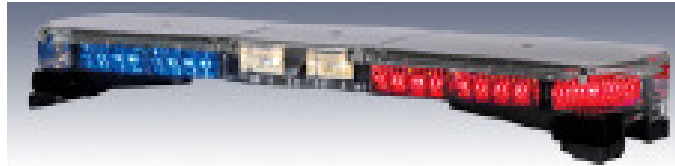


950 SERIES FLASH PATTERN SELECTION INSTRUCTION MANUAL



FOR DEFENDER® TRICORE®TC² LIGHT BARS



AND RX 2700CC MC LIGHT BARS

SUPPLEMENT TO MANUALS T11488 & T51171



RX2700CC MC AND DEFENDER® LIGHT BAR WITH TRICORE®TC² TECHNOLOGY 950 SERIES SOFTWARE FLASH PATTERN SELECTION INSTRUCTIONS

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For future reference record your product's serial no. here: _____

IMPORTANT: *Read all instruction and warnings before installing and using.*
INSTALLER: *This manual must be delivered to the end user of this equipment.*

LED/TriCore® Modules:

Selecting Flash Patterns:

There are seven possible 3-Level modes of operation (see Table 1). These modes are activated by combinations of the L1 (GRN/BLK), L2 (WHT/BLK) and L3 (RED/BLK) wires. For example a standard progressive switch will use the Level-1 (L1), Level-2 (L1 + L2) and Level-3 (L1 + L2 + L3) modes. When using individual switches, make sure to select patterns for all possible switch combinations. Each of the 3-Level modes of operation can individually flash up to 9 pairs of lighthoods. Each pair of lighthoods is programmed with a different wire in the 16 conductor cable (see Table 2).

NOTE: The 950 Series Software can operate a light bar with Multi-Color lighthoods in three zones (Rear, Front or Corners). If any of the lighthoods in a zone are Multi-Color, then that entire zone is considered a Multi-Color Zone and all 49 flash patterns will be available. If there are no Multi-Color lighthoods in a zone, then that zone is considered a Single Color Zone and only flash patterns 1 through 13 will be available.

The flash patterns are divided into four groups. The first group is the 'Standard Flash Patterns' and is available in both Multi-Color and Single Color Zones (1 through 13). The next three groups are only available to zones that are configured as Multi-Color Zones. The second group is the 'Primary Only Patterns' (14 through 25). The third group is the 'Secondary Only Patterns' (26 through 37). The last group is 'Primary to the Driver's Side and Secondary to the Passenger's Side Patterns' (38 through 49). Primary and Secondary refer to the two colors that are in a Multi-Color lighthouse. See Table 3 to determine which color is considered Primary or Secondary in each type of lighthouse.

The flash patterns in the first group (1 through 13) will automatically adjust to operate the lighthoods for the Multi-Color and Single Color zones. It is possible to have Multi-Color and Single Color lighthoods in the same zone. If the light bar is configured this way, then please note that all flash patterns will be available to the Single Color lighthoods, but these lighthoods may not flash in an affective way in all flash patterns. The best flash patterns to use for a Single Color lighthouse in a Multi-Color zone are the 'Primary Only Patterns' (14 through 25).

STEP 1:

Power-up the light bar. Select the desired 3-Level mode to program by applying +power to the appropriate wire in the 16 conductor cable (see Table 1).

STEP 2:

Continue applying +power to the wire(s) from Step 1. Enter Pattern Selection Mode by applying +power to the BLK/RED wire in the 16 conductor cable.

NOTE: The BLK/RED wire must be connected to +power during Pattern Selection Mode and must be removed from +power when pattern selection is completed. Failure to remove the BLK/RED wire from +power will effect the normal operation of the light bar.

STEP 3:

Continue applying power to the BLK/RED wire and the wire(s) from Step 1. Refer to Table 5A and Table 5B for the available flash patterns.

To increment to the next pattern, momentarily hold the appropriate pattern selection wire (see Table 2) to +power for less than two seconds and then release. The four corner light heads will turn on steady to indicate that the pattern has been incremented.

