



Shine Plus family

Shine Plus Maxi Digi User Manual
- version 0.0.9 -





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Subject to technical modification



Please read this manual carefully before carrying out the installation!!! Although our products are very robust, incorrect wiring may destroy the module!

During the operation of the device the specified technical parameters shall always be met. At the installation the environment shall be fully taken into consideration. The device must not be exposed to moisture and direct sunshine.

A soldering tool may be necessary for the installation and/or mounting of the devices, which requires special care.

During the installation it shall be ensured that the bottom of the device should not contact with a conductive (e.g. metal) surface!



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1. Features

- 14 low current high brightness white LED lighting module
- Suitable for carriage, platforms or building's interior lighting.
- On board DCC function decoder with 14+2 outputs.
- DCC and DC operation
- User adjustable length in 4 additional steps, max 275, min 195 mm.
- Function mapping F0, F1-F16

Available versions:

Shine Plus Maxi Digi Warm White	order code tOm 02070314
Shine Plus Maxi Digi Cool White	order code tOm 02070315
Shine Plus Maxi Digi Yellow	order code tOm 02070316*

(* only on special order)

2. Package Content

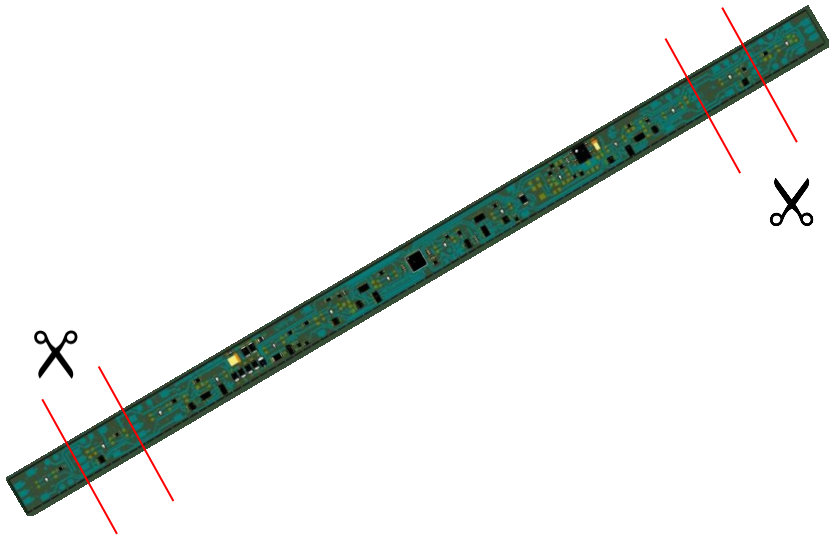
The Shine Plus Maxi Digi lighting modules are supplied in transparent plastic bags or blister packs. Check when unpacking the product if the following parts are present: 1 x Shine Plus Maxi Digi (Cool White or Warm White), 2x 220uF/25V capacitors.

3. Technical parameters

- 14 LEDs each of them connected to a function output
 - 2 extra outputs of the on board decoder available for external use
 - Size LxWxH: 275 mm x 11mm x 3mm
 - Maximum current consumption @16Vdc max 40mA
(all LEDs ON)
 - Supply voltage: 6-24 Vdc or standard DCC signal
-

4. Cutting to size

The operation can be performed at the points indicated in the below illustration. The cutting lengths are ~ 20 mm long, and marked with drilled holes in the substrate material. Care shall be taken to not damage the circuit. Use a cutting plier and straight, firm movements for cutting. Clean the debris at the edges of the pcb after the cutting, to avoid short circuits.



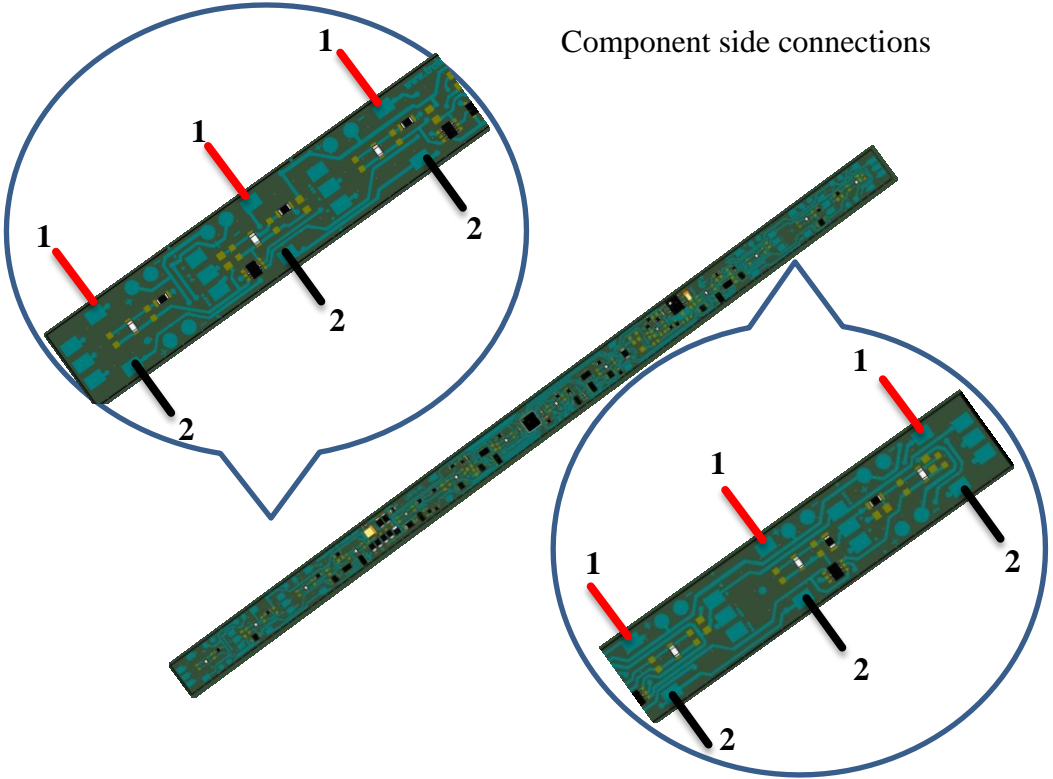
5. Installation and connection

The track connections are available in multiple points on both sides of the boards. Please refer to the following illustrations.

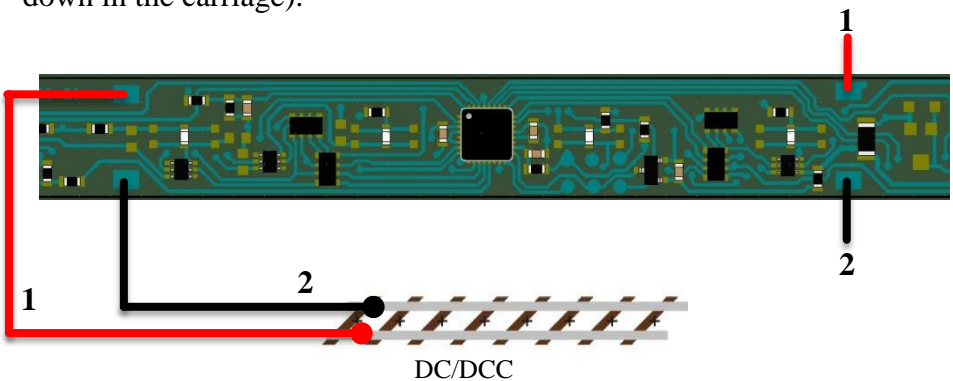


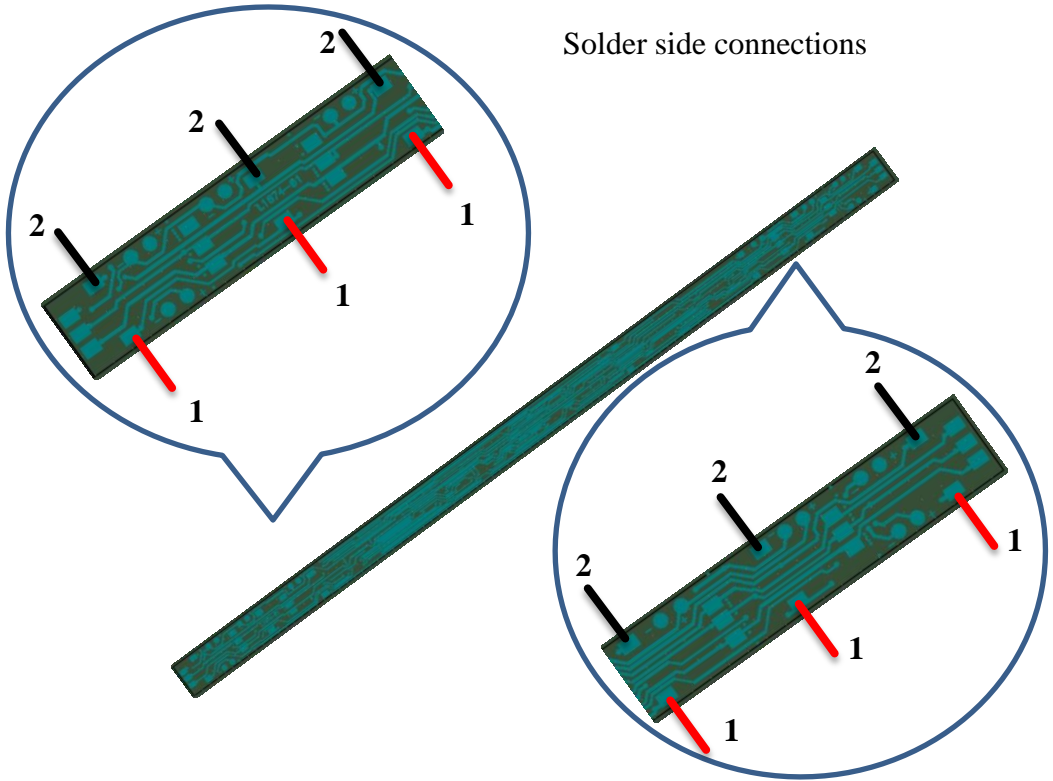
The track polarity has no influence on the lighting module functionality. We marked however the right track with red color and the left track with black color to be consequent with the NMRA recommendations.

