Release Note No. # 2018-001

SPACE-FORCE Control FIRMWARE Revision 1.70

22 January 2019

New additions or revisions

1. Added Personality selection, save and restore user defaults to the main menu. Two personalities are implemented:
    a. INT-CCT:
        i. Footprint: Two channels (Address, Address+1).
        ii. First channel: Light intensity; Second channel: Light temperature
    b. INT-CCT-EXTD:
        i. Footprint: Three channels (address, address+1, Address+2).
        ii. First two channels are similar to (a.); the third channel is the Control (CTRL) channel. Commands (through DMX) that are placed on this channel for over 5 seconds get executed. The command list will follow in the "New Control via DMX" section.
2. Added "RDM" to Technical menu: RDM "Enable" or "Disable" switch.
3. PWM default frequency: set to 3000 Hz.

General

- Pressing right dial: Backwards to previous menu.
- Pressing left dial: Selects current menu.
- Pressing both dials:
    - From outside menus (normal mode): Enters to main menu.
    - Within a selected menu: Records/saves the currently selected value to flash. For Reset menu, it starts the reset sequence.
- Rotating left dial: Browse through current menu items.
- When outside menus (normal state):
    - Rotating left dial: Increments (clockwise) or decrements (counter clockwise) light intensity in steps of 1%.
    - Pressing left dial: Decrements light intensity in steps of 10%.
    - Rotating right dial: Increments (clockwise) or decrements (counter clockwise) light temperature in steps of 50.
    - Pressing right dial: Steps light temperature down into one of five pre-set settings.

New LCD Display Functions

1. Power up logo: Displays the device type (e.g. SPACEFORCE), FMW version, and points to pressing both dials when accessing menus is required.
2. Indicators: At mid screen, the following indicators may be observed:
    a. CBL or RF: When "DMX I/P Select" in the technical menu is set to "cable", CBL is displayed on mid bottom line. Similarly, if input set to "Radio", "RF" will be displayed.
    b. During an RDM communication, "RDM" is flashed momentarily over mid top line.
    c. If the RF module is installed, "R" is displayed on mid top line.
3. Sprite messages on LCD display: When either RDM or CTRL functions are called, temporary messages identifying these activities are displayed for one second on line 2.

New Menus

The main menu may be accessed by simultaneously press both dials. Follow the rules in (General) to select and modify parameters. Main menu selection items are:

1. Address: From 1 to 511 or 510 depending on personality setting.
2. Personality: Two personalities available, as mentioned above.
3. Technical: Sub menu for technical settings:
    1. PWM Frequency: Display/set PWM frequency to any of 750, 1500, 3000, 6000, 12000, 24000, 48000, 96000.
    2. DMX I/P Select: Two choices, Cable or Radio.
    3. DMX Lost: Chooses an action when DMX input is lost. Four choices available:
        i. Turn Black.
        ii. Hold last: (Default) light stays as per the last received DMX input.
        iii. Recall M1: Light intensity and temperature saved in M1 will be recalled.
        iv. Recall M2: Light intensity and temperature saved in M2 will be recalled.
    4. RDM: Two choices, Enable or Disable RDM communication.
    5. DMX Input Data: Display received DMX channel values: intensity, light temperature and Control (if personality = 2), each in decimal (0-255). Pressing right dial will exit menus, while pressing the left dial continuously will prevent exiting at the normal menu timeout of 15 seconds approx.
    6. Temperature: Reports the CPU core temperature in degrees Celsius.
    7. FMW Name & Ver: Displays the Firmware name and version.
    8. Engine UPLOAD: Used to program the SPACEFORCE light engine CPUs from an Uploader II device.
4. User defaults: Provides two choices, Save and Restore. Save will store all the current set ups, including Address and Personality, into a user dedicated area on flash. Restore will bring that set up back.
5. Reset: Selecting Reset will restore factory defaults and restart SPACEFORCE control unit.

New Control via DMX

When setting Personality to" INT-CCT-EXTD", a third DMX channel will be established to carry commands rather than light data from the console to the fixture. A command is a binary number that must be asserted on the third channel for at least 5 seconds to have it executed.

The changes made through DMX are not store in the fixture, this means that after a reboot the settings will revert back to values originally set in the fixture's menu.

However, it is possible to save these settings as new user default using the Save User Default DMX command (244-245).

See Control channel table.

