

Introduction: The Citadel MC Controller is an interior mounted control box that controls the flash rates and patterns of the Citadel Rear Light Bar with the same flash patterns and sequences as the WingMan Flex.



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Product Specifications:

Light Hd Options: 12 LED Multi Color = Red/Blue, Red/Amber, Blue/Amber, Red/White, Blue/White, & Amber/White---All CC Controlled
 6 LED Single Color = Red, Blue, Amber, & White-----All CC Controlled

Input Voltage: =-----12VDC

Input Current: = Startup Current-----0.007 Amps

Current @ Power-----0.005 Amps

Max Current----- (6) Light Hd Multi or Single Color Version-----9.20 Amps

IMPORTANT! Read all instructions before installing and using. Installer: This manual must be delivered to the end user.



WARNING!

Failure to install or use this product according to manufacturers recommendations may result in property damage, serious injury, and/or death to those you are seeking to protect!



Do not install and/or operate this safety product unless you have read and understand the safety information contained in this manual.

1. Proper installation combined with operator training in the use, care, and maintenance of emergency warning devices are essential to ensure the safety of emergency personnel and the public.
2. Emergency warning devices often require high electrical voltages and/or currents. Exercise caution when working with live electrical connections.
3. This product must be properly grounded. Inadequate grounding and/or shorting of electrical connections can cause high current arcing, which can cause personal injury and/or severe vehicle damage, including fire.
4. Proper placement and installation is vital to the performance of this warning device. Install this product so that output performance of the system is maximized and the controls are placed within convenient reach of the operator so that s/he can operate the system without losing eye contact with the roadway.
5. It is the responsibility of the vehicle operator to ensure daily that all features of this product work correctly. In use, the vehicle operator should ensure the projection of the warning signal is not blocked by vehicle components (i.e., open trunks or compartment doors), people, vehicles or other obstructions.
6. The use of this or any other warning device does not ensure all drivers can or will observe or react to an emergency warning signal. Never take the right-of-way for granted. It is your responsibility to be sure you can proceed safely before entering an intersection, drive against traffic, respond at a high rate of speed, or walk on or around traffic lanes.
7. This equipment is intended for use by authorized personnel only. The user is responsible for understanding and obeying all laws regarding emergency warning devices. Therefore, the user should check all applicable city, state, and federal laws and regulations. The manufacturer assumes no liability for any loss resulting from the use of this warning device.

Mounting - Citadel MC Central Controller Box:

The Citadel MC Central Controller Box can be mounted anywhere in the vehicle that is protected from extreme heat and the elements, (4) slots are provided for mounting with Customer Provided fasteners.



Caution! When drilling into any vehicle surface, make sure that the area is free from any electrical wires, fuel lines, sensors, vehicle upholstery, etc, that could be damaged.



WARNING!

This unit must be mounted within the interior or trunk compartment of the vehicle only! It is not intended for use in exterior applications. All devices should be mounted in accordance with the manufacturer's instructions and securely fastened to vehicle elements of sufficient strength to withstand the forces applied to the device. Driver and/or passenger air bags (SRS) will affect the way the equipment should be mounted. This device should be mounted by permanent installation and within the zones specified by the vehicle manufacturer, if any. Any device in the deployment area of an air bag will damage or reduce the effectiveness of the air bag and may damage or dislodge the device. Installer must be sure that this device, its mounting hardware and electrical supply wiring does not interfere with the air bag or the SRS wiring or sensors. Mounting the unit inside the vehicle by a method other than permanent installation is not recommended as unit may become dislodged during swerving, sudden braking, or collision. Failure to follow instructions can result in personal injury.

Wiring - Citadel MC Central Controller Box:

Connect the wiring from the Citadel MC Central Controller Box as shown in the wiring diagram on page 3.