Component side connections



The connections marked with 1 and 2 have to be connected to the DC/DCC track voltage. The connections are available also in center area of the module (the board is considered to be assembled faced down in the carriage).



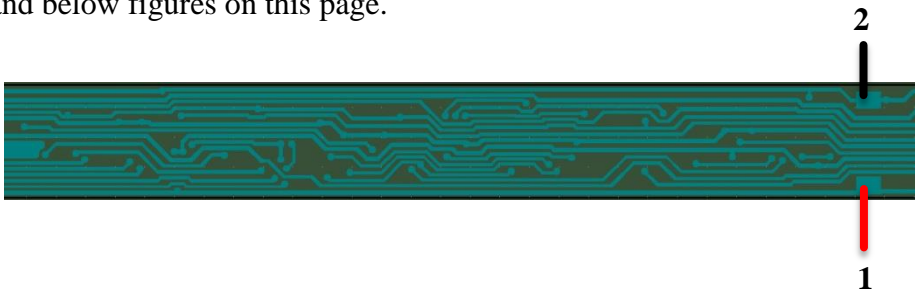


Solder side connections



One pair of track connection must be used, please choose that one which is the most convenient for the carriage /application.

In some cases it is more suitable to solder the wire connections to the solder side of the board. The connections are illustrated on the above and below figures on this page.

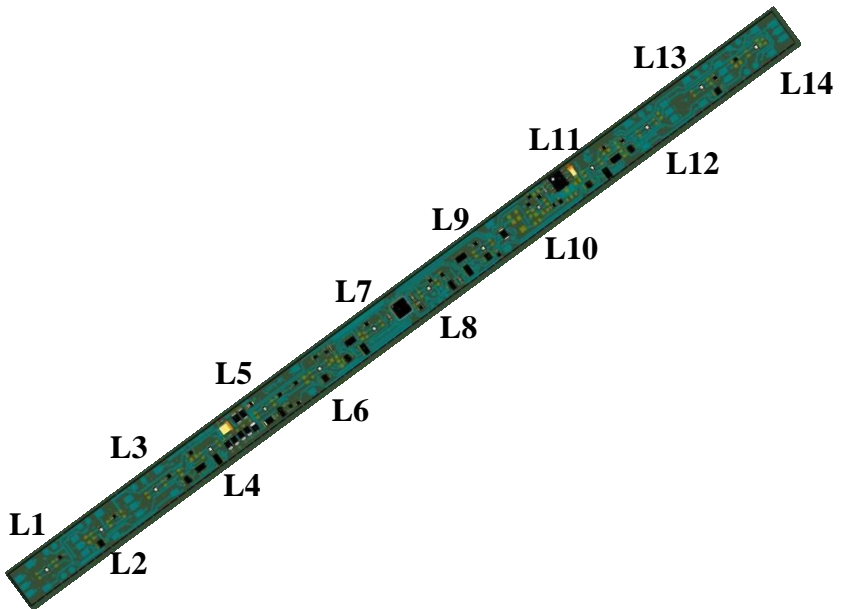


6. The function decoder outputs

The first 14 outputs of the function decoder are connected to the 14 LEDs marked on the below illustration L1 thru L14.

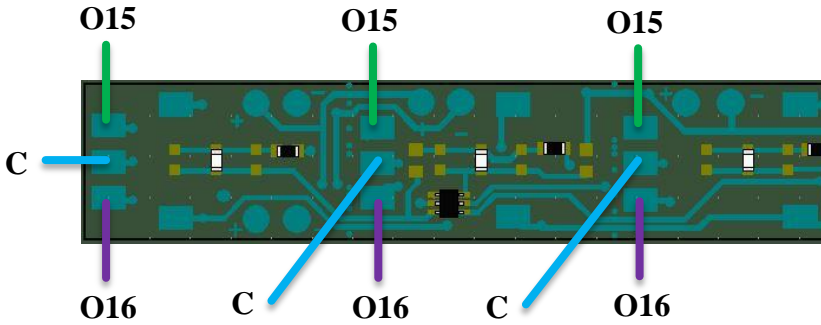


Shortening the lighting board will eliminate L1, L2, L13 and L14, please use the mapping of the functions taking this in consideration.

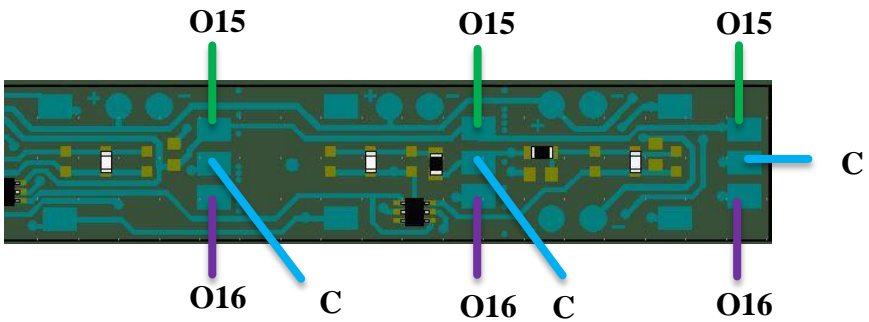


The Out15 and Out16 of the on board function decoder together with the common (positive) terminal is available at both ends of the board. Please consult the illustrations on the next page for connecting them (O15 represents the Out15, O16 the Out16 and C the common terminal).

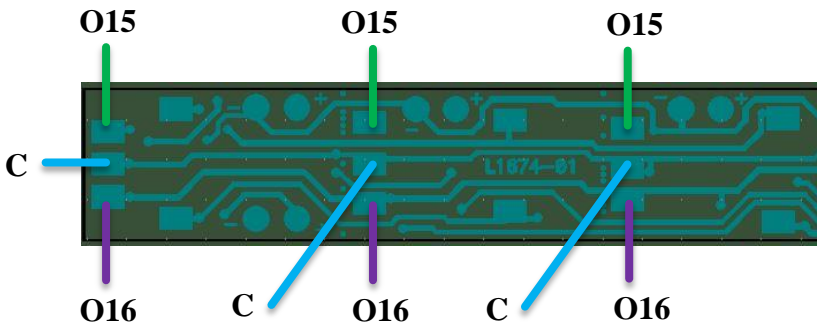
Left side connections (component side)



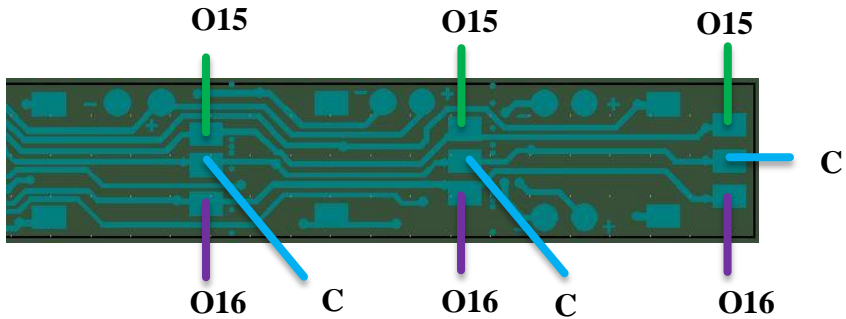
Right side connections (component side)



Left side connections (solder side, board flipped horizontally)

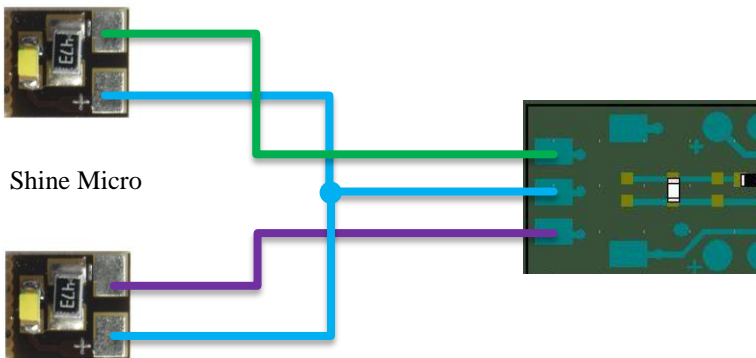


Right side connections (solder side, board flipped horizontally)



The outputs are available for connection of other lighting modules, for example Shine Micro for cockpit lighting, or Shine FDT as taillight.

Cockpit connection example

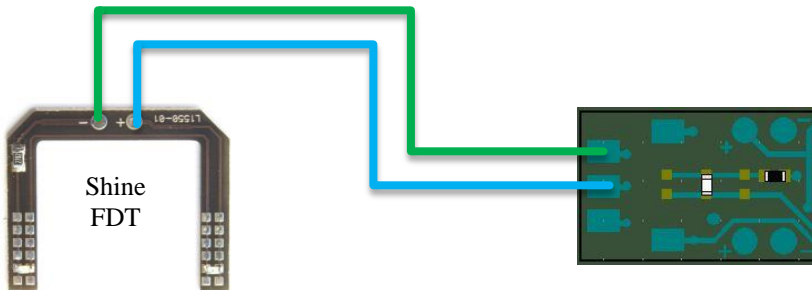


If polarized devices are connected to the outputs, please connect the positive terminal (Anode) to the common terminal of the on board decoder (C) and the negative terminal (Cathode) to the output of the decoder (O15/O16).