To decrement to the previous pattern, momentarily hold the appropriate pattern selection wire (see Table 2) to +power for two to four seconds and then release. The four corner light heads will turn on steady and then turn off to indicate that the pattern has been decremented.

After the pattern selection wire has been released, the new pattern will begin to flash and is automatically stored each time. Repeat this step for each pair of heads using the appropriate pattern selection wire (see Table 2).

NOTE: To restore the Factory Default Emergency Warning Flash Patterns, hold any of the pattern selection wires to +power for more than four seconds. The four corner light heads will turn on steady, turn off and then turn on steady again to indicate that the Factory Default Emergency Warning Flash Patterns have been restored. The factory defaults for a progressive switch application (Level-1, Level-2 and Level-3) are identified in Table 4.

STEP 4:

Repeat steps 1 through 3 for each of the seven possible 3-Level modes as desired.

TABLE 1: 3-LEVEL MODES OF OPERATION	
MODE NUMBER	WIRES ACTIVATED
L1	GRN/BLK (LEVEL-1)
L2	WHT/BLK
L1 + L2	GRN/BLK & WHT/BLK (LEVEL-2)
L3	RED/BLK
L1 + L3	GRN/BLK & RED/BLK
L2 + L3	WHT/BLK & RED/BLK
L1 + L2 + L3	GRN/BLK, WHT/BLK, & RED/BLK (LEVEL-3)

TABLE 2: PATTERN SELECTION WIRES	
WIRE COLOR	PAIR OF HEADS CONTROLLED
GRN/WHT	FRONT OUTBOARD
BLU/BLK	FRONT INBOARD
ORG/BLK	FRONT CENTER
GRN	FRONT CORNER
BLK/WHT	REAR OUTBOARD
RED/WHT	REAR INBOARD
BLU/WHT	REAR CENTER
BLU	REAR CORNER
BLK	ARROWSTIK® END FLASH

TABLE 3: PRIMARY/SECONDARY LAMP COLORS		
MULTI-COLOR LAMPS	PRIMARY COLOR	SECONDARY COLOR
RED/BLUE	RED	BLUE
RED/AMBER	RED	AMBER
RED/WHITE	RED	WHITE
BLUE/AMBER	BLUE	AMBER
BLUE/WHITE	BLUE	WHITE
AMBER/WHITE	AMBER	WHITE

TABLE 4: FACTORY DEFAULT EMERGENCY WARNING FLASH PATTERNS (PROGRESSIVE SWITCH)			
LAMP POSITION	LEVEL-1 DEFAULT	LEVEL-2 DEFAULT	LEVEL-3 DEFAULT
FRONT OUTBOARD	NULL FLASH (13)	FAST QUAD (1)	CYCLE FLASH (12)
FRONT INBOARD	NULL FLASH (13)	FAST QUAD (1)	CYCLE FLASH (12)
FRONT CENTER	NULL FLASH (13)	FAST QUAD (1)	CYCLE FLASH (12)
FRONT CORNER	NULL FLASH (13)	FAST QUAD (1)	CYCLE FLASH (12)
REAR OUTBOARD	FAST QUAD (1)	FAST QUAD (1)	CYCLE FLASH (12)
REAR INBOARD	FAST QUAD (1)	FAST QUAD (1)	CYCLE FLASH (12)
REAR CENTER	FAST QUAD (1)	FAST QUAD (1)	CYCLE FLASH (12)
REAR CORNER	FAST QUAD (1)	FAST QUAD (1)	CYCLE FLASH (12)
ARROWSTIK® END FLASH	FAST QUAD (1)	FAST QUAD (1)	CYCLE FLASH (12)