Notes:

1. Larger wires and tight connections will provide longer service life for components. For high current wires it is highly recommended that terminal blocks or soldered connections be used with shrink tubing to protect the connections. Do not use insulation displacement connectors (e.g., 3M Scotchlock type connectors).
2. Route wiring using grommets and sealant when passing through compartment walls. Minimize the number of splices to reduce voltage drop. High ambient temperatures (e.g., under-hood) will significantly reduce the current carrying capacity of wires, fuses, and circuit breakers. All wiring should conform to the minimum wire size and other recommendations of the manufacturer and be protected from moving parts and hot surfaces. Looms, grommets, cable ties, and similar installation hardware should be used to anchor and protect all wiring.
3. Fuses or circuit breakers should be located as close to the power takeoff points as possible and properly sized to protect the wiring and devices.
4. Particular attention should be paid to the location and method of making electrical connections and splices to protect these points from corrosion and loss of conductivity.
5. Ground termination should only be made to substantial chassis components, preferably directly to the vehicle battery.
6. Circuit breakers are very sensitive to high temperatures and will "false trip" when mounted in hot environments or operated close to their capacity.

MULTI COLOR CITADEL MC WIRING DIAGRAM

FLASH PATTERN CONTROL WIRES
CONNECT WIRES TO +12VDC TO PERFORM FUNCTIONS LISTED

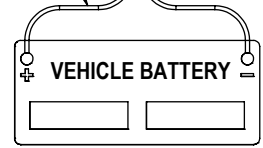
- GREEN / BLACK WIRE----- ARROWSTIK RIGHT
- WHITE / BLACK WIRE----- ARROWSTIK LEFT
- GREEN / BLACK + WHITE / BLACK-----ARROWSTIK CENTER OUT
- RED / BLACK WIRE----- ARROWSTIK FLASH
- BLUE / WHITE WIRE----- SCENE LIGHTS
- BLACK / WHITE WIRE----- DIMMING
- RED / WHITE WIRE ----- SEQUENCE SELECT
- BLACK / RED WIRE----- RATE SELECT
- BLACK WIRE----- LEVEL 1 FLASH
- ORANGE / BLACK WIRE----- LEVEL 2 FLASH

CUSTOMER SUPPLIED WIRES RUN TO Z3 SIREN OR OTHER SWITCHING SYSTEM. CONNECT WIRES TO 12 VDC TO ACTIVATE. ALSO FOR LEVELS 1 & 2 SEE PROGRESSIVE VS INDEPENDENT SWITCHING INSTRUCTIONS ON PAGE 4.

CUSTOMER SUPPLIED 22 GAUGE BUTT SPLICE TYPICAL (10X)

POWER & GROUND WIRES WILL REQUIRE CUSTOMER SUPPLIED 12 GAUGE WIRE, 12 GAUGE BUTT SPLICES, & 20 AMP FUSE

DS AS	BROWN / WHITE	2	GRAY
DS	GREEN / WHITE		NO WIRE CONNECTION
PS	ORANGE		NO WIRE CONNECTION
PS AS	LIGHT BLUE	5	TAN
PS AS	WHITE	4	VIOLET
DS AS	PINK	3	GREEN
DS AS	GREEN	1	YELLOW
DS	RED / WHITE	8	WHITE
PS	RED	11	RED / WHITE
PS AS	BLUE / WHITE	6	ORANGE
PS	PURPLE	10 & 12	BROWN & GREEN / WHITE
DS	BROWN	7 & 9	BLUE & PINK

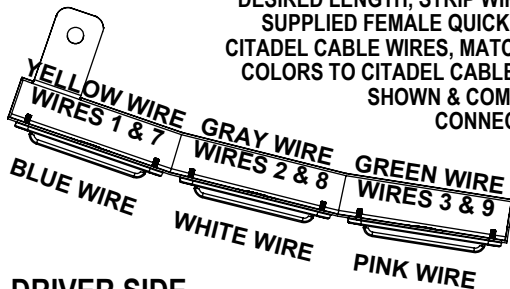


CONNECT BLACK WIRE TO (-) GROUND TERMINAL OF BATTERY

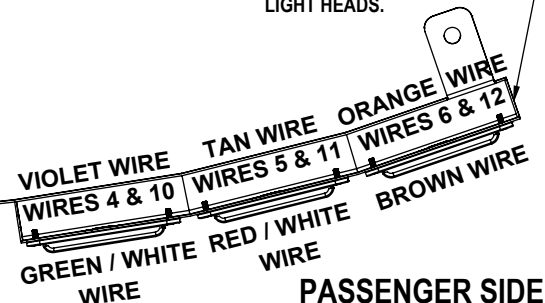
FORD PI SUV CITADEL SHOWN. WIRING IS THE SAME FOR THE TAHOE CITADEL. NOTE WIRE HARNESS COLORS THAT CONNECT TO INDIVIDUAL LIGHT HEADS.

