Interface = Network 1 – TS 2 – RTP 3 – RTSP 4 – RTMP
11	Net Mode	Byte	1	When Interface = Network Reserved
12	IP Address #1	Byte	1	When Interface = Network 1 st Value
13	IP Address #2	Byte	1	When Interface = Network 2 nd Value
14	IP Address #3	Byte	1	When Interface = Network 3 rd Value
15	IP Address #4	Byte	1	When Interface = Network 4 th Value
16	Port Address #1	Byte	1	When Interface = Network 1 st Value
17	Port Address #2	Byte	1	When Interface = Network 2 nd Value
18	UART Port	Byte	1	When Interface = UART
19	FB Number	Byte	1	

Reply Message Structure: ACK/NAK

2.15 Get Streaming Mux (42)

Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 42 Data Length = 1
4	Mux Number	Byte	1	0 – N

Replay Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 42 Data Length = 16
4	Mux Number	Byte	1	0 – N
5	Auto	Byte	1	Bits Mask: BIT 0 – Auto Streaming BIT 1 – Auto Recording BIT 2 – Auto Display BIT 3 - VMD 0 – Off 1 – On
6	Video Channel	Byte	1	Camera logical Channel Depend on the camera CSI and USB camera devices
7	Audio Channel	Byte	1	-1 – None 1 – Channel1 2 – Channel2
8	Data Channel	Byte	1	-1 – None 1 – Data1 2 – Data2
9	Interface	Byte	1	-1 – None 0 – Network 1 – Data Clock 2 – UART
10	Protocol	Byte	1	When Interface = Network: 0 – Private 1 – TS 2 – RTP 3 – RTSP 4 – RTMP
11	Net Mode	Byte	1	When Interface = Network 0 – Unicast 1 – Multicast
12	IP Address #1	Byte	1	When Interface = Network 1 st Value
13	IP Address #2	Byte	1	When Interface = Network 2 nd Value
14	IP Address #3	Byte	1	When Interface = Network 3 rd Value
15	IP Address #4	Byte	1	When Interface = Network 4 th Value
16	Port Address #1	Byte	1	When Interface = Network 1 st Value
17	Port Address #2	Byte	1	When Interface = Network 2 nd Value
18	UART Port	Byte	1	When Interface = UART
19	FB Number	Byte	1	

2.16 Set Streaming Operation (43)

After setting the mux and all other parameters the user can start / stop any stream.

Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 43 Data Length = 2
4	Mux Number	Byte	1	0 – N
5	Operation	Byte	1	0 – Stop 1 – Start

Reply Message Structure: ACK/NAK

2.17 Set Audio Source mode (45)

Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 45 Data Length = 10
4	Volume	Byte	1	(Default 20)
5	Channel	Byte	1	0 – Channel1 1 – Channel2
6	Codec	Byte	1	Values between 0 – 9
7	Sample Rate	Byte	1	0 – 8000 1 – 44100 (default) 2 – 48000
8-10	Bitrate	Byte	3	
11	Bit Per Sample	Byte	1	8 Or 16 (16 is default)
12	Channels	Byte	1	1 – Mono (default) 2 – Stereo
13	Input	Byte	1	0 – Line In 1 – Mic

Reply Message Structure: ACK/NAK

2.18 Get Audio Source mode (46)

Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 46 Data Length = 1
4	Channel Number	Byte	1	0 – Channel 1 1 – Channel 2

Reply Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 46 Data Length = 10
4	Volume	Byte	1	(Default 20)
5	Channel Number	Byte	1	0 – Channel 1 1 – Channel 2
6	Codec	Byte	1	Values between 0 – 9
7	Sample Rate	Byte	1	0 – 8000 1 – 44100(default) 2 – 48000
8-10	Bitrate	Byte	3	
11	Bit per sample	Byte	1	8 Or 16 (16 is default)
12	Channels	Byte	1	1 – Mono (default) 2 – Stereo
13	Input	Byte	1	0 – Line In 1 – Mic

2.19 Set Video Encoding Params (47)

Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 47 Data Length = 11
4	Mux Number	Byte	1	0-N
5	Encode Mode	Byte	1	0 – VBR 1 – CBR (default) 2 – VBR Block
6	Bitrate	Byte	1	When Encode Mode = CBR: N*100Kbs (default 30) Default: 5000
7	GOP	Byte	1	Default: 30
8	qFrame	Byte	1	Default: 26 (0-50)
9	ForceIONgop	Byte	1	Default: 1 (0 -1)
10	hrdCpbSize	Byte	1	Default: 0 (0 –127)
11	PBQpMax	Byte	1	Default: 50 (0-50)