If LEDs (Light Emitting Diodes) are used the presence of the current limiting resistor connected in series with the LED is mandatory. Connecting directly an LED to the output of the function decoder can damage the LED !

Taillight connection example



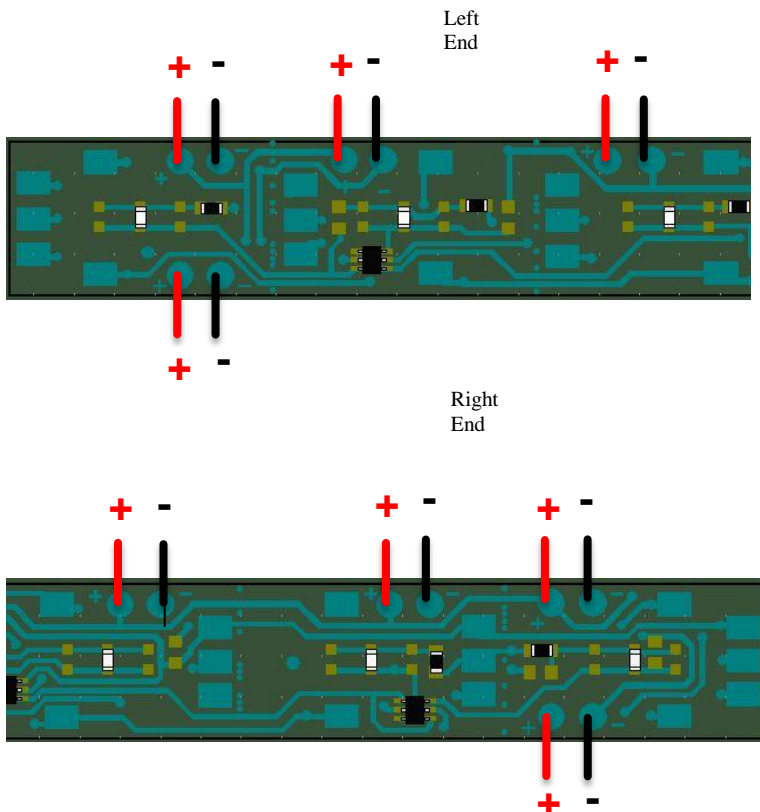
The onboard decoder has an overcurrent/short circuit protection included. In case that a short circuit/overcurrent occurred, the internal circuit cuts off the corresponding output, and the value of CV30 will be set to 1 (please see page 26 in the CV table in chapter 17).

7. Connecting the anti-flickering capacitor

On both ends of the module, there are available several connections for the anti-flickering capacitors. Please solder the supplied capacitors in most convenient position.



The capacitors are polarized electronic devices. Please respect the polarity as indicated! Soldering the capacitors with wrong polarity can damage the module, or/and the capacitors!





The positive terminal of the capacitor has to be connected to any of the connections marked with **+** while the negative terminal to the connection points marked with **-**.

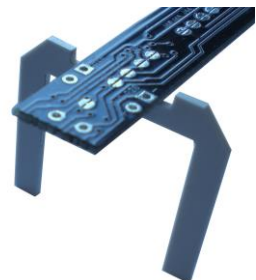


The capacitor connection pads have metallized connections to the solder side of the boards. If required, the capacitors can be soldered also to the solder side of the board. Please respect the corresponding polarity.



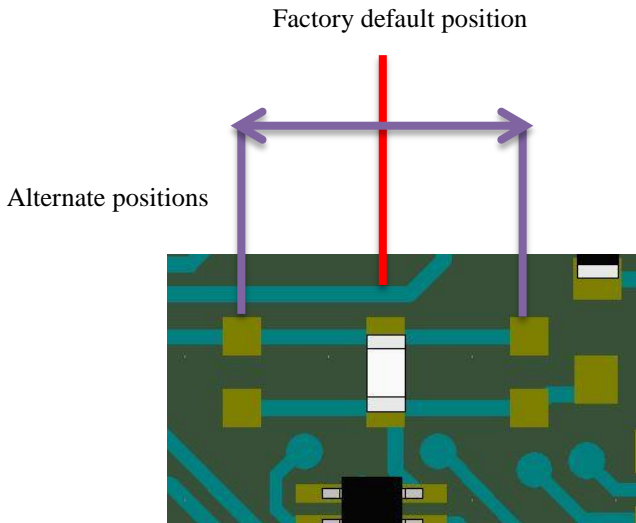
The lighting board has a charge/discharge circuit included, so additional resistor and diode connections are not required.


The module can be fixed to the ceiling of the carriage frame by double-sided adhesive tape, or can be held in place with the help of the Shine Pastic Supports (PS Shine).




8. Advanced features

The PCB layout of the Shine Plus Maxi Digi module allows the repositioning of the LEDs which results in a better fit in the carriages. Each LED can be shifted left and right in two positions with a ~ 3 mm pitch by resoldering, as illustrated below.



 For the soldering operations a proper soldering station and soldering skills are required. Incorrect soldering can damage or destroy the module. We recommend these operations only for advanced users!

 The LEDs are polarized electronic devices, please do not change their polarity during the resoldering!



9. Address programming

The on board function decoder of Shine Plus Maxi Digi can be used either with short addresses (1-127) or long addresses (1-9999). The factory default is short addressing (bit 5 of CV29 is 0), with the address 3 (CV1=3).

The address can be changed by placing the decoder on the Programming Track (PT), and changing the CV1 value, according to the instructions of your Command Station.

If long addressing is needed, the addressing mode has to be changed in the configuration CV of the decoder (bit 5 of CV29). Changing the bit5 value of CV29 to 1 will activate the long addressing mode, and the decoder will respond to the long address specified in CV17 and CV18. Bit5 has a decimal value of 32, so changing bit5 to binary 1 is equivalent with the adding of 32 to the decimal value of CV29 (CV29 has a factory default value of 6, activating bit 5 means, to add 32 to this value, $6+32 = 38$, the new value for CV29 will be 38).

The long addresses will be calculated with the following algorithm (in our example we will consider the long address 2000)

-divide the desired long address with 256 (in our example $2000/256=7$, remainder = 208)

-add 192 to the result and program it in CV17 ($7+192=199$, program the value of 199 in CV17)

-program the value of the remainder of the division in CV18 (program the value of 208 in CV18)



After programming CV29, CV17 and CV18 to the mentioned values, the decoder can be accessed with the address 2000. To switch back to short addressing, the bit5 of CV29 has to be deactivated.

10. Decoder reset

The Shine Plus Maxi Digi is delivered in factory configuration, with the CV values specified in the column "Default value" in the CV table (see chapter 17). At any time, the decoder can be restored to the default values by performing a reset. The reset procedure consists of programming any numerical value to CV8.

11. Function and Output mapping

Each function (from F0 to F16) can be used to activate/deactivate one or more outputs (from the total of 16 outputs) of the on board decoder. The correspondence between functions and outputs is called Function Mapping. The mapping is performed by programming the corresponding bits in CV33-62, and CV160-167.

Since the decoder has a total of 16 outputs, for each function mapping 2 CVs are required (low byte for outputs 1-8 and high byte for outputs 9-16). For the functions F0 (generally called light function) and F1 the mapping can be defined separately for each direction of travel, and 4 CVs are used. The other functions (F2-F16) do not depend on the direction of travel. To each physical output of the on board decoder, a bit value is assigned in the 2 CV that maps the function (4 CVs for F0 and F1).

If the function activates the corresponding physical output, the decimal values in brackets for each bit (powers of 2) will be considered. If the function does not use the corresponding output, the bit value will be considered zero. The mapping CV will be



programmed with the sum of the decimal values of each active output.

For example, if you want to use function F2 to activate output 4, CV41 and CV42 will be used for mapping (which configures / maps F2). Bit3 is used to activate Output 4, its decimal value is 8, so CV41 will be programmed with the value 8, and CV42 with the value of 0. If we want to use F2 to activate Output3 too, we will add to the previously determined value the corresponding value for Output3 (bit2, with a decimal value of 4). CV41 will be programmed with the sum of 4+8 which is 12. If Outputs 13 and 14 will be used with F2, the corresponding bits are bit4 and bit5 in Cv42, with the values of 16 and 32, thus CV42 will be programmed with the value 16+32=48.

For functions F0 and F1, 4 CVs are used for mapping, two for each direction of travel. F0 is factory configured in such a way that all outputs are activated for both directions. F1 is factory configured to activate Output1 for both directions (see the CV table in chapter17).

12. Dimming, Fade and Effects

The light intensity of the LEDs connected to the outputs of the onboard decoder can be changed individually by dimming using CV120 thru C135. The factory default value for each of them is the decimal value 127 (half intensity). Programming the 255 value in any of these CVs, result in a continuous output at maximum intensity level of the corresponding output.

There are several effects available (which can be extended with further firmware upgrades) their parameters are globally defined in CVs 112-117.

CV112 and CV113 define the progressive On and Off time if the Fade effect is used. In CV114 the on delay is defined for the neon

effect. In CV116 the flickering period is given for the flickering lamp effect. The Defective Neon effects repetition time can be set in CV117.

