

FLIR NEUTRINO LC NOTIFICATION

Release Date: 03/05/2021

Release Versions: Neutrino LC Release 1.2.2 is intended as a general release consisting of the following versions:

Software v2.1.25777
Firmware v30.1.11.15
SDK v2.1.25777
FLIR Neutrino LC App v1.2.9

Change Summary

The following changes have been made in Release 1.2.2 relative to Release 1.2:

- **Post-Zoom, Post-Colorize CMOS Video-Tab Mode** – The color conversions impacting the post-colorize CMOS output modes (e.g. YCbCr, RGB) were incorrect in Release 1.2 and have been returned to the original conversion coefficients applied in Releases 1.0 and 1.1.
- **RGB/BGR CMOS Color Encoding Modes** – The “unvalidated” RGB modes documented in the Engineering Datasheet have been modified from a non-working condition to working condition and have been altered from RGB888 to RGB565 as described below.
- **Integration Time** – Limitations on the maximum value of integration time have been removed to allow higher integration times with lower frame rates than the nominal 60Hz.
- **Firmware Upgrade** – A firmware field upgrade capability has been added. The previous firmware revision caused an intermittent hardware boot issue (communication achieved, but no live video).

Field Upgrade

The software and firmware are field upgradeable via the FLIR Neutrino LC App, v1.2.9.

Note: the starting firmware must be Release 1.2 (v30.1.11.13) or later to allow firmware upgrade capability. Attempting to update firmware with Release 1.0 or Release 1.1 (v30.1.10.13) will cause damage to the unit.

Upgrade software first: select “Port” in the drop down to connect, once connected go to the “Diagnostic Tools” tab -> “Diagnostic Control” pane -> “Upload Camera SW” button, a pop-up file browser will appear, browse to the directory of the Release 1.2.2 software, select the software file (NeutrinoLC-User-secure-v25777.fpld), select “Open”, select “OK” when the confirmation pop-up appears. Wait for progress to complete and automatic reboot to occur. Reconnect to the COM port and verify the new software version on the “Diagnostic Tools” tab -> “Status Panel” pane.

Upgrade firmware next: select “Port” in the drop down to connect, once connected go to the “Diagnostic Tools” tab -> “Diagnostic Control” pane -> “Upload Camera FW” button, a pop-up file browser will appear, browse to the directory of the Release 1.2.2 firmware, select the firmware file (30_01_011_015.bin), select “Open”, select “OK” when the confirmation pop-up appears. Wait for progress to complete and automatic reboot to occur. Reconnect to the COM port and verify the new firmware version on the “Diagnostic Tools” tab -> “Status Panel” pane.

Updated RGB/BGR CMOS Color Encoding

- **RGB 5:6:5 (16-bit per pixel)**: The signal consists of a red channel (5 bits per clock on CMOS_Data[1,4,7,10,13] is the 5 MSBs[7:3] of red), a green channel (6 bits per clock on CMOS_Data[0,3,6,9,12,15] is the 6 MSBs[7:2] of green), and a blue channel (5 bits per clock on CMOS_Data[2,5,8,11,14] is the 5 MSBs[7:3] of blue).
- **BGR 5:6:5 (16-bit per pixel)**: The signal is identical to RGB 5:6:5 except the blue and red channels are swapped. That is, the blue channel is provided on CMOS_Data[1,4,7,10,13] and the red channel on CMOS_Data[2,5,8,11,14]. For reference, the color encoding of each mode is depicted graphically. Note the CMOS color-encoding mode has no effect on the video signal unless CMOS video-tap mode is “post colorize”.

102-2020-43, Neutrino LC Notification, Release 1.2.2 Software/Firmware

EAR Controlled: EAR99

These commodities, technology or software are subject to the U.S. Export Administration Regulations (EAR). Diversion contrary to U.S. law is prohibited.

FLIR NEUTRINO LC NOTIFICATION

Color Mode	clk	CMOS_Data																										
		23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0			
YCbCr 4:2:2	0	Unused								Cb[7:0]							Y0[7:0]											
	1	Unused								Cr[7:0]							Y1[7:0]											
YCrCb 4:2:2	0	Unused								Cr[7:0]							Y0[7:0]											
	1	Unused								Cb[7:0]							Y1[7:0]											
RGB 5:6:5		Unused								G	B	R	G	B	R	G	B	R	G	B	R	G	B	R	G	B	R	G
										2	3	3	3	4	4	4	5	5	5	6	6	6	6	7	7	7		
BGR 5:6:5		Unused								G	R	B	G	R	B	G	R	B	G	R	B	G	R	B	G			
										2	3	3	3	4	4	4	5	5	5	6	6	6	7	7	7			

102-2020-43, Neutrino LC Notification, Release 1.2.2 Software/Firmware

EAR Controlled: EAR99

These commodities, technology or software are subject to the U.S. Export Administration Regulations (EAR). Diversion contrary to U.S. law is prohibited.