12	PBQpMin	Byte	1	Default: 10 (0-50)
13	RcIntraQp	Byte	1	Default: 26 (0-50)
14	IfreshCyclic	Byte	1	Default: 30 (1-255)

Reply Message Structure: ACK/NAK

2.20 Get Video Encoding Quality (48)

Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 48 Data Length = 1
4	Mux Number	Byte	1	See video channels

Reply Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 48 Data Length = 6
4	Mux Number	Byte	1	0-N
5	Encode Mode	Byte	1	0 – VBR 1 – CBR
6	Bitrate	Byte	1	CBR N*100Kbs (default 30)
7	GOP	Byte	1	CBR 30 (default)
8	qFrame	Byte	1	
9	ForceIONgop	Byte	1	
10	hrdCpbSize	Byte	1	
11	PBQpMax	Byte	1	
12	PBQpMin	Byte	1	
13	RcIntraQp	Byte	1	
14	IfreshCyclic	Byte	1	

2.21 Set Video Frame Rate (49)

Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
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0-3	Header		4	Message ID – 49 Data Length = 4
4	Mux Number	Byte	1	0 – N
5	Frame Rate	Byte	1	0 – Full (default) 1 – Time lapse
6	Time Laps	Byte	1	Time lapse 30(default) FPS
7	deinterlace	Byte	1	

Reply Message Structure: ACK/NAK

2.22 Get Video Frame Rate (50)

Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 50 Data Length = 1
4	Mux Number	Byte	1	0 – N

Reply Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 50 Data Length = 4
4	Mux Number	Byte	1	0 – N
5	Frame Rate	Byte	1	0 – Full 1 – Time lapse
6	Time Lapse	Byte	1	Time lapse Fps
7	Reserved	Byte	1	

2.23 Set ROI (51)

Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 51 Data Length = 8
4	Mux Number	Byte	1	
5	Mode	Byte	1	0 – Disabled(default) 1 – ROI Zoom 2 – Auto Full D1

				3 – Auto 4CIF 4 – Auto CIF 5 - Scale
6	Source Width	Byte	1	[1-255] 1= 8,2-16, ...
7	Source Height	Byte	1	[1-255] 1= 8,2-16, ...
8	Source X	Byte	1	[1-255] 1= 8,2-16, ...
9	Source Y	Byte	1	[1-255] 1= 8,2-16, ...
10	Dist Width	Byte	1	[1-255] 1= 8,2-16, ...
11	Dist Height	Byte	1	[1-255] 1= 8,2-16, ...

Reply Message Structure: ACK/NAK

2.24 Get ROI (52)

Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 52 Data Length = 1
	Mux Number	Byte		0 – N

Reply Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 52 Data Length = 8
4	Mux Number	Byte	1	0 – N
5	Mode	Byte	1	0 – Disabled(default) 1 – ROI Zoom 2 – Scale
6	Source Width	Byte	1	[1-255] 1= 8,2-16, ...
7	Source Height	Byte	1	[1-255] 1= 8,2-16, ...
8	Source X	Byte	1	[1-255] 1= 8,2-16, ...
9	Source Y	Byte	1	[1-255] 1= 8,2-16, ...
10	Dist Width	Byte	1	[1-255] 1= 8,2-16, ...
11	Dist Height	Byte	1	[1-255] 1= 8,2-16, ...

2.25 Set Capture Overlay (53)

Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
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0-3	Header		4	Message ID – 53 Data Length = 9 + text length
4	Mux ID	Byte	1	0 – N
5	Overlay ID	Byte	1	Number from 0 – 3
6	Mode	Byte	1	0 – Disabled(default) 1 – Enabled
7	Location	Byte	1	0 – Top-R 1 – Top-L 2 – Bottom-R (default) 3 – Bottom-L 4 – Defined
8	Type	Byte	1	0 – user text 1 – time + frame no 2 – GPS
9	Color	Byte	1	0 – Black 1 – White 2 – Red 3 – Green 4 – Blue 5 – Yellow 6 – Orange
10	H Pixel Position	Byte	1	When Location = Defined Value: N/8
11	V Pixel Position	Byte	1	When Location = Defined Value: N/8
12	Order by	Byte	1	0 – One Line 1 – Lines
13-92	Text	String	80	ASCII String

Reply Message Structure: ACK/NAK

2.26 Get Capture Overlay (54)

Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 54 Data Length = 2
4	Mux ID	Byte	1	0 – N
5	Overlay ID	Byte	1	Number from 0 – 3