The effects are configured for each of the outputs in CVs 136-152. In the current firmware version (V3) the CVs has to be programmed with the following values:

- 0 Continuous outputs
- 1 Fade effect
- 2 Fluorescent (neon) effect
- 3 Flickering effect
- 4 Defective Neon effects



The modules are delivered with the outputs configured for continuous operation (CV120 thru CV135 are set to value 0).

A pseudo random sequence generator function is also available, activating this for an output, it will switch on and off without the need of switching on and off a function. To select an output for the random sequence, the value of 128 must be added to the effect values (values in the range of 0-4) given in CV136-152. The switching period of the random sequence is defined in CV115 in the range of 1-255 seconds. As a result, after each elapse of the random period, the state of the outputs which have the random effect activated will change to a new on/off state, which is random based. It gives a very realistic effect to a carriage, when rolling on the track, and some of the compartment lights are switched on, or off.



The number of random states increases dramatically with the increase of the outputs selected for this function. We recommend the use of 2-4 of the outputs with the random sequence to get an efficient visual effect.

13. Analog Operation

The onboard function decoder of the Shine Plus Maxi Digi is delivered with analog DC operation enabled, and F0 activated for both travel direction (bit 2 is set in CV29 and CV14 is enabled for use of F0 function in both directions of travel. $CV14 = 1 + 3 = 4$). Connecting the board to an analog voltage, will activate all outputs of the on board function decoder. If you want to activate other functions in analog DC mode, they have to be defined in CV13 and CV14. Prior to this, the mapping of the function has to be defined in Chapter 10.



Only functions F0, F1-F14 can be used in analog DC mode.

14. Consist operation

The on board function decoder of the Shine Plus Maxi Digi lighting board can use the Advanced Consist functions. To activate this feature, the consist address has to be set in CV19. When the content of CV19 differs from 0, the decoder will perform functions that are defined in CV21 and CV22 only if they are transmitted to the consist address. All other functions will be performed while they are sent to the base address (defined in CV1 or CV17/18).

Functions declared in CV21, CV22 will not be performed while they are transmitted to the base address.

Consists is useful if we want to run two or more engines in the same train (this means several mobile decoders), as well as multiple traction and want to perform some of the functions individually for each decoder, and other functions globally for all of the decoders.

Speed and direction commands will be sent to all decoders within the same consist. In this way the headlights (of locomotives) and tail

light of carriages can be turned on and off, based on the direction commands sent to the consist addresses, while the interior lights in different carriages can be turned on and off based on their individual base addresses.



Only functions F0, F1-F12 can be used in consist mode. The speed steps setting in CV29 must match the speed step setting of the command station for both base and consist addresses.

15. Secondary address (decoder lock)

When using multiple decoders within the same housing, it is useful to use a secondary address that will allow the selection of the decoder in question. In this way any of the decoders that are inside the same housing (carriage body) can be programmed on the Programming Track without removing it. The secondary addresses are programmed into CV16 before the decoders (in our case the Shine Plus Maxi Digi with the onboard decoder) is being assembled in their housing. The ranges of secondary addresses are 1-7 (value of 0 means that secondary addressing is not used). This permits the use of maximum 7 decoders in the same carriage or locomotive housing, which is more than enough.

If the value of CV16 is not equal to zero, the decoders will accept programming commands only if the secondary address of decoder that is intended to be programmed is programmed prior in CV15, and it matches the value in CV16 (it should be the same as CV16 of the decoder in question).



WARNING: even CV16 can be programmed only if the correct value is programmed in CV15.

Using secondary addressing is important to know that the only CV that can read and written without knowing the secondary address is



CV15. For this reason the values used are limited to the range 1-7. If the secondary address of the decoder is forgotten within 7 iterations it can be found.

This way of accessing / programming of the decoder CVs is useful in case of railcars, or permanently connected sets, which have more decoders built in, and it would be very inconvenient their programming in the traditional way (on Programming Track all decoders would be programmed with the same CV values, what most likely is not desired).

Assigning secondary addresses to each decoder of the railcar or carriage sets, when placing them on the Programming Track, only the decoder for which the CV15 = CV16 will be programmed. In this way we can program several decoders independently, even if they are on the programming track in same time.

16. User data

CV105 and CV106 are two CVs that can be used to store user identifiers (serial number, etc.). The particularity of these two CVs is that after a reset their contents will not be erased.

17. Other functions

The on board decoder has implemented a function to save the last function command received. This feature can be activated programming the decimal value 1 in CV152. With this feature activated, the decoder will start up activating the functions that were active before power interruption, even if DCC commands were not received to activate these functions.



18. CV table

CV	Default value	Value Range	Description
1	3	0-127	Decoder Address Short, 7 bits
7	4	-	Software Version (only readable)
8	78	-	Manufactured ID/RESET (readable 78 = train-O-matic, any written value will reset the decoder to the factory default values)
13	0	0-255	Analog Mode, Alternate Mode Function Status F1-F8 Bit 0 = 0(0): F1 not active in Analog mode = 1(1): F1 active in Analog mode Bit 1 = 0(0): F2 not active in Analog mode = 1(2): F2 active in Analog mode Bit 2 = 0(0): F3 not active in Analog mode = 1(4): F3 active in Analog mode Bit 3 = 0(0): F4 not active in Analog mode = 1(8): F4 active in Analog mode Bit 4 = 0(0): F5 not active in Analog mode = 1(16): F5 active in Analog mode Bit 5 = 0(0): F6 not active in Analog mode



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			<p>= 1(32): F6 active in Analog mode Bit 6 = 0(0): F7 not active in Analog mode = 1(64) F7 active in Analog mode Bit 7 = 0(0): F8 not active in Analog mode = 1(255): F8 active in Analog mode</p>
14	3= 1+ 2	0-255	<p>Analog Mode, Alternate Mode Function. Status F0f,F0r, F9-F14, Bit 0 = 0(0): F0f not active in Analog mode = 1(1): F0f active in Analog mode Bit 1 = 0(0): F0r not active in Analog mode = 1(2): F0r active in Analog mode Bit 2 = 0(0): F9 not active in Analog mode = 1(4): F9 active in Analog mode Bit 3 = 0(0): F10 not active in Analog mode = 1(8): F10 active in Analog mode Bit 4 = 0(0): F11 not active in Analog mode = 1(16): F11 active in Analog mode Bit 5 = 0(0): F12 not active in Analog mode = 1(32): F12 active in Analog mode Bit 6 = 0(0): F13 not active in Analog mode = 1(64) F13 active in Analog mode Bit 7 = 0(0): F14 not active in Analog mode = 1(255): F14 active in Analog mode</p>



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15	0	0-7	LockValue: Enter the value to match Lock ID in CV16 to unlock CV programming. No action and ACK will be performed by the decoder when LockValue is different from LockID. In this situation only CV15 write is allowed.
16	0	0-7	LockID: To prevent accidental programming use unique ID number for decoders with same address (0..7) 1-loco decoder, 2-sound decoder, 3-function decoder, ...
17	192	192-255	Extended Address, Address High
18	3	0-255	Extended Address, Address Low
19	0	0-127	Consist Address If CV #19 > 0: Speed and direction is governed by this consist address (not the individual address in CV #1 or #17+18); functions are controlled by either the consist address or individual address, see CV*s #21 + 22.
21	0	0-255	Functions defined here will be controlled by the consist address. Bit 0 = 0(0): F1 controlled by individual address = 1(1): by consist address Bit 1 = 0(0): F2 controlled by individual address = 1(2): by consist address Bit 2 = 0(0): F3 controlled by individual address



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			<p>= 1(4): by consist address</p> <p>Bit 3 = 0(0): F4 controlled by individual address</p> <p>= 1(8): by consist address</p> <p>Bit 4 = 0(0): F5 controlled by individual address</p> <p>= 1(16): by consist address</p> <p>Bit 5 = 0(0): F6 controlled by individual address</p> <p>= 1(32): by consist address</p> <p>Bit 6 = 0(0): F7 controlled by individual address</p> <p>= 1(64): by consist address</p> <p>Bit 7 = 0(0): F8 controlled by individual address</p> <p>= 1(255): by consist address</p>
22	0	0-63	<p>Functions defined here will be controlled by the consist address.</p> <p>Bit 0 = 0(0): F0 (forw.) controlled by individual address</p> <p>= 1(1): by consist address</p> <p>Bit 1 = 0 (0): F0 (rev.) controlled by individual address</p> <p>= 1(2): by consist address</p> <p>Bit 2 = 0(0): F9 controlled by individual address</p> <p>= 1(4): by consist address</p> <p>Bit 3 = 0(0): F10 controlled by individual address</p> <p>= 1(8): by consist address</p> <p>Bit 4 = 0(0): F11 controlled by individual address</p>



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			<p>= 1(16): by consist address</p> <p>Bit 5 = 0(0): F12 controlled by individual address</p> <p>= 1(32): by consist address</p>
29	6= 2+ 4	0-63	<p>Configuration Data</p> <p>Bit 0 = 0(0): Locomotive Direction normal = 1(1): Locomotive Direction reversed</p> <p>Bit 1 = 0(0): 14 speed steps = 1(2): 28 /128 speed steps</p> <p>Bit 2 = 0(0): Power Source Conversion NMRA Digital Only (only DCC) = 1(4): Power Source Conversion Enabled (DC + DCC)</p> <p>Bit 3-Not Used</p> <p>Bit 4 = 0(0): speed table set by configuration variables #2,#5, and #6 = 1(16): Speed Table set by configuration variables #66-#95</p> <p>Bit 5 = 0(0): one byte addressing (short addressing) = 1(32): two byte addressing (extended/long addressing)</p> <p>Bit 6 -Not Used</p> <p>Bit 7 -Not Used</p>
30	0	0/1	<p>Error CV. If the read out value is “1”, an overcurrent event occurred since the last reset. The value can be cleared with programming “0” to CV30</p>
33	255=	0-255	<p>F0, Forward move mapping, low byte</p> <p>Bit 0 = 0(0): Out1 not active on F0 forward</p>