RDM Functions

A. Chroma-Q Specific Functions

1. *STORE MEMORY Mx*

Description: Stores current light intensity and temperature to either memory (M1) or (M2) on flash.
Function: SET
Argument: one binary byte of value: 1 for M1, or 2 for M2

2. *RECALL MEMORY Mx*

Description: Restores light intensity and temperature previously stored in memory M1, or M2.
Function: SET
Argument: one binary byte of value: 1 for M1, or 2 for M2

3. *UNLINK SPACEFORCE*

Description: Unlinks TiMO RF module from the currently linked transmitter. This function can be sent in BORADCAT RDM mode causing all discovered SPACEFORCE fixtures to unlink, or to one fixture to unlink individual fixtures.
Function: SET
Argument: The string: UNLINK SPACEFORCE

4. *SET PWM Freq (750,1500…96000)*

Description: Sets PWM frequency.
Function: SET
Argument: String representing one of the eight set frequencies: 750, 1500, 3000, 6000, 12000, 24000, 48000, 96000.

5. *GET PWM Frequency*

Description: Reports current PWM frequency setting. Some of the RDM control PC applications report back a string with hex values. In this case, the reader should convert them to their numeric equivalents: 30='0', 31='1', 32='2',…, 39 = '9', and 20 = ' '. For example, "37 35 30 20 20" translates to: "750".
Function: GET
Argument: None

B. Standard RDM functions that require pass-in values

Although Standard RDM functions are well defined in the protocol, still some have been implemented with specific input and/or output parameters, as permitted. Following are these functions with specific parameters:

1. *Identify Device*

Description: Sets selected device to a blinking state for visual identification.
Function: SET
Argument: '1': Sets blink up to 30 seconds; '0': Stops blinking immediately. Any other argument will result in Not Acknowledged.

2. *Device Label*

Description: Sets and gets device label(string).
Function: SET, GET
Argument: None for GET. For SET, any alpha-numeric label up to 32 characters.

Fixes from Rv. 1.62

a. Reset: DMX input settings are not changed on Reset.
b. Focus: Activates all engines in the SPACEFORCE at the same time.
c. Accessing Menu by pressing both dials has been adjusted to become easy.
d. Adjust address pushbutton timing to work properly.
e. Eliminated LCD back light flicker.

Mode 1 - INT-CCT

INT-CCT	Value	Function	Fade Status	Default Value
1		**Intensity**		
	0 - 255	Minimum → Maximum Intensity	Fade	0
2		**Kelvin**		
	0 - 255 0 64 128 192 255	Warm → Cold 2800K 3200K 4400K 5600K 6500K	Fade	128

Mode 2 - INT-CCT-EXTD

INT-CCT-EXTD	Value	Function	Fade Status	Default Value
1		**Intensity**		
	0 - 255	Minimum → Maximum Intensity	Fade	0
2		**Kelvin**		
	0 - 255 0 64 128 192 255	Warm → Cold 2800K 3200K 4400K 5600K 6500K	Fade	128
3		**Extended Controls**		
	0 - 255	* See Control channel table for details	Snap	0

Control channel table

Function name	Default	From	To	Description
Values must be held for 5 sec before its function is activated				
Control channel				
No Function		0	2	
Reserved		3	10	Reserved for future feature
Fade OFF		11	12	Switches light engine fade off. Useful for pulse operation.
Fade ON	X	13	14	Restores light engine fading.
Reserved		15	70	Reserved for future feature
PWM 750		71	72	Set PWM Frequency to 750
PWM 1500		73	74	Set PWM Frequency to 1500
PWM 3000	X	75	76	Set PWM Frequency to 3000
PWM 6000		77	78	Set PWM Frequency to 6000
PWM 12000		79	80	Set PWM Frequency to 12000
PWM 24000		81	82	Set PWM Frequency to 24000
PWM 48000		83	84	Set PWM Frequency to 48000
PWM 96000		85	86	Set PWM Frequency to 96000
Reserved		87	140	Reserved for future feature
Enable RDM	X	141	142	Enable RDM function
Disable RDM		143	144	Disable RDM function
Reserved		145	150	Reserved for future feature
DMX Lost fixture stay to the last state	X	151	152	When fixture looses DMX it will keep its last state
DMX Lost Fixture goes black		153	154	When fixture looses DMX it will go black
Reserved		155	156	Reserved for future functions
DMX Lost fixture to selected look		157	158	When fixture looses DMX it will Use the same look as stored in M1
Reserved		159	243	Reserved for future feature
Save as User Defaults		244	245	Take the current settings and make it the new default (except DMX address and DMX mode)
Restore User Defaults		246	247	Restore setting to saved user default (except DMX address and DMX mode)
Restore Defaults Settings		248	249	Restore setting to factory default (except DMX address and DMX mode)
No Function		250	255	

RDM Functions

To upload the new Firmware use Uploader II. The Quick Start Guide for Uploader II is available at http://www.chroma-q.com/support/downloads.asp.