Reply Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
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0-3	Header		4	Message ID – 54 Data Length = 9 + text length
4	Mux ID	Byte	1	0 – N
5	Overlay ID	Byte	1	Number from 0 – 3
6	Mode	Byte	1	0 – Disabled(default) 1 – Enabled
7	Location	Byte	1	0 – Top-R 1 – Top-L 2 – Bottom-R (default) 3 – Bottom-L 4 – Defined
8	Type	Byte	1	0 – user text 1 – time + frame no 2 – GPS
9	Color	Byte	1	0 – Black 1 – White 2 – Red 3 – Green 4 – Blue 5 – Yellow 6 – Orange
10	H Pixel Position	Byte	1	When Location = Defined Value = N/8
11	V Pixel Position	Byte	1	When Location = Defined Value = N/8
12	Order by	Byte	1	0 – One Line 1 – Lines
13-92	Text	String	80	ASCII String

2.27 Get Active Interface Network (55)

Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 55 Data Length = 1
4	Network ID	Byte	1	0 – eth0 1 – eth1

Reply Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 55 Data Length = 12

4	Network ID	Byte	1	0 – eth0 1 – eth1 2-3 - USB#
5	Is Exist	Byte	1	0 – No 1 – Yes
6-11	MAC Address	Byte	6	Little endian
12-15	IP Address	Byte	4	Little endian

2.28 Set Recording Operation (58)

After setting the mux and all other parameters, the user can start / stop each stream

Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – Data Length = 2
4	Mux Number	Byte	1	0 – N
5	Operation	Byte	1	0 – Stop 1 – Start record 2 – Start record TS

Reply Message Structure: ACK/NAK

2.29 Get Active Mux State (59)

Returns byte of status bits for each mux (ON/OFF).

Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 59 Data Length = 0

Reply Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 59 Data Length = 4
4-N	Mux 1-N	Byte	1	Bits mask: BIT 0 – Streaming BIT 1 – Recording BIT 2 – JPEG

				BIT 3 – Display 0 – Off 1 – On
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2.30 Get Audio Codec (61)

If Codec does not exist, return NAK

Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 61 Data Length = 1
4	Codec ID	Byte	1	Values between 0 – 9

Reply Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 61 Data Length = 21
4	Codec ID	Byte	1	Values between 0 – 9
5-24	Codec Name	String	20	

2.31 Set Deinterlace Params (66)

Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 66 Data Length = 3
4	Mux Number	Byte	1	0 – N
5	Mode	Byte	1	0 – Disable 1 – Low 2 – Medium 3 – High
6	Operational	Byte	1	0 – Hardware 1 – Software

Reply Message Structure: ACK/NAK

2.32 Get Deinterlace params (67)

Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 67 Data Length = 1
	Mux Number	Byte	1	0 – N

Reply Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 67 Data Length = 3
4	Mux	Byte	1	0 – N
5	Mode	Byte	1	0 – Disable 1 – Low 2 – Medium 3 – High
6	Operational	Byte	1	0 – Hardware 1 – Software

2.33 Network Stream Player Operation (70)

Note: The player can display each channel on several displays.

Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 70 Data Length = 2
4	Mux Number	Byte	1	0 – N
5	Operation	Byte	1	0 – Stop 1 – Start

Reply Message Structure: ACK/NAK

2.34 Get Network Player State (72)

Note: Each bit from 0 to 5 represents a channel.
Bit 0: stops the activity of the channel.

Bit 1: starts the channel activity.
 (Start/Stop Network streaming switch for each channel)

Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 72 Data Length = 0

Reply Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 72 Data Length = 1
	Demux ID	Byte	1	Bits Mask. Demux Number 0 – N 0 – Off 1 – On

2.51 Set Network Playback Parameters (74)

Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 74 Data Length = 25
4	Demux ID	Byte	1	0-N Demuxer Number
5	Auto	Byte	1	0 – Off 1 – On
6	Interface	Byte	1	0 – Network 1 – Data Clock 2 – UART
7	Protocol	Byte	1	When Interface = Network 0 – Private 1 – TS 2 – RTP 3 – RTSP
8	Net Mode	Byte	1	When Interface = Network 0 – Unicast 1 – Multicast
9	Port Address #1	Byte	1	When Interface = Network 1st Value
10	Port Address #2	Byte	1	When Interface = Network