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	1+		= 1(1): Out1 active on F0 forward
	2+		Bit 1 = 0(0): Out2 not active on F0 forward = 1(2): Out2 active on F0 forward
	4+		Bit 2 = 0(0): Out3 not active on F0 forward = 1(4): Out3 active on F0 forward
	8+		Bit 3 = 0(0): Out4 not active on F0 forward = 1(8): Out4 active on F0 forward
	16+		Bit 4 = 0(0): Out5 not active on F0 forward = 1(16): Out5 active on F0 forward
	32+		Bit 5 = 0(0): Out6 not active on F0 forward = 1(32): Out6 active on F0 forward
	64+		Bit 6 = 0(0): Out7 not active on F0 forward = 1(64): Out7 active on F0 forward
	128		Bit 7 = 0(0): Out8 not active on F0 forward = 1(128): Out8 active on F0 forward
34	255=	0-255	F0, Forward move mapping, high byte
	1+		Bit 0 = 0(0): Out9 not active on F0 forward = 1(1): Out9 active on F0 forward
	2+		Bit 1 = 0(0): Out10 not active on F0 forward = 1(2): Out10 active on F0 forward
	4+		Bit 2 = 0(0): Out11 not active on F0 forward = 1(4): Out11 active on F0 forward



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	8+		Bit 3 = 0(0): Out12 not active on F0 forward = 1(8): Out12 active on F0 forward
	16+		Bit 4 = 0(0): Out13 not active on F0 forward = 1(16): Out13 active on F0 forward
	32+		Bit 5 = 0(0): Out14 not active on F0 forward = 1(32): Out14 active on F0 forward
	64+		Bit 6 = 0(0): Out15 not active on F0 forward = 1(64): Out15 active on F0 forward
	128		Bit 7 = 0(0): Out16 not active on F0 forward = 1(128): Out16 active on F0 forward
35	255=	0-255	F0, Backward move mapping, low byte
	1+		Bit 0 = 0(0): Out1 not active on F0 backward = 1(1): Out1 active on F0 backward
	2+		Bit 1 = 0(0): Out2 not active on F0 backward = 1(2): Out2 active on F0 backward
	4+		Bit 2 = 0(0): Out3 not active on F0 backward = 1(4): Out3 active on F0 backward
	8+		Bit 3 = 0(0): Out4 not active on F0 backward = 1(8): Out4 active on F0 backward
	16+		Bit 4 = 0(0): Out5 not active on F0 backward = 1(16): Out5 active on F0 backward
			Bit 5 = 0(0): Out6 not active on F0 backward



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	32+		= 1(32): Out6 active on F0 backward
	64+		Bit 6 = 0(0): Out7 not active on F0 backward = 1(64): Out7 active on F0 backward
	128		Bit 7 = 0(0): Out8 not active on F0 backward = 1(128): Out8 active on F0 backward
36	255=	0-255	F0, Backward move mapping, high byte
	1+		Bit 0 = 0(0): Out9 not active on F0 backward = 1(1): Out9 active on F0 backward
	2+		Bit 1 = 0(0): Out10 not active on F0 backward = 1(2): Out10 active on F0 backward
	4+		Bit 2 = 0(0): Out11 not active on F0 backward = 1(4): Out11 active on F0 backward
	8+		Bit 3 = 0(0): Out12 not active on F0 backward = 1(8): Out12 active on F0 backward
	16+		Bit 4 = 0(0): Out13 not active on F0 backward = 1(16): Out13 active on F0 backward
	32+		Bit 5 = 0(0): Out14 not active on F0 backward = 1(32): Out14 active on F0 backward
	64+		Bit 6 = 0(0): Out15 not active on F0 backward = 1(64): Out15 active on F0 backward
	128		Bit 7 = 0(0): Out16 not active on F0 backward = 1(128): Out16 active on F0 backward



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37	1= 1	0-255	F1, Forward move mapping, low byte Bit 0 = 0(0): Out1 not active on F1 forward = 1(1): Out1 active on F1 forward Bit 1 = 0(0): Out2 not active on F1 forward = 1(2): Out2 active on F1 forward Bit 2 = 0(0): Out3 not active on F1 forward = 1(4): Out3 active on F1 forward Bit 3 = 0(0): Out4 not active on F1 forward = 1(8): Out4 active on F1 forward Bit 4 = 0(0): Out5 not active on F1 forward = 1(16): Out5 active on F1 forward Bit 5 = 0(0): Out6 not active on F1 forward = 1(32): Out6 active on F1 forward Bit 6 = 0(0): Out7 not active on F1 forward = 1(64): Out7 active on F1 forward Bit 7 = 0(0): Out8 not active on F1 forward = 1(128): Out8 active on F1 forward
38	0	0-255	F1, Forward move mapping, high byte Bit 0 = 0(0): Out9 not active on F1 forward = 1(1): Out9 active on F1 forward Bit 1 = 0(0): Out10 not active on F1 forward = 1(2): Out10 active on F1 forward



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			<p>Bit 2 = 0(0): Out11 not active on F1 forward = 1(4): Out11 active on F1 forward</p> <p>Bit 3 = 0(0): Out12 not active on F1 forward = 1(8): Out12 active on F1 forward</p> <p>Bit 4 = 0(0): Out13 not active on F1 forward = 1(16): Out13 active on F1 forward</p> <p>Bit 5 = 0(0): Out14 not active on F1 forward = 1(32): Out14 active on F1 forward</p> <p>Bit 6 = 0(0): Out15 not active on F1 forward = 1(64): Out15 active on F1 forward</p> <p>Bit 7 = 0(0): Out16 not active on F1 forward = 1(128): Out16 active on F1 forward</p>
39	1= 1	0-255	<p>F1, Backward move mapping, low byte</p> <p>Bit 0 = 0(0): Out1 not active on F1 backward = 1(1): Out1 active on F1 backward</p> <p>Bit 1 = 0(0): Out2 not active on F1 backward = 1(2): Out2 active on F1 backward</p> <p>Bit 2 = 0(0): Out3 not active on F1 backward = 1(4): Out3 active on F1 backward</p> <p>Bit 3 = 0(0): Out4 not active on F1 backward = 1(8): Out4 active on F1 backward</p> <p>Bit 4 = 0(0): Out5 not active on F1 backward</p>



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			<p>= 1(16): Out5 active on F1 backward Bit 5 = 0(0): Out6 not active on F1 backward = 1(32): Out6 active on F1 backward Bit 6 = 0(0): Out7 not active on F1 backward = 1(64): Out7 active on F1 backward Bit 7 = 0(0): Out8 not active on F1 backward = 1(128): Out8 active on F1 backward</p>
40	0	0-255	<p>F1, Backward move mapping, high byte Bit 0 = 0(0): Out9 not active on F1 backward = 1(1): Out9 active on F1 backward Bit 1 = 0(0): Out10 not active on F1 backward = 1(2): Out10 active on F1 backward Bit 2 = 0(0): Out11 not active on F1 backward = 1(4): Out11 active on F1 backward Bit 3 = 0(0): Out12 not active on F1 backward = 1(8): Out12 active on F1 backward Bit 4 = 0(0): Out13 not active on F1 backward = 1(16): Out13 active on F1 backward Bit 5 = 0(0): Out14 not active on F1 backward = 1(32): Out14 active on F1 backward Bit 6 = 0(0): Out15 not active on F1 backward = 1(64): Out15 active on F1 backward</p>



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			Bit 7 = 0(0): Out16 not active on F1 backward = 1(128): Out16 active on F1 backward
41	2= 2	0-255	F2 mapping, low byte Bit 0 = 0(0): Out1 not active on F2 = 1(1): Out1 active on F2 Bit 1 = 0(0): Out2 not active on F2 = 1(2): Out2 active on F2 Bit 2 = 0(0): Out3 not active on F2 = 1(4): Out3 active on F2 Bit 3 = 0(0): Out4 not active on F2 = 1(8): Out4 active on F2 Bit 4 = 0(0): Out5 not active on F2 = 1(16): Out5 active on F2 Bit 5 = 0(0): Out6 not active on F2 = 1(32): Out6 active on F2 Bit 6 = 0(0): Out7 not active on F2 = 1(64): Out7 active on F2 Bit 7 = 0(0): Out8 not active on F2 = 1(128): Out8 active on F2
42	0	0-255	F2 mapping, high byte Bit 0 = 0(0): Out9 not active on F2 = 1(1): Out9 active on F2