TABLE 5A: EMERGENCY WARNING FLASH PATTERNS	
STANDARD FLASH PATTERNS	
PATTERN NUMBER	PATTERN DESCRIPTION
1	FAST QUAD 80FPM
2	SLOW QUAD 60FPM
3	FAST SINGLE 375FPM
4	MEDIUM SINGLE 115FPM
5	SLOW SINGLE 60FPM
6	FAST DOUBLE 115FPM
7	SLOW DOUBLE 60FPM
8	FAST SIX 80FPM
9	SLOW SIX 60FPM
10	VARIABLE RATE SINGLE
11	NFPA QUAD 75FPM
12	CYCLE FLASH
13	NULL FLASH (OFF)
PRIMARY ONLY PATTERNS	
PATTERN NUMBER	PATTERN DESCRIPTION
14	FAST QUAD 80FPM
15	SLOW QUAD 60FPM
16	FAST SINGLE 375FPM
17	MEDIUM SINGLE 115FPM
18	SLOW SINGLE 60FPM
19	FAST DOUBLE 115FPM
20	SLOW DOUBLE 60FPM
21	FAST SIX 80FPM
22	SLOW SIX 60FPM
23	VARIABLE RATE SINGLE
24	NFPA QUAD 75FPM
25	CYCLE FLASH

TABLE 5B: EMERGENCY WARNING FLASH PATTERNS (CONTINUED)**SECONDARY ONLY PATTERNS**

PATTERN NUMBER	PATTERN DESCRIPTION
26	FAST QUAD 80FPM
27	SLOW QUAD 60FPM
28	FAST SINGLE 375FPM
29	MEDIUM SINGLE 115FPM
30	SLOW SINGLE 60FPM
31	FAST DOUBLE 115FPM
32	SLOW DOUBLE 60FPM
33	FAST SIX 80FPM
34	SLOW SIX 60FPM
35	VARIABLE RATE SINGLE
36	NFPA QUAD 75FPM
37	CYCLE FLASH

PRIMARY DRIVER'S SIDE / SECONDARY PASSENGER'S SIDE PATTERNS

PATTERN NUMBER	PATTERN DESCRIPTION
38	FAST QUAD 80FPM
39	SLOW QUAD 60FPM
40	FAST SINGLE 375FPM
41	MEDIUM SINGLE 115FPM
42	SLOW SINGLE 60FPM
43	FAST DOUBLE 115FPM
44	SLOW DOUBLE 60FPM
45	FAST SIX 80FPM
46	SLOW SIX 60FPM
47	VARIABLE RATE SINGLE
48	NFPA QUAD 75FPM
49	CYCLE FLASH

ArrowStik® Modules:

Selecting the ArrowStik® Pattern:

The Central Controller is designed to offer user selectable traffic directing and traffic warning flash patterns. Each of the ArrowStik functions (LEFT, CENTER-OUT, RIGHT or FLASH) can be programmed individually for unique patterns and flash rates. This allows the greatest flexibility when controlling the various light bar configurations available. The light bar can be ordered with a 5, 6, 7 or 8 lighthouse configuration. The light bar will come from the factory with the Building Fast pattern as the default for LEFT, CENTER-OUT and RIGHT. The default pattern for FLASH is the Standard Flash. If it is desired to change the pattern for any of the functions, follow the programming procedure below.

STEP 1:

Power-up the light bar. Apply +power to the appropriate wire for the ArrowStik function that you wish to program (LEFT - RED, CENTER-OUT - RED and ORG, RIGHT - ORG or FLASH - WHT). **Programming will not work if more than one function is selected at a time.**

STEP 2:

Continue applying power to the wire from Step 1. Refer to Table 6 for the available flash patterns.

To increment to the next pattern, momentarily hold the BLK/RED wire to +power for less than two seconds and then release. The four corner light heads will turn on steady to indicate that the pattern has been incremented.

To decrement to the previous pattern, momentarily hold the BLK/RED wire to +power for two to four seconds and then release. The four corner light heads will turn on steady and then turn off to indicate that the pattern has been decremented.

After the pattern selection wire has been released, the new pattern will begin to flash and is automatically stored each time.

Notice that for the LEFT, CENTER-OUT and RIGHT functions there are four pattern choices (Building, Building with 3 Flash for the end lighthouses, Traveling Ball with 3 flash for the end lighthouses, and Build/Collapse) and three speeds (Fast, Medium and Slow). There are a total of twelve possible selections for each function and then you return to the top selection.

For the FLASH function there are nine traffic warning patterns available. Flash patterns marked with an asterisk "*" can be selected in Fast, Medium or Slow flash rate.

NOTE: To restore the Factory Default ArrowStik Flash Patterns, hold the BLK/RED wire to +power for more than four seconds. The four corner light heads will turn on steady, turn off and then turn on steady again to indicate that the Factory Default ArrowStik Flash Patterns have been restored.

STEP 3:

Repeat steps 1 through 2 for the other ArrowStik functions as desired.

TABLE 6: TRAFFIC DIRECTING / TRAFFIC WARNING FLASH PATTERNS				
Mode	LEFT	CENTER-OUT	RIGHT	FLASH
1	Building	Building	Building	Standard Flash*
2	Building, 3 Flash	Building, 3 Flash	Building, 3 Flash	Quad Flash Standard
3	Traveling Ball, 3 Flash	Traveling Ball, 3 Flash	Traveling Ball, 3 Flash	Simultaneous Flash*
4	Build/Collapse	Build/Collapse	Build/Collapse	Quad Flash Simultaneous
5				Even/Odd Flash*
6				Quad Flash Even/Odd
7				Left/Right Flash*
8				Quad Flash Left/Right
9				Traveling Ball Flash*
	All Patterns have a fast, medium, or slow speed.	All Patterns have a fast, medium, or slow speed.	All Patterns have a fast, medium, or slow speed.	Patterns with the * have a fast, medium, or slow speed.

Take Down and Alley Light Modules:

Selecting Flash Patterns:

The Take Down and Alley Lights can be programmed to flash at different rates.

NOTE: Certain rates are designed for use with LED/TriCore® Take Down or Alleys and may not work well with Halogen Lamps.

STEP 1:

Power-up the light bar. Select the Take Down Flash Mode (BLK) or the Alley Flash Mode (BLU/WHT) by applying +power to the appropriate wire. **Programming will not work if more than one function is selected at a time.**

STEP 2:

Continue applying power to the wire from Step 1. Refer to Table 7 for the available flash patterns.

To increment to the next pattern, momentarily hold the BLK/RED wire to +power for less than two seconds and then release. The four corner light heads will turn on steady to indicate that the pattern has been incremented.

To decrement to the previous pattern, momentarily hold the BLK/RED wire to +power for two to four seconds and then release. The four corner light heads will turn on steady and then turn off to indicate that the pattern has been decremented.

After the pattern selection wire has been released, the new pattern will begin to flash and is automatically stored each time.

NOTE: To restore the Factory Default Take Down and Alley Flash Patterns, hold the BLK/RED wire to +power for more than four seconds. The four corner light heads will turn on steady, turn off and then turn on steady again to indicate that the Factory Default Take Down and Alley Flash Patterns have been restored. The default flash pattern for Take Down and Alley Lights is Medium Single 115FPM.

STEP 3:

Repeat steps 1 through 2 for the Take Down Flash Mode or the Alley Flash Mode as desired.

TABLE 7: TAKE DOWN AND ALLEY FLASH PATTERNS	
PATTERN NUMBER	PATTERN DESCRIPTION
1	FAST QUAD 80FPM
2	SLOW QUAD 60FPM
3	FAST SINGLE 375FPM
4	MEDIUM SINGLE 115FPM *
5	SLOW SINGLE 60FPM *
6	FAST DOUBLE 115FPM
7	SLOW DOUBLE 60FPM *
8	FAST SIX 80FPM
9	SLOW SIX 60FPM
10	VARIABLE RATE SINGLE
11	NFPA QUAD 75FPM
12	CYCLE FLASH

**Patterns that work with Halogens and LED/TriCore® Light Heads.
All other patterns are intended for use with LED/TriCore® Light Heads only.*

Secondary Take Down And Alley Light Modules:

Selecting Secondary Take Down and Alley Light Functions:

If the light bar is configured with Multi-Color lightheads in the Front, the Front Cut wire (GRN/WHT) can be configured to activate the Front Multi-Color lightheads in a Secondary Take Down mode (see Table 8).

If the light bar is configured with Multi-Color lightheads in the Corners, the Rear Cut wire (BLU/BLK) and the Cruise wire (GRN) can be configured to activate the Corner Multi-Color lightheads in a Secondary Alley Light mode. In addition the Cruise wire (GRN) can be configured for multiple Cruise functions. The Rear Cut can operate Secondary Right Alley lights and the Cruise can operate Secondary Left Alley lights. See Table 9 for Rear Cut Functions and Table 10 for Cruise functions.

NOTE: If the Front Cut wire (GRN/WHT) is configured to activate the Front Multi-Color lightheads as Secondary Take Downs, the standard Front Cut function will be disabled. If the Rear Cut wire (BLU/BLK) is configured to activate the Corner Multi-Color lightheads as Secondary Alley Lights, the standard Rear Cut function will be disabled. If the Cruise wire (BLU/BLK) is configured to activate the Corner Multi-Color lightheads as Secondary Alley Lights, the standard Cruise function will be disabled.

STEP 1:

Power up the light bar. Select the Front Cut function (GRN/WHT) or the Rear Cut function (BLU/BLK) or the Cruise function (GRN) by applying +power to the appropriate wire. **Programming will not work if more than one function is selected at a time.**

NOTE: If the Front Cut wire (GRN/WHT) is configured for the Front Cut function, no lightheads will be activated when +power is applied to the GRN/WHT wire. If the Rear Cut wire (BLU/BLK) is configured for the Rear Cut function, no lightheads will be activated when +power is applied to the BLU/BLK wire.

STEP 2:

Continue applying power to the wire from Step 1. Refer to Table 8 for the available Front Cut functions, Table 9 for the available Rear Cut Functions or Table 10 for the available Cruise Light functions.

To increment to the next function, momentarily hold the BLK/RED wire to +power for less than two seconds and then release. The four corner light heads will turn on steady to indicate that the function has been incremented.

To decrement to the previous function, momentarily hold the BLK/RED wire to +power for two to four seconds and then release. The four corner light heads will turn on steady and then turn off to indicate that the function has been decremented.

After the BLK/RED wire has been released, the new function will begin to operate and is automatically stored each time.

NOTE: To restore the Factory Default Secondary Take Down and Alley Light Functions, hold the BLK/RED wire to +power for more than four seconds. The four corner light heads will turn on steady, turn off and then turn on steady again to indicate that the Factory Default Secondary Take Down and Alley Light Functions have been restored. The default function for the Front Cut, Rear Cut and Cruise wires is function number 1 as shown in Tables 8, 9 and 10.

STEP 3:

Repeat steps 1 through 2 for the Front Cut function, Rear Cut function or Cruise function as desired.

TABLE 8: FRONT CUT FUNCTIONS	
FUNCTION NUMBER	FUNCTION DESCRIPTION
1	STANDARD FRONT CUT FUNCTION
2	RED/BLUE TAKE DOWN (OUTBOARD LIGHTHEADS)*
3	RED/BLUE TAKE DOWN (INBOARD LIGHTHEADS)*
4	RED/BLUE TAKE DOWN (INBOARD AND CENTER LIGHTHEADS)*
5	RED/BLUE TAKE DOWN (ALL FRONT EXCEPT CENTER LIGHTHEADS)*
6	RED/BLUE TAKE DOWN (ALL FRONT LIGHTHEADS)*
7	WHITE ONLY TAKE DOWN (OUTBOARD LIGHTHEADS)**
8	WHITE ONLY TAKE DOWN (INBOARD LIGHTHEADS)**
9	WHITE ONLY TAKE DOWN (INBOARD AND CENTER LIGHTHEADS)**
10	WHITE ONLY TAKE DOWN (ALL FRONT EXCEPT CENTER LIGHTHEADS)**
11	WHITE ONLY TAKE DOWN (ALL FRONT LIGHTHEADS)**