				2nd Value
11	IP Address #1	Byte	1	When Net Mode = Multicast 1 st Value
12	IP Address #2	Byte	1	When Net Mode = Multicast 2 nd Value
13	IP Address #3	Byte	1	When Net Mode = Multicast 3 rd Value
14	IP Address #4	Byte	1	When Net Mode = Multicast 4 th Value
15	UART Port	Byte	1	When Interface = UART
16	Destination Base Port #1	Byte	1	1st Value
17	Destination Base Port #2	Byte	1	2nd Value
18	Destination IP #1	Byte	1	1 st Value
19	Destination IP #2	Byte	1	2 nd Value
20	Destination IP #3	Byte	1	3 rd Value
21	Destination IP #4	Byte	1	4 th Value
22	Demux Destination Mode	Byte	1	0 – Separated 1 – Combined
23	Video Flags	Byte	1	BIT 0 – FB 0 BIT 1 – FB 1 BIT 2 – FB 2
24	Audio Flags	Byte	1	BIT 0 – Channel 1 BIT 1 – Channel 2
25	Data Flags	Byte	1	BIT 0 – Data 1 BIT 1 – Data 2
26	Volume	Byte	1	Values between 0 - 100
27-28	Delay	Byte	2	MS value

Reply Message Structure: ACK/NAK

2.52 Get Playback Parameters (75)

Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 75 Data Length = 1
4	Demux ID	Byte	1	0 – N

Reply Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
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0-3	Header		4	Message ID – 75 Data Length = 25
4	Demux ID	Byte	1	0 – N
5	Auto	Byte	1	0 – Off 1 – On
6	Interface	Byte	1	0 – Network 1 - Data Clock 2 – UART
7	Protocol	Byte	1	When Interface = Network 1 – TS 2 – RTP 3 - RTSP
8	Net Mode	Byte	1	When Interface = Network 0 – Unicast 1 – Multicast
9	Port Address #1	Byte		When Interface = Network 1 st Value
10	Port Address #2	Byte	1	When Interface = Network 2 nd Value
11	IP Address #1	Byte	1	When Net Mode = Multicast 1 st Value
12	IP Address #2	Byte	1	When Net Mode = Multicast 2 nd Value
13	IP Address #3	Byte	1	When Net Mode = Multicast 3 rd Value
14	IP Address #4	Byte	1	When Net Mode = Multicast 4 th Value
15	UART Port	Byte	1	When Interface = UART
16	Destination Base Port #1	Byte	1	1 st Value
17	Destination Base Port #2	Byte	1	2 nd Value
18	Destination IP #1	Byte	1	1 st Value
19	Destination IP #2	Byte	1	2 nd Value
20	Destination IP #3	Byte	1	3 rd Value
21	Destination IP #4	Byte	1	4 th Value
22	Demux Destination Mode	Byte	1	0 – Separated 1 – Combined
23	Video Flags	Byte	1	BIT 0 – FB 0 BIT 1 – FB 1 BIT 2 – FB 2
24	Audio Flags	Byte	1	BIT 0 – Channel 1 BIT 1 – Channel 2
25	Data Flags	Byte	1	BIT 0 – Data 1 BIT 1 – Data 2
26	Volume	Byte	1	Values between 0 - 100
27-28	Delay	Byte	2	MS value

2.53 Get Video Codec (81)

Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 81 Data Length = 0
4	index	byte	1	

Replay Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 81 Data Length = 1
4	index	Byte	1	
5-25	Codec name	Byte	20	

2.1 Set Extended Video Codec (82)

Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 82 Data Length = 1
4	index	Byte	1	
5	Codec	Byte	1	0–H264 1–MP2 2–MJPEG 3–HEVC
6	File format	Byte	1	
7	color	Byte	1	0–Gray-Level 1–Colorful
8	Ts flush	Byte	1	0–OFF 1–ON
9	Mirror	Byte	1	0–None 1–Vertical 2–Horizontal 3–Vertical &Horizontal
10	Rotate	Byte	1	0–0° 1–90° 2–180° 3–270°

Reply Message Structure: ACK/NAK**2.2 Get Extended Video Codec (83)****Message Structure:**

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 83 Data Length = 0
4	index	byte	1	

Replay Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 83 Data Length = 1
4	index	Byte	1	
5	Codec	Byte	1	0–H264 1–MP2 2–MJPEG 3–HEVC
6	File format	Byte	1	
7	color	Byte	1	0–Gray-Level 1–ColorFul
8	Ts flush	Byte	1	0–OFF 1–ON
9	Mirror	Byte	1	0–None 1–Vertical 2–Horizontal 3–Vertical &Horizontal
10	Rotate	Byte	1	0–0° 1–90° 2–180° 3–270°