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			<p>Bit 1 = 0(0): Out10 not active on F2 = 1(2): Out10 active on F2</p> <p>Bit 2 = 0(0): Out11 not active on F2 = 1(4): Out11 active on F2</p> <p>Bit 3 = 0(0): Out12 not active on F2 = 1(8): Out12 active on F2</p> <p>Bit 4 = 0(0): Out13 not active on F2 = 1(16): Out13 active on F2</p> <p>Bit 5 = 0(0): Out14 not active on F2 = 1(32): Out14 active on F2</p> <p>Bit 6 = 0(0): Out15 not active on F2 = 1(64): Out15 active on F2</p> <p>Bit 7 = 0(0): Out16 not active on F2 = 1(128): Out16 active on F2</p>
43	4= 4	0-255	<p>F3 mapping, low byte</p> <p>Bit 0 = 0(0): Out1 not active on F3 = 1(1): Out1 active on F3</p> <p>Bit 1 = 0(0): Out2 not active on F3 = 1(2): Out2 active on F3</p> <p>Bit 2 = 0(0): Out3 not active on F3 = 1(4): Out3 active on F3</p> <p>Bit 3 = 0(0): Out4 not active on F3</p>



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			<p>= 1(8): Out4 active on F3 Bit 4 = 0(0): Out5 not active on F3 = 1(16): Out5 active on F3 Bit 5 = 0(0): Out6 not active on F3 = 1(32): Out6 active on F3 Bit 6 = 0(0): Out7 not active on F3 = 1(64): Out7 active on F3 Bit 7 = 0(0): Out8 not active on F3 = 1(128): Out8 active on F3</p>
44	0	0-255	<p>F3 mapping, high byte Bit 0 = 0(0): Out9 not active on F3 = 1(1): Out9 active on F3 Bit 1 = 0(0): Out10 not active on F3 = 1(2): Out10 active on F3 Bit 2 = 0(0): Out11 not active on F3 = 1(4): Out11 active on F3 Bit 3 = 0(0): Out12 not active on F3 = 1(8): Out12 active on F3 Bit 4 = 0(0): Out13 not active on F3 = 1(16): Out13 active on F3 Bit 5 = 0(0): Out14 not active on F3 = 1(32): Out14 active on F3</p>



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			Bit 6 = 0(0): Out15 not active on F3 = 1(64): Out15 active on F3 Bit 7 = 0(0): Out16 not active on F3 = 1(128): Out16 active on F3
45	8= 8+	0-255	F4 mapping, low byte Bit 0 = 0(0): Out1 not active on F4 = 1(1): Out1 active on F4 Bit 1 = 0(0): Out2 not active on F4 = 1(2): Out2 active on F4 Bit 2 = 0(0): Out3 not active on F4 = 1(4): Out3 active on F4 Bit 3 = 0(0): Out4 not active on F4 = 1(8): Out4 active on F4 Bit 4 = 0(0): Out5 not active on F4 = 1(16): Out5 active on F4 Bit 5 = 0(0): Out6 not active on F4 = 1(32): Out6 active on F4 Bit 6 = 0(0): Out7 not active on F4 = 1(64): Out7 active on F4 Bit 7 = 0(0): Out8 not active on F4 = 1(128): Out8 active on F4
46	0	0-255	F4 mapping, high byte



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			<p>Bit 0 = 0(0): Out9 not active on F4 = 1(1): Out9 active on F4</p> <p>Bit 1 = 0(0): Out10 not active on F4 = 1(2): Out10 active on F4</p> <p>Bit 2 = 0(0): Out11 not active on F4 = 1(4): Out11 active on F4</p> <p>Bit 3 = 0(0): Out12 not active on F4 = 1(8): Out12 active on F4</p> <p>Bit 4 = 0(0): Out13 not active on F4 = 1(16): Out13 active on F4</p> <p>Bit 5 = 0(0): Out14 not active on F4 = 1(32): Out14 active on F4</p> <p>Bit 6 = 0(0): Out15 not active on F4 = 1(64): Out15 active on F4</p> <p>Bit 7 = 0(0): Out16 not active on F4 = 1(128): Out16 active on F4</p>
47	16=	0-255	<p>F5 mapping, low byte</p> <p>Bit 0 = 0(0): Out1 not active on F5 = 1(1): Out1 active on F5</p> <p>Bit 1 = 0(0): Out2 not active on F5 = 1(2): Out2 active on F5</p> <p>Bit 2 = 0(0): Out3 not active on F5</p>



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	16		<p>= 1(4): Out3 active on F5 Bit 3 = 0(0): Out4 not active on F5 = 1(8): Out4 active on F5 Bit 4 = 0(0): Out5 not active on F5 = 1(16): Out5 active on F5 Bit 5 = 0(0): Out6 not active on F5 = 1(32): Out6 active on F5 Bit 6 = 0(0): Out7 not active on F5 = 1(64): Out7 active on F5 Bit 7 = 0(0): Out8 not active on F5 = 1(128): Out8 active on F5</p>
48	0	0-255	<p>F5 mapping, high byte Bit 0 = 0(0): Out9 not active on F5 = 1(1): Out9 active on F5 Bit 1 = 0(0): Out10 not active on F5 = 1(2): Out10 active on F5 Bit 2 = 0(0): Out11 not active on F5 = 1(4): Out11 active on F5 Bit 3 = 0(0): Out12 not active on F5 = 1(8): Out12 active on F5 Bit 4 = 0(0): Out13 not active on F5 = 1(16): Out13 active on F5</p>



			Bit 5 = 0(0): Out14 not active on F5 = 1(32): Out14 active on F5 Bit 6 = 0(0): Out15 not active on F5 = 1(64): Out15 active on F5 Bit 7 = 0(0): Out16 not active on F5 = 1(128): Out16 active on F5
49	32= 32	0-255	F6 mapping, low byte Bit 0 = 0(0): Out1 not active on F6 = 1(1): Out1 active on F6 Bit 1 = 0(0): Out2 not active on F6 = 1(2): Out2 active on F6 Bit 2 = 0(0): Out3 not active on F6 = 1(4): Out3 active on F6 Bit 3 = 0(0): Out4 not active on F6 = 1(8): Out4 active on F6 Bit 4 = 0(0): Out5 not active on F6 = 1(16): Out5 active on F6 Bit 5 = 0(0): Out6 not active on F6 = 1(32): Out6 active on F6 Bit 6 = 0(0): Out7 not active on F6 = 1(64): Out7 active on F6 Bit 7 = 0(0): Out8 not active on F6



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			= 1(128): Out8 active on F6
50	0	0-255	F6 mapping, high byte Bit 0 = 0(0): Out9 not active on F6 = 1(1): Out9 active on F6 Bit 1 = 0(0): Out10 not active on F6 = 1(2): Out10 active on F6 Bit 2 = 0(0): Out11 not active on F6 = 1(4): Out11 active on F6 Bit 3 = 0(0): Out12 not active on F6 = 1(8): Out12 active on F6 Bit 4 = 0(0): Out13 not active on F6 = 1(16): Out13 active on F6 Bit 5 = 0(0): Out14 not active on F6 = 1(32): Out14 active on F6 Bit 6 = 0(0): Out15 not active on F6 = 1(64): Out15 active on F6 Bit 7 = 0(0): Out16 not active on F6 = 1(128): Out16 active on F6
51	64=	0-255	F7 mapping, low byte Bit 0 = 0(0): Out1 not active on F7 = 1(1): Out1 active on F7 Bit 1 = 0(0): Out2 not active on F7



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	64		<p>= 1(2): Out2 active on F7 Bit 2 = 0(0): Out3 not active on F7 = 1(4): Out3 active on F7 Bit 3 = 0(0): Out4 not active on F7 = 1(8): Out4 active on F7 Bit 4 = 0(0): Out5 not active on F7 = 1(16): Out5 active on F7 Bit 5 = 0(0): Out6 not active on F7 = 1(32): Out6 active on F7 Bit 6 = 0(0): Out7 not active on F7 = 1(64): Out7 active on F7 Bit 7 = 0(0): Out8 not active on F7 = 1(128): Out8 active on F7</p>
52	0	0-255	<p>F7 mapping, high byte Bit 0 = 0(0): Out9 not active on F7 = 1(1): Out9 active on F7 Bit 1 = 0(0): Out10 not active on F7 = 1(2): Out10 active on F7 Bit 2 = 0(0): Out11 not active on F7 = 1(4): Out11 active on F7 Bit 3 = 0(0): Out12 not active on F7 = 1(8): Out12 active on F7</p>



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			<p>Bit 4 = 0(0): Out13 not active on F7 = 1(16): Out13 active on F7</p> <p>Bit 5 = 0(0): Out14 not active on F7 = 1(32): Out14 active on F7</p> <p>Bit 6 = 0(0): Out15 not active on F7 = 1(64): Out15 active on F7</p> <p>Bit 7 = 0(0): Out16 not active on F7 = 1(128): Out16 active on F7</p>
53	128=	0-255	<p>F8 mapping, low byte</p> <p>Bit 0 = 0(0): Out1 not active on F8 = 1(1): Out1 active on F8</p> <p>Bit 1 = 0(0): Out2 not active on F8 = 1(2): Out2 active on F8</p> <p>Bit 2 = 0(0): Out3 not active on F8 = 1(4): Out3 active on F8</p> <p>Bit 3 = 0(0): Out4 not active on F8 = 1(8): Out4 active on F8</p> <p>Bit 4 = 0(0): Out5 not active on F8 = 1(16): Out5 active on F8</p> <p>Bit 5 = 0(0): Out6 not active on F8 = 1(32): Out6 active on F8</p> <p>Bit 6 = 0(0): Out7 not active on F8</p>