WIRES 1 THRU 6 ARE ARROWSTIK DUAL & SINGLE COLOR LIGHT HEAD WIRES
NOTE: WIRES 7 THRU 12 ARE FOR DUAL COLOR CITADEL ONLY! DO NOT CONNECT THESE WIRES IF YOU HAVE A SINGLE COLOR CITADEL

AFTER CUTTING CITADEL CABLE TO DESIRED LENGTH, STRIP WIRES, CRIMP SUPPLIED FEMALE QUICK SLIDES TO CITADEL CABLE WIRES, MATCH UP WIRE COLORS TO CITADEL CABLE WIRES AS SHOWN & COMPLETE THE CONNECTIONS 12X.



CITADEL



IMPORTANT! This unit is a safety device, and it must be connected to its own separate, fused power point to assure its continued operation should any other electrical accessory fail.

LED Fusing Considerations - Citadel MC Versions

NOTE: The Components of the Citadel MC Controller System are circuit protected by the Citadel MC Controller CC Board so the individual wires in the System do not require fusing.

 **WARNING: DO NOT APPLY 12 VOLTS DIRECTLY TO THE CITADEL WIRES OR FLEX CONTROLLER WIRES AFTER THEY ARE CONNECTED TO THE CITADEL MULTI COLOR CC BOX. THE MULTI COLOR FLEX CONTROLLER CC BOARD OR THE LIGHT HEADS COULD BE DAMAGED BY APPLYING 12 VOLTS TO THE CC OUTPUTS!**

Progressive vs. Independent Switching

In a 2-level progressive switch application there are only 2 patterns that typically need to be set. Using the defaults in the Switching Table below, the patterns displayed would be as follows.

Pattern 1: The switch is moved from the off position (with the progressive levels notated in parentheses). The defaults listed in this manual are for the progressive 2 levels.

Pattern 2: In an application with 2- or 3- independent switches there are “combinations” of wire colors that can have unique flash patterns defined, thus allowing the switches to simulate a progressive style application. It is intuitive to think that only two unique flash patterns can be displayed in a system with 2 independent switches; however, three patterns are available. In the Switching Table below, independent switches can mimic a 2-level progressive switch or create a total of three different lighting levels.

Note: Remember that the switches that are not progressive, operate completely independent of each other.

Pattern 3: There are three possible 2-Level modes (see Switching Table below). The factory default is different for each of the 2 -Level modes. The standard progressive switch will use the Level-1 & Level-3 modes. The defaults for Level-1 (L1), Level-2 (L2) and Level-3 (L1 + L2) are identified below. When using individual non-progressive switches, make sure to select patterns for all switch combinations that will be utilized.

SWITCHING TABLE: 2-LEVEL MODES OF OPERATION

<u>MODE NUMBER</u>	<u>WIRES ACTIVATED</u>
L1-----	BLACK (LEVEL-1)
L2-----	ORANGE / BLACK
L1 + L2-----	BLACK (LEVEL-1) & ORANGE / BLACK (LEVEL-2)

Troubleshooting:

All Citadel MC units are thoroughly tested prior to shipment. However, should you encounter a problem during installation or during the life of the product, follow the guide below for information on repair and troubleshooting. Additional information may be obtained from the factory technical help line at 314-996-2800.

TROUBLESHOOTING GUIDE

Note: LED modules must be replaced as a module. There are no user serviceable parts.

PROBLEM	QUESTIONS	POSSIBLE CAUSE	SOLUTION
LED module not operating when powered.	N/A	a. Bad power/ground connection. b. Defective module.	a. Fix connection. b. Replace module



WARNING: This product contains high intensity LED devices. To prevent eye damage, DO NOT stare into the light beam at close range.