2.3 Get Current Mount (86)**Message Structure:**

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 86 Data Length = 0

Replay Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 86 Data Length = 1
4	Device	Byte	1	0 – No Device 1 – sd1 2 – sda1

2.4 Set Record Mode (87)

Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 87 Data Length = 16
4	Mux ID	Byte	1	Mux Number 0 - N
5	Index Mode	Byte	1	0 – Off 1 – On
6	Split Mode	Byte	1	0 – Auto 1 – User 2 – None
7-10	Split Time	Byte	4	In Seconds
11	Split Naming	Byte	1	0 – Time + Index 1 – New Time
12	Disc Sync	Byte	1	0 – Off 1 – On
13-14	Sync Cycle MS	Byte	2	
15	Cycle mode	Byte	1	0 – Off 1 – On
16-19	Cycle time (sec)	Byte	4	Cycle mode = On

Reply Message Structure: ACK/NAK

2.5 Get Record Mode (88)

Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 88 Data Length = 1
0	Mux ID	Byte	1	0 – N

Reply Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 88 Data Length = 16
4	Mux ID	Byte	1	0 – N
5	Mode	Byte	1	0 – Off 1 – On
6	Split Mode	Byte	1	0 – Auto 1 – User 2 – None
7-10	Split Time	Byte	4	
11	Split Naming	Byte	1	0 – Time + Index 1 – New Time
12	Disc Sync	Byte	1	0 – Off 1 – On
13-14	Sync Cycle MS	Byte	2	
15	Cycle mode	Byte	1	0 – Off 1 – On
16-19	Cycle time (sec)	Byte	4	Cycle mode = On

2.6 Get HW Error Count (94)**Message Structure:**

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 94 Data Length = 0

Reply Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 94 Data Length = 1
4	Errors Count	Byte	1	

2.7 Get HW Error Info (95)**Message Structure:**

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 95 Data Length = 1
4	Error Index	Byte	1	Values between 0 to Errors Count

Reply Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 95 Data Length = 63
4	Error Index	Byte	1	
5	Type	Byte	1	0 – Analog Camera 1 – Digital Camera 2 – Display 3 – Flash 4 – Memory 5 – Disk 6 – SD 7 – UART 8 – Ethernet
6	Error	Byte	1	0 – None 1 – Chip IO 2 – Memory
7-46	Name	String	40	
46-65	Reserved	Byte	20	

Note: If the device does not exist Replay Message is NAK

2.8 Reset HW Errors (96)

Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 96 Data Length = 0

Reply Message Structure: ACK/NAK

2.9 Set TTL (97)

Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 97 Data Length = 1
4	TTL	Byte	1	

Reply Message Structure: ACK/NAK

2.10 Get TTL (98)

Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 98 Data Length = 0

Reply Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 98 Data Length = 1
4	TTL	Byte	1	

2.11 Get Storage Information (100)

Note: If the device does not exist, Replay Message is NAK

Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 100 Data Length = 1
4	Device ID	Byte	1	

Reply Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 100 Data Length = 50

4	Device ID	Byte	1	
5-8	Size	Byte	4	in MB
9-12	Free Size	Byte	4	in MB
13	Format	Byte	1	0 – FAT 1 – EXT (x)
14-33	Name	String	20	
34-53	Reserved	Byte	20	

2.12 Get UART Device (101)

If UART driver is not exists return NAK

Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 101 Data Length = 1
4	UART Number	Byte	1	Values between 0 – 9

Reply Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 101 Data Length = 21
4	UART Number	Byte	1	Values between 0 – 9
5-24	UART Name	String	20	

2.13 Set UART Parameters for UART to eth (102)

Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 102 Data Length = 23
4	UART Number	Byte	1	Values between 0 – 9
5	State	Byte	1	0 – Off (default) 1 – On
6	Source IP #1	Byte	1	1 st Value
7	Source IP #2	Byte	1	2 st Value
8	Source IP #3	Byte	1	3 st Value
9	Source IP #4	Byte	1	4 st Value
10	Source Port #1	Byte	1	1 st Value
11	Source Port #2	Byte	1	2 nd Value
12	Delay	Byte	1	MS
13	Baud Rate	Byte	1	0 – 2400

				1 – 4800 2 – 9600 (default) 3 – 19200 4 – 38400 5 – 57600 6 – 115200 7 – 230400
14	Flow Control	Byte	1	0 – None(default) 1 – HW
15	Parity	Byte	1	0 – None (default) 1 – Odd 2 – Even 3 – Mark 4 – Space
16	Size	Byte	1	7 - 7 bits 8 - 8 bits (default)
17-20	Destination IP	Byte	4	
21-22	Destination Port	Byte	2	
23	Net Protocol	Byte	1	0 – UDP 1 – TCP
24-26	Reserved	Byte	3	