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	128		<p>= 1(64): Out7 active on F8 Bit 7 = 0(0): Out8 not active on F8 = 1(128): Out8 active on F8</p>
54	0	0-255	<p>F8 mapping, high byte Bit 0 = 0(0): Out9 not active on F8 = 1(1): Out9 active on F8 Bit 1 = 0(0): Out10 not active on F8 = 1(2): Out10 active on F8 Bit 2 = 0(0): Out11 not active on F8 = 1(4): Out11 active on F8 Bit 3 = 0(0): Out12 not active on F8 = 1(8): Out12 active on F8 Bit 4 = 0(0): Out13 not active on F8 = 1(16): Out13 active on F8 Bit 5 = 0(0): Out14 not active on F8 = 1(32): Out14 active on F8 Bit 6 = 0(0): Out15 not active on F8 = 1(64): Out15 active on F8 Bit 7 = 0(0): Out16 not active on F8 = 1(128): Out16 active on F8</p>
55	0	0-255	<p>F9 mapping, low byte Bit 0 = 0(0): Out1 not active on F9</p>



			<p>= 1(1): Out1 active on F9 Bit 1 = 0(0): Out2 not active on F9 = 1(2): Out2 active on F9 Bit 2 = 0(0): Out3 not active on F9 = 1(4): Out3 active on F9 Bit 3 = 0(0): Out4 not active on F9 = 1(8): Out4 active on F9 Bit 4 = 0(0): Out5 not active on F9 = 1(16): Out5 active on F9 Bit 5 = 0(0): Out6 not active on F9 = 1(32): Out6 active on F9 Bit 6 = 0(0): Out7 not active on F9 = 1(64): Out7 active on F9 Bit 7 = 0(0): Out8 not active on F9 = 1(128): Out8 active on F9</p>
56	1= 1	0-255	<p>F9 mapping, high byte Bit 0 = 0(0): Out9 not active on F9 = 1(1): Out9 active on F9 Bit 1 = 0(0): Out10 not active on F9 = 1(2): Out10 active on F9 Bit 2 = 0(0): Out11 not active on F9 = 1(4): Out11 active on F9</p>



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			<p>Bit 3 = 0(0): Out12 not active on F9 = 1(8): Out12 active on F9</p> <p>Bit 4 = 0(0): Out13 not active on F9 = 1(16): Out13 active on F9</p> <p>Bit 5 = 0(0): Out14 not active on F9 = 1(32): Out14 active on F9</p> <p>Bit 6 = 0(0): Out15 not active on F9 = 1(64): Out15 active on F9</p> <p>Bit 7 = 0(0): Out16 not active on F9 = 1(128): Out16 active on F9</p>
57	0	0-255	<p>F10 mapping, low byte</p> <p>Bit 0 = 0(0): Out1 not active on F10 = 1(1): Out1 active on F10</p> <p>Bit 1 = 0(0): Out2 not active on F10 = 1(2): Out2 active on F10</p> <p>Bit 2 = 0(0): Out3 not active on F10 = 1(4): Out3 active on F10</p> <p>Bit 3 = 0(0): Out4 not active on F10 = 1(8): Out4 active on F10</p> <p>Bit 4 = 0(0): Out5 not active on F10 = 1(16): Out5 active on F10</p> <p>Bit 5 = 0(0): Out6 not active on F10</p>



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			<p>= 1(32): Out6 active on F10 Bit 6 = 0(0): Out7 not active on F10 = 1(64): Out7 active on F10 Bit 7 = 0(0): Out8 not active on F10 = 1(128): Out8 active on F10</p>
58	2= 2	0-255	<p>F10 mapping, high byte Bit 0 = 0(0): Out9 not active on F10 = 1(1): Out9 active on F10 Bit 1 = 0(0): Out10 not active on F10 = 1(2): Out10 active on F10 Bit 2 = 0(0): Out11 not active on F10 = 1(4): Out11 active on F10 Bit 3 = 0(0): Out12 not active on F10 = 1(8): Out12 active on F10 Bit 4 = 0(0): Out13 not active on F10 = 1(16): Out13 active on F10 Bit 5 = 0(0): Out14 not active on F10 = 1(32): Out14 active on F10 Bit 6 = 0(0): Out15 not active on F10 = 1(64): Out15 active on F10 Bit 7 = 0(0): Out16 not active on F10 = 1(128): Out16 active on F10</p>



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59	0	0-255	<p>F11 mapping, low byte</p> <p>Bit 0 = 0(0): Out1 not active on F11 = 1(1): Out1 active on F11</p> <p>Bit 1 = 0(0): Out2 not active on F11 = 1(2): Out2 active on F11</p> <p>Bit 2 = 0(0): Out3 not active on F11 = 1(4): Out3 active on F11</p> <p>Bit 3 = 0(0): Out4 not active on F11 = 1(8): Out4 active on F11</p> <p>Bit 4 = 0(0): Out5 not active on F11 = 1(16): Out5 active on F11</p> <p>Bit 5 = 0(0): Out6 not active on F11 = 1(32): Out6 active on F11</p> <p>Bit 6 = 0(0): Out7 not active on F11 = 1(64): Out7 active on F11</p> <p>Bit 7 = 0(0): Out8 not active on F11 = 1(128): Out8 active on F11</p>
60	4=	0-255	<p>F11 mapping, high byte</p> <p>Bit 0 = 0(0): Out9 not active on F11 = 1(1): Out9 active on F11</p> <p>Bit 1 = 0(0): Out10 not active on F11 = 1(2): Out10 active on F11</p>



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	4		<p>Bit 2 = 0(0): Out11 not active on F11 = 1(4): Out11 active on F11</p> <p>Bit 3 = 0(0): Out12 not active on F11 = 1(8): Out12 active on F11</p> <p>Bit 4 = 0(0): Out13 not active on F11 = 1(16): Out13 active on F11</p> <p>Bit 5 = 0(0): Out14 not active on F11 = 1(32): Out14 active on F11</p> <p>Bit 6 = 0(0): Out15 not active on F11 = 1(64): Out15 active on F11</p> <p>Bit 7 = 0(0): Out16 not active on F11 = 1(128): Out16 active on F11</p>
61	0	0-255	<p>F12 mapping, low byte</p> <p>Bit 0 = 0(0): Out1 not active on F12 = 1(1): Out1 active on F12</p> <p>Bit 1 = 0(0): Out2 not active on F12 = 1(2): Out2 active on F12</p> <p>Bit 2 = 0(0): Out3 not active on F12 = 1(4): Out3 active on F12</p> <p>Bit 3 = 0(0): Out4 not active on F12 = 1(8): Out4 active on F12</p> <p>Bit 4 = 0(0): Out5 not active on F12</p>



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			<p>= 1(16): Out5 active on F12 Bit 5 = 0(0): Out6 not active on F12 = 1(32): Out6 active on F12 Bit 6 = 0(0): Out7 not active on F12 = 1(64): Out7 active on F12 Bit 7 = 0(0): Out8 not active on F12 = 1(128): Out8 active on F12</p>
62	8= 8	0-255	<p>F12 mapping, high byte Bit 0 = 0(0): Out9 not active on F12 = 1(1): Out9 active on F12 Bit 1 = 0(0): Out10 not active on F12 = 1(2): Out10 active on F12 Bit 2 = 0(0): Out11 not active on F12 = 1(4): Out11 active on F12 Bit 3 = 0(0): Out12 not active on F12 = 1(8): Out12 active on F12 Bit 4 = 0(0): Out13 not active on F12 = 1(16): Out13 active on F12 Bit 5 = 0(0): Out14 not active on F12 = 1(32): Out14 active on F12 Bit 6 = 0(0): Out15 not active on F12 = 1(64): Out15 active on F12</p>



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			Bit 7 = 0(0): Out16 not active on F12 = 1(128): Out16 active on F12
105	0	0-255	USER data
106	0	0-255	USER data
112	15	1-127	FadeIN AUX Light Effect Fade ON, ex.:1=8ms, 15=120ms 125=1000ms
113	3	1-127	FadeOUT AUX Light Effect Fade OFF
114	3	0-7	Delay, Flourescent Tube Start, Blinking Delay 1-8 delay step [0..7]
115	10	1-255	Random Time Period, 1s-255s
116	3	0-7	Flicker Period: Fast-Slow 0..7 val
117	3	0-7	Defective Neon effects repetition time, 0 fast repetition, 7 slow repetition
120	127	0-255	Out 1 Light intensity, [1-255]
121	127	0-255	Out 2 Light intensity, [1-255]
122	127	0-255	Out 3 Light intensity, [1-255]
123	127	0-255	Out 4 Light intensity, [1-255]
124	127	0-255	Out 5 Light intensity, [1-255]
125	127	0-255	Out 6 Light intensity, [1-255]
126	127	0-255	Out 7 Light intensity, [1-255]
127	127	0-255	Out 8 Light intensity, [1-255]
128	127	0-255	Out 9 Light intensity, [1-255]



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129	127	0-255	Out 10 Light intensity, [1-255]
130	127	0-255	Out 11 Light intensity, [1-255]
131	127	0-255	Out 12 Light intensity, [1-255]
132	127	0-255	Out 13 Light intensity, [1-255]
133	127	0-255	Out 14 Light intensity, [1-255]
134	127	0-255	Out 15 Light intensity, [1-255]
135	127	0-255	Out 16 Light intensity, [1-255]
136	0	0-255	Out 1, Effect: Bit7= 128 Random operation / 0 normal operation + Bit0,1,3 = 0-Continuous, 1-Fade Lamp, 2-Fluorescent Tube, 3-Flickering Lamp, 4- Defective Neon effect
137	0	0-255	Out 2, Effect: Bit7= 128 Random operation / 0 normal operation + Bit0,1,3 = 0-Continuous, 1-Fade Lamp, 2-Fluorescent Tube,



			3-Flickering Lamp, 4- Defective Neon effect
138	0	0-255	Out 3, Effect: Bit7= 128 Random operation / 0 normal operation + Bit0,1,3 = 0-Continuous, 1-Fade Lamp, 2-Fluorescent Tube, 3-Flickering Lamp, 4- Defective Neon effect
139	0	0-255	Out 4, Effect: Bit7= 128 Random operation / 0 normal operation + Bit0,1,3 = 0-Continuous, 1-Fade Lamp, 2-Fluorescent Tube, 3-Flickering Lamp, 4- Defective Neon effect
140	0	0-255	Out 5, Effect: Bit7= 128 Random operation / 0 normal operation + Bit0,1,3 = 0-Continuous,



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			1-Fade Lamp, 2-Fluorescent Tube, 3-Flickering Lamp, 4- Defective Neon effect
141	0	0-255	Out 6, Effect: Bit7= 128 Random operation / 0 normal operation + Bit0,1,3 = 0-Continuous, 1-Fade Lamp, 2-Fluorescent Tube, 3-Flickering Lamp, 4- Defective Neon effect
142	0	0-255	Out 7, Effect: Bit7= 128 Random operation / 0 normal operation + Bit0,1,3 = 0-Continuous, 1-Fade Lamp, 2-Fluorescent Tube, 3-Flickering Lamp, 4- Defective Neon effect
143	0	0-255	Out 8, Effect: Bit7= 128 Random operation / 0 normal operation +



			Bit0,1,3 = 0-Continuous, 1-Fade Lamp, 2-Fluorescent Tube, 3-Flickering Lamp, 4- Defective Neon effect
144	0	0-255	Out 9, Effect: Bit7= 128 Random operation / 0 normal operation + Bit0,1,3 = 0-Continuous, 1-Fade Lamp, 2-Fluorescent Tube, 3-Flickering Lamp, 4- Defective Neon effect
145	0	0-255	Out 10, Effect: Bit7= 128 Random operation / 0 normal operation + Bit0,1,3 = 0-Continuous, 1-Fade Lamp, 2-Fluorescent Tube, 3-Flickering Lamp, 4- Defective Neon effect



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146	0	0-255	Out 11, Effect: Bit7= 128 Random operation / 0 normal operation + Bit0,1,3 = 0-Continuous, 1-Fade Lamp, 2-Fluorescent Tube, 3-Flickering Lamp, 4- Defective Neon effect
147	0	0-255	Out 12, Effect: Bit7= 128 Random operation / 0 normal operation + Bit0,1,3 = 0-Continuous, 1-Fade Lamp, 2-Fluorescent Tube, 3-Flickering Lamp, 4- Defective Neon effect
148	0	0-255	Out 13, Effect: Bit7= 128 Random operation / 0 normal operation + Bit0,1,3 = 0-Continuous, 1-Fade Lamp, 2-Fluorescent Tube,



			3-Flickering Lamp, 4- Defective Neon effect
149	0	0-255	Out 14, Effect: Bit7= 128 Random operation / 0 normal operation + Bit0,1,3 = 0-Continuous, 1-Fade Lamp, 2-Fluorescent Tube, 3-Flickering Lamp, 4- Defective Neon effect
150	0	0-255	Out 15, Effect: Bit7= 128 Random operation / 0 normal operation + Bit0,1,3 = 0-Continuous, 1-Fade Lamp, 2-Fluorescent Tube, 3-Flickering Lamp, 4- Defective Neon effect
151	0	0-255	Out 16, Effect: Bit7= 128 Random operation / 0 normal operation + Bit0,1,3 = 0-Continuous,



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			1-Fade Lamp, 2-Fluorescent Tube, 3-Flickering Lamp, 4- Defective Neon effect
152	0	0-1	Save Last State 1-Save 0-Don't Save
160	0	0-255	F13 mapping, low byte Bit 0 = 0(0): Out1 not active on F13 = 1(1): Out1 active on F13 Bit 1 = 0(0): Out2 not active on F13 = 1(2): Out2 active on F13 Bit 2 = 0(0): Out3 not active on F13 = 1(4): Out3 active on F13 Bit 3 = 0(0): Out4 not active on F13 = 1(8): Out4 active on F13 Bit 4 = 0(0): Out5 not active on F13 = 1(16): Out5 active on F13 Bit 5 = 0(0): Out6 not active on F13 = 1(32): Out6 active on F13 Bit 6 = 0(0): Out7 not active on F13 = 1(64): Out7 active on F13 Bit 7 = 0(0): Out8 not active on F13 = 1(128): Out8 active on F13



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161	16= 16	0-255	F13 mapping, high byte Bit 0 = 0(0): Out9 not active on F13 = 1(1): Out9 active on F13 Bit 1 = 0(0): Out10 not active on F13 = 1(2): Out10 active on F13 Bit 2 = 0(0): Out11 not active on F13 = 1(4): Out11 active on F13 Bit 3 = 0(0): Out12 not active on F13 = 1(8): Out12 active on F13 Bit 4 = 0(0): Out13 not active on F13 = 1(16): Out13 active on F13 Bit 5 = 0(0): Out14 not active on F13 = 1(32): Out14 active on F13 Bit 6 = 0(0): Out15 not active on F13 = 1(64): Out15 active on F13 Bit 7 = 0(0): Out16 not active on F13 = 1(128): Out16 active on F13
162	0	0-255	F14 mapping, low byte Bit 0 = 0(0): Out1 not active on F14 = 1(1): Out1 active on F14 Bit 1 = 0(0): Out2 not active on F14 = 1(2): Out2 active on F14



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			<p>Bit 2 = 0(0): Out3 not active on F14 = 1(4): Out3 active on F14</p> <p>Bit 3 = 0(0): Out4 not active on F14 = 1(8): Out4 active on F14</p> <p>Bit 4 = 0(0): Out5 not active on F14 = 1(16): Out5 active on F14</p> <p>Bit 5 = 0(0): Out6 not active on F14 = 1(32): Out6 active on F14</p> <p>Bit 6 = 0(0): Out7 not active on F14 = 1(64): Out7 active on F14</p> <p>Bit 7 = 0(0): Out8 not active on F14 = 1(128): Out8 active on F14</p>
163	32=	0-255	<p>F14 mapping, high byte</p> <p>Bit 0 = 0(0): Out9 not active on F14 = 1(1): Out9 active on F14</p> <p>Bit 1 = 0(0): Out10 not active on F14 = 1(2): Out10 active on F14</p> <p>Bit 2 = 0(0): Out11 not active on F14 = 1(4): Out11 active on F14</p> <p>Bit 3 = 0(0): Out12 not active on F14 = 1(8): Out12 active on F14</p> <p>Bit 4 = 0(0): Out13 not active on F14</p>



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	32		<p>= 1(16): Out13 active on F14 Bit 5 = 0(0): Out14 not active on F14 = 1(32): Out14 active on F14 Bit 6 = 0(0): Out15 not active on F14 = 1(64): Out15 active on F14 Bit 7 = 0(0): Out16 not active on F14 = 1(128): Out16 active on F14</p>
164	0	0-255	<p>F15 mapping, low byte Bit 0 = 0(0): Out1 not active on F15 = 1(1): Out1 active on F15 Bit 1 = 0(0): Out2 not active on F15 = 1(2): Out2 active on F15 Bit 2 = 0(0): Out3 not active on F15 = 1(4): Out3 active on F15 Bit 3 = 0(0): Out4 not active on F15 = 1(8): Out4 active on F15 Bit 4 = 0(0): Out5 not active on F15 = 1(16): Out5 active on F15 Bit 5 = 0(0): Out6 not active on F15 = 1(32): Out6 active on F15 Bit 6 = 0(0): Out7 not active on F15 = 1(64): Out7 active on F15</p>



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			<p>Bit 1 = 0(0): Out2 not active on F16 = 1(2): Out2 active on F16 Bit 2 = 0(0): Out3 not active on F16 = 1(4): Out3 active on F16 Bit 3 = 0(0): Out4 not active on F16 = 1(8): Out4 active on F16 Bit 4 = 0(0): Out5 not active on F16 = 1(16): Out5 active on F16 Bit 5 = 0(0): Out6 not active on F16 = 1(32): Out6 active on F16 Bit 6 = 0(0): Out7 not active on F16 = 1(64): Out7 active on F16 Bit 7 = 0(0): Out8 not active on F16 = 1(128): Out8 active on F16</p>
167	128=	0-255	<p>F16 mapping, high byte Bit 0 = 0(0): Out9 not active on F16 = 1(1): Out9 active on F16 Bit 1 = 0(0): Out10 not active on F16 = 1(2): Out10 active on F16 Bit 2 = 0(0): Out11 not active on F16 = 1(4): Out11 active on F16 Bit 3 = 0(0): Out12 not active on F16</p>



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	128		<p>= 1(8): Out12 active on F16</p> <p>Bit 4 = 0(0): Out13 not active on F16</p> <p>= 1(16): Out13 active on F16</p> <p>Bit 5 = 0(0): Out14 not active on F16</p> <p>= 1(32): Out14 active on F16</p> <p>Bit 6 = 0(0): Out15 not active on F16</p> <p>= 1(64): Out15 active on F16</p> <p>Bit 7 = 0(0): Out16 not active on F16</p> <p>= 1(128): Out16 active on F16</p>
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Tehnologistic Ltd.
Str. Libertatii Nr. 35A
407035 Apahida, Cluj
Romania
Tel +40-264-556454
Fax +40-264-441275