Flash Pattern Instructions: Citadel MC Units

**INSTALLER NOTE:
FLASH RATE + FLASH SEQUENCE = FLASH PATTERN**

Light Head Flash Sequences - Multi Color

**LEFT / RIGHT
(DEFAULT)** PRIMARY & SECONDARY
PRIMARY ONLY - **LEVEL - 1 DEFAULT**
SECONDARY ONLY
PRIMARY W / SECONDARY POPS
PRIMARY W / SECONDARY RANDOM

EVEN / ODD PRIMARY & SECONDARY
PRIMARY ONLY - **LEVEL - 2 DEFAULT**
SECONDARY ONLY
PRIMARY W / SECONDARY POPS
PRIMARY W / SECONDARY RANDOM

RANDOM PRIMARY & SECONDARY
PRIMARY ONLY
SECONDARY ONLY
PRIMARY W / SECONDARY POPS
PRIMARY W / SECONDARY RANDOM

**CYCLE SEQUENCE
RANDOM** PRIMARY & SECONDARY
PRIMARY ONLY
SECONDARY ONLY
PRIMARY W / SECONDARY POPS
PRIMARY W / SECONDARY RANDOM

**ALL ON
RANDOM** PRIMARY & SECONDARY

**SWEEP
LEFT / RIGHT** SECONDARY ONLY

NULL ALL LIGHT HEADS OFF

Light Head Flash Rates - Multi Color

Double Flash-75 - **LEVEL - 2 DEFAULT**
Triple Flash-75
Quad Flash-75
Quint Flash-75
Double Flash-150
Triple Flash-150 - **LEVEL - 1 DEFAULT**
Quad Flash-150
Quint Flash-150
Triple Pop Flash-150
Quad Pop Flash-150
Single Flash-375
Cycle Rates

Scene Steady

All Primary
All Secondary - **DEFAULT**

ArrowStik Pattern

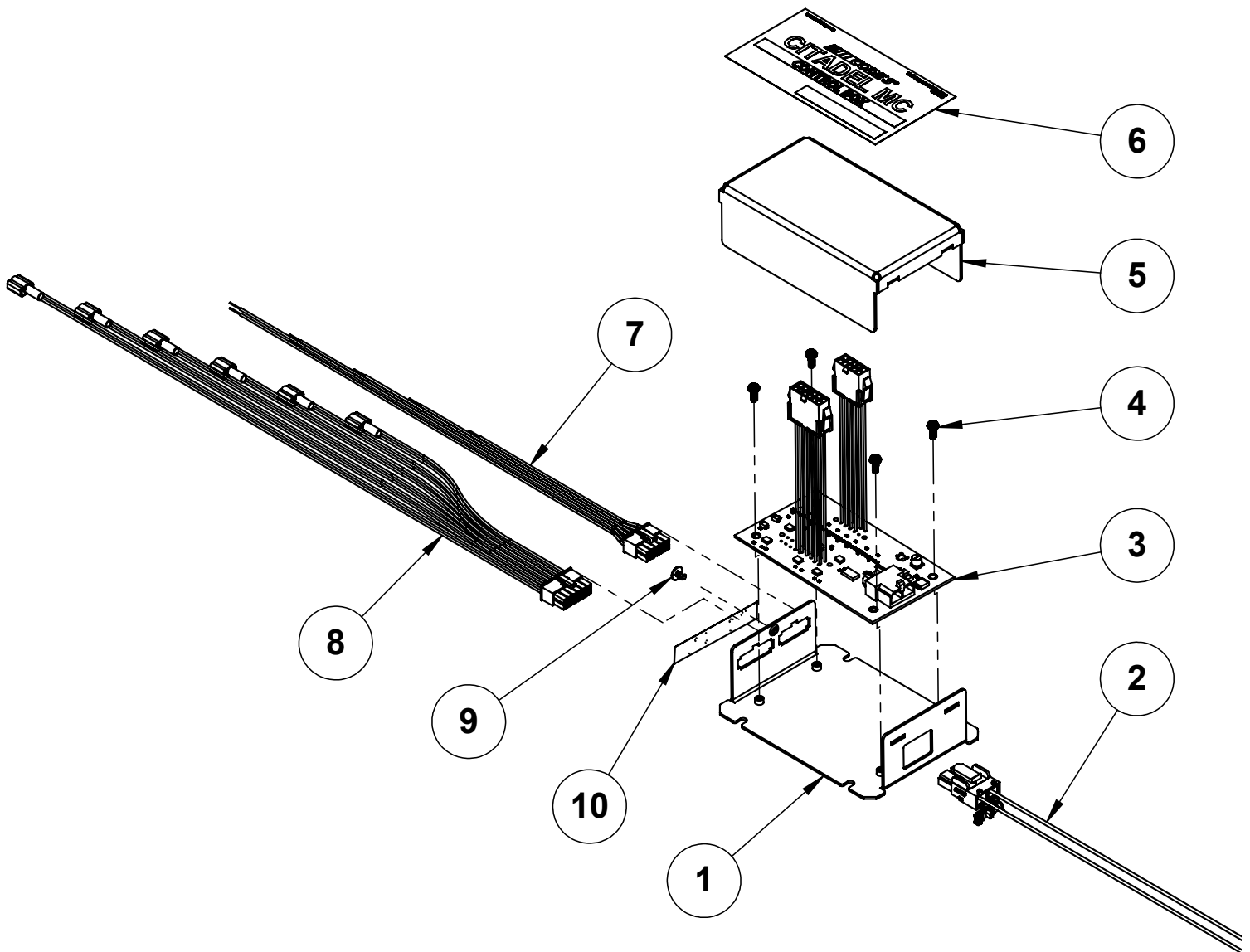
Build - **DEFAULT**
Build 3 Flash
Travel 3 Flash
Build / Collapse