Reply Message Structure: ACK/NAK

2.14 Get UART Parameters (103)

Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 103 Data Length = 1
	UART Number	Byte	1	Values between 0 – 9

Reply Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 103 Data Length = 23
4	UART Number	Byte	1	Values between 0 – 9
5	State	Byte	1	0 – Off 1 – On
6	Source IP #1	Byte	1	1 st Value
7	Source IP #2	Byte	1	2 st Value
8	Source IP #3	Byte	1	3 st Value
9	Source IP #4	Byte	1	4 st Value

10	Source Port #1	Byte	1	1 st Value
11	Source Port #2	Byte	1	2nd Value
12	Delay	Byte	1	
13	Baud Rate	Byte	1	0 – 2400 1 – 4800 2 – 9600 (default) 3 – 19200 4 – 38400 5 – 57600 6 – 115200 7 – 230400
14	Flow Control	Byte	1	0 – None 1 – HW
15	Parity	Byte	1	0 – None 1 – Odd 2 – Even 3 – Mark 4 – Space
16	Size	Byte	1	7 – 7 bits 8 – 8 bits
17-20	Destination IP	Byte	4	
21-22	Destination Port	Byte	2	
23	Net Protocol	Byte	1	0 – UDP 1 – TCP
24-26	Reserved	Byte	3	

2.15 Get Temperature (110)

Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 110 Data Length = 0

Reply Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 110 Data Length = 1
4	Temperature	Byte	1	Celsius

2.16 Set RTSP Server (111)

Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 111 Data Length = 68
4	Mode	Byte	1	0 – Off 1 – On
5	RTSP Port	Byte	2	
6	Authentication	Byte	1	0 – yes 1 – no
7-38	user	string	32	
39-70	password	string	32	
71-3	RTMP Port	Byte	2	

Reply Message Structure: ACK/NAK

2.17 Get RTSP Server (112)

Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 112 Data Length = 0

Reply Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 112 Data Length = 3
4	Mode	Byte	1	0 – Off 1 – On
5	Port	Byte	2	

2.18 Get System Info (113)

If Codec is not existing return NAK

Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 113 Data Length = 1
4	Codec Number	Byte	1	Values between 0 – 9

Reply Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 113 Data Length = 166
4-23	Board Version	Byte	20	
24-33	CPU Type	Byte	10	
34	CPU Number	Byte	1	
35-36	CPU Speed	Byte	2	
37-66	Linux date	Byte	30	
67-76	libudvp Version	Byte	10	
78	LDVC Version	Byte	1	
79	FPGA	Byte	1	
80-99	IP Address	Byte	20	
100-119	MAC Address	Byte	20	
120	Camera Interface	Byte	1	
121-150	Board name	Byte	30	
151-170	Reserved	Byte	20	

2.19 Get Display Driver Config (118)

Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 118 Data Length = 2
4	Frame Buffer ID	Byte	1	Values between 0 – 1
5	Display Driver ID	Byte	1	Values between 0 – 4

Reply Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 118 Data Length = 12(+20)
4	Frame Buffer ID	Byte	1	Values between 0 – 1
5	Display Driver ID	Byte	1	Values between 0 – 4

6-15	Driver Name	String	10	
16-25	Reserved	Byte	20	

2.20 Setup Display Config (119)

Select display

Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 119 Data Length = 2(+50)
4	FB 0 Driver ID	Byte	1	-1 = None Values between 0 – 9
5	FB 1 Driver ID	Byte	1	-1 = None Values between 0 – 9
6-55	Reserved	String	50	

Reply Message Structure: ACK/NAK

2.21 Get Display Config (120)

Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 120 Data Length = 0

Reply Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 120 Data Length = 2(+50)
4	FB 0 Driver ID	Byte	1	-1 = None Values between 0 – 9
5	FB 1 Driver ID	Byte	1	-1 = None Values between 0 – 9
6-55	Reserved	Byte	50	

2.22 Get Display modes (121)

If Codec does not exist, return NAK.

Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 121 Data Length = 2
4	Frame Buffer ID	Byte	1	Values between 0 – 2
5	Mode Number	Byte	1	Values between 0 – 9

Reply Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 121 Data Length = 43 (+50)
4	Frame Buffer ID	Byte	1	Values between 0 – 2
5	Mode Number	Byte	1	Values between 0 – 9
6-45	Mode Name	Byte	40	
46-95	Reserved	Byte	50	

2.23 Get Current Display mode (122)

Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 122 Data Length = 1
4	Frame Buffer ID	Byte	1	Values between 0 – 2

Reply Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 122 Data Length = 42 (+50)
4	Frame Buffer ID	Byte	1	Values between 0 – 2
5	Mode State	Byte	1	0 – None 1 – Off 2 – Active
6-45	Mode Name	Byte	40	When Mode State = Active

46-95	Reserved	Byte	50	
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2.24 Set Display Mode (123)

Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 123 Data Length = 42(+50)
4	Frame Buffer ID	Byte	1	Values between 0 – 2
5	Mode State	Byte	1	0 – None 1 – Off 2 – Active
6-45	Mode Name	Byte	40	Active
46-95	Reserved	Byte	50	

Reply Message Structure: ACK/NAK

2.25 Set Snapshot Quality (127)

Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 127 Data Length = 2
4	Mux Number	Byte	1	0 – N
5	Quality	Byte	1	Values between 1 – 10

Reply Message Structure: ACK/NAK

2.26 Get Snapshot Quality (128)

Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 128 Data Length = 1
4	Mux Number	Byte	1	0 – N

Reply Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 128 Data Length = 2
4	Mux Number	Byte	1	0 – N
5	Quality	Byte	1	Values between 1 – 10

2.27 Start Snapshot (129)

Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 129 Data Length = 1
4	Mux Number	Byte	1	0 – N

Reply Message Structure: ACK/NAK

2.28 Set Display Operation (134)

Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 134 Data Length = 2
4	Mux Number	Byte	1	0 – N
5	Mode	Byte	1	0 – Stop 1 – Start

Reply Message Structure: ACK/NAK

2.29 Set Time Source (141)

Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 141 Data Length = 2
4	Source	Byte	1	0 – User (default) 1 – GPS

5	Offset	Byte	1	
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Reply Message Structure: ACK/NAK

2.30 Get Time Source (142)

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 142 Data Length = 0

Reply Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 142 Data Length = 2
4	Source	Byte	1	0 – User (default) 1 – GPS
5	Offset	Byte	1	

2.31 Get USB To Disk Mode (145)

Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 145 Data Length = 0

Reply Message Structure: (146)

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 145 Data Length = 1
4	Mode	Byte	1	0 – Disable 1 – Enable

2.32 Enable/Disable USB disk mode (146)

Enable to see the board as disk on key

Message Structure:

D-BYTE	Field Name		Data Type	Field Length (bytes)	Description
0-3	Header			4	Message ID – 146 Data Length = 1
4	Mode		Byte	1	0 – Disable 1 – Enable

Reply Message Structure: ACK/NAK

2.33 Format Device (164)

Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 164 Data Length = 2
4	Device Number	Byte	1	Values between 0 – N
5	FS	Byte	1	1 – FAT32 2 – EXT4

Reply Message Structure: ACK/NAK

2.34 Maris private Messages (168-169)

Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 168

Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 169

Reply Message Structure: ACK/NAK

2.35 Set Display Rotate (172)

Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 172 Data Length = 4
4	FB Number	Byte	1	0 Or 1
5	Rotate	Byte	1	0 – None 1 – Rotate 90 2 – Rotate 180 3 – Rotate 270
6	Mirror	Byte	1	0 - None 1- Vertical 2 - Horizontal 3 - Vertical - Horizontal
7	Output	Byte	1	0 – Output Mode 1 – Input Size

Reply Message Structure: ACK/NAK

2.36 Get Display Rotate (173)

Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 173 Data Length = 1
4	FB Number	Byte	1	0 Or 1

Reply Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 173 Data Length = 1
4	FB Number	Byte	1	0 Or 1
5	Rotate	Byte	1	0 – None 1 – Rotate 90 2 – Rotate 180 3 – Rotate 270
6	Mirror	Byte	1	0 - None

				1- Vertical 2 - Horizontal 3 - Vertical - Horizontal
7	Output	Byte	1	0 – Output Mode 1 – Input Size

2.37 Set ONVIF Enable Mode (183)

Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 183 Data Length = 1
4	Mode	Byte	1	0 – Disable 1 – Enable

Reply Message Structure: ACK/NAK

2.38 Get ONVIF Enable Mode (184)

Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 184 Data Length = 0

Reply Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 184 Data Length = 1
4	Mode	Byte	1	0 – Disable 1 – Enable