TABLE 9: REAR CUT FUNCTIONS	
FUNCTION NUMBER	FUNCTION DESCRIPTION
1	STANDARD REAR CUT FUNCTION
2	RED/BLUE RIGHT ALLEY (FRONT CORNER LIGHTHEAD)*
3	RED/BLUE RIGHT ALLEY (REAR CORNER LIGHTHEAD)*
4	WHITE ONLY RIGHT ALLEY (FRONT CORNER LIGHTHEAD)**
5	WHITE ONLY RIGHT ALLEY (REAR CORNER LIGHTHEAD)**

TABLE 10: CRUISE FUNCTIONS	
FUNCTION NUMBER	FUNCTION DESCRIPTION
1	CRUISE PRIMARY LAMPS ONLY
2	CRUISE SECONDARY LAMPS ONLY
3	CRUISE PRIMARY DRIVER'S SIDE / SECONDARY PASSENGER'S SIDE
4	RED/BLUE LEFT ALLEY (FRONT CORNER LIGHTHEAD)*
5	RED/BLUE LEFT ALLEY (REAR CORNER LIGHTHEAD)*
6	WHITE ONLY LEFT ALLEY (FRONT CORNER LIGHTHEAD)**
7	WHITE ONLY LEFT ALLEY (REAR CORNER LIGHTHEAD)**

*RED/BLUE Functions will activate both colors in the Multi-Color lighthead and are designed for use in RED/BLUE light-heads only. When the RED/BLUE lightheads are activated together the colors will blend creating the effect of a WHITE lighthead when veiwed from a distance.

**WHITE ONLY Functions will activate only the secondary color in the Multi-Color lighthead and are designed for use in RED/WHITE, BLUE/WHITE and AMBER/WHITE lightheads only.

Notes:

Notes:

WARRANTY

Code 3®, Inc.'s emergency devices with LED or TriCore® Technology are tested and found to be operational at the time of manufacture. Provided this product is installed and operated in accordance with the manufacturer's recommendations, Code 3, Inc. warrants all parts and components (with the exception of all incandescent and halogen bulbs) of the product to be free of defects in material and workmanship for a period of one (1) year and TriCore light heads for a period of five (5) years from the date of purchase. This Warranty excludes normal wear & tear. Units demonstrated to be defective within the warranty period will be repaired or replaced at the factory service center at no cost. Code 3, Inc. will return the repaired product with transportation cost prepaid. Code 3, Inc. assumes no liability for expenses incurred in the packaging, handling, and shipping of the product to the Factory Technical Service Department for repair. For in-warranty product return authorization, questions regarding product warranty coverage or questions regarding out-of-warranty repair quotes, contact the Factory Technical Service Department.

The TriCore light heads are sealed as part of the quality control process. This Warranty is void if, in the judgment of Code 3, Inc. (1) an attempt has been made to break the light head seal or repair the light head, and/or (2) the product has been used with inappropriate or inadequate wiring or circuit protection, and/or (3) the product has failed as a result of abuse or unusual use and/or accidents.

CODE 3, INC. SHALL IN NO WAY BE LIABLE FOR ANY OTHER DAMAGES RELATING TO THE PRODUCT INCLUDING BUT NOT LIMITED TO CONSEQUENTIAL, INCIDENTAL, INDIRECT OR SPECIAL DAMAGES OR LOST PROFITS OR REVENUE; NOR ANY EXPENSES INCURRED IN THE REMOVAL AND/OR RE-INSTALLATION OF PRODUCTS REQUIRING SERVICE AND/OR REPAIR.

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Problems or Questions? Call The Technical Assistance HOT LINE - (314) 996-2800

PRODUCT RETURNS

If a product must be returned for repair or replacement*, please contact our factory to obtain a Return Goods Authorization Number (RGA number) before you ship the product to Code 3®, Inc. Write the RGA number clearly on the package near the mailing label. Be sure you use sufficient packing materials to avoid damage to the product being returned while in transit.

*Code 3®, Inc. reserves the right to repair or replace at its discretion. Code 3®, Inc. assumes no responsibility or liability for expenses incurred for the removal and /or reinstallation of products requiring service and/or repair.; nor for the packaging, handling, and shipping; nor for the handling of products returned to sender after the service has been rendered.



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