ArrowStik Speed

0
1
2
3

ArrowStik Overrides All Other functions.
Scene Steady Overrides L1 & L2 Flashing.

Replacement Parts: CITADEL MC Box



<u>Reference Number</u>	<u>Part Description</u>	<u>Part Number</u>	<u>Quantity</u>
1	E-Tray - Multi Color SuperVisor	T17164	1
2	Power Ground Cable--Mass State Police Slick Top System	T56637	1
3	PCB Central Controller-Midrange	160-0494-00	1
4	#6-32 X.375 Phil Rd M/S, Stl, Zinc	T04250	4
5	Cover-CC Housing-Multi Color SuperVisor	T17165	1
6	Label-CC Box-Citadel MC	905-2635-00	1
7	Input Harness-Multi Color SuperVisor CC Box	T17166	1
8	Output Harness-Multi Color SuperVisor CC Box	T17167	1
9	#8 X .25 SMS Phillips Truss Head Screw-Black Oxided	T89905	1
10	Label-CC Box-Citadel MC-INPUT/OUTPUT	905-2635-00	Part of Item 6 Above

Notes:

Manufacturer Limited Warranty Policy:

Manufacturer warrants that on the date of purchase this product will conform to Manufacturer's specifications for this product (which are available from the Manufacturer upon request). This Limited Warranty extends for Sixty (60) months from the date of purchase.

DAMAGE TO PARTS OR PRODUCTS RESULTING FROM TAMPERING, ACCIDENT, ABUSE, MISUSE, NEGLIGENCE, UNAPPROVED MODIFICATIONS, FIRE OR OTHER HAZARD; IMPROPER INSTALLATION OR OPERATION; OR NOT BEING MAINTAINED IN ACCORDANCE WITH THE MAINTENANCE PROCEDURES SET FORTH IN MANUFACTURER'S INSTALLATION AND OPERATING INSTRUCTIONS VOIDS THIS LIMITED WARRANTY.

Exclusion of Other Warranties:

MANUFACTURER MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED. THE IMPLIED WARRANTIES FOR MERCHANTABILITY, QUALITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, USAGE OR TRADE PRACTICE ARE HEREBY EXCLUDED AND SHALL NOT APPLY TO THE PRODUCT AND ARE HEREBY DISCLAIMED, EXCEPT TO THE EXTENT PROHIBITED BY APPLICABLE LAW. ORAL STATEMENTS OR REPRESENTATIONS ABOUT THE PRODUCT DO NOT CONSTITUTE WARRANTIES