Reply Message Structure: ACK/NAK

2.39 Get Active Sensors Count (185)

Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
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0-3	Header		4	Message ID – 185 Data Length = 0
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Reply Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 185 Data Length = 1
4	Count	Byte	1	

2.40 Get Sensor Info (186)**Message Structure:**

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 186 Data Length = 1
4	Device Number	Byte	1	Value between 0 – N

Reply Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 186 Data Length = 4
4	Device Number	Byte	1	Same as the request
5	Modes Count	Byte	1	The number of modes the sensor has. Like: Resolution, fps, video formats
6	Selected Mode Index	Byte	1	User selected mode index
7	Logical Device Number	Byte	1	(Logical Number) 0 - CSI 0, 1- CSI 1, 2-N USB

2.41 Set Sensor Mode by ID (187)**Message Structure:**

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 187 Data Length = 2
4	Device Number	Byte	1	Value between 0 – N
5	Mode Index	Byte	1	Mode Index

Reply Message Structure: ACK/NAK

2.42 Get Sensor Mode by ID (188)

Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 188 Data Length = 2
4	Device Number	Byte	1	Value between 0 – N
5	Mode ID	Byte	1	

Reply Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 188 Data Length = 9
4	Device Number	Byte	1	
5	Mode Index	Byte	1	
6	Is Select	Byte	1	0 – False 1 – True
7-8	Width	Byte	2	
9-10	Height	Byte	2	
11	Fps	Byte	1	
12	Frame type	Byte	1	0 – MJPEG 1 – YUV

2.43 Set Virtual Video (195)

Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 195 Data Length = 3
4	Mux Number	Byte	1	0 – N
5	Color	Byte	1	0 – Current pattern 1 – White 2 – Black 3 – Gray 4 – Yellow 5 – Green 6 – Red 7 – Blue
6	FPS	Byte	1	0 – 10 1 – 30 2 – 40

Reply Message Structure: ACK/NAK

2.44 Get Virtual Video (196)

Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 196 Data Length = 1
4	Mux Number	Byte	1	0 – N

Reply Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 196 Data Length = 3
4	Mux Number	Byte	1	0 – N
5	Color	Byte	1	0 – Current pattern 1 – White 2 – Black 3 – Gray 4 – Yellow 5 – Green 6 – Red 7 – Blue
6	FPS	Byte	1	0 – 10 1 – 30 2 – 40

2.45 Set VMD Params (205)

Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 205 Data Length = 8
4	Mux Number	Byte	1	0 – N
5	Size Sensitivity	Byte	1	
6	Motion Sensitivity	Byte	1	
7	Frame Distance	Byte	1	
8	Activity (MS)	Byte	1	
9	Stop Action After (sec)	Byte	1	
10	Event Flags	Byte	1	BIT 0 – Start action BIT 1 – Stop action
11	Show rectangle	Byte	1	Disabled – 0 Enabled – 1

Reply Message Structure: ACK/NAK

2.46 Get VMD Params (206)

Message Structure:

D-Byte	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 206 Data Length = 1
4	Mux Number	Byte	1	0 – N

Reply Message Structure:

D-Byte	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 206 Data Length = 8
4	Mux Number	Byte	1	0 – N
5	Size Sensitivity	Byte	1	
6	Motion Sensitivity	Byte	1	

7	Frame Distance	Byte	1	
8	Activity(ms)	Byte	1	
9	Stop Action After(sec)	Byte	1	
10	Event Flags	Byte	1	BIT 0 – Start action BIT 1 – Stop action
11	Show rectangle	Byte	1	Disabled – 0 Enabled – 1

2.47 Get Update Status (253)

Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 253 Data Length = 0

Reply Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 253 Data Length = 1
4	Status	Byte	1	0 – Off 1 – Busy

2.48 Set Camera Lose mode (233)

Select behavior when camera video become unlock lock during recording/streaming.

Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 233 Data Length = 2
4	Mux Number	Byte	1	0 – N
5	Action	Byte	1	0 – wait video 1 – stop 2 – virtual video 1 (black on white) 3 – virtual video 2 (white on black)

				Message: No Video on the video.
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Reply Message Structure: ACK/NAK

2.49 Get Camera Lose mode (234)

Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 234 Data Length = 0
4	Mux Number	Byte	1	0 – N

Reply Message Structure:

D-BYTE	Field Name	Data Type	Field Length (bytes)	Description
0-3	Header		4	Message ID – 234 Data Length = 2
4	Mux Number	Byte	1	0 – N
5	Action	Byte	1	0 – wait video 1 – stop 2 – virtual video 1 (black on white) 3 – virtual video 2 (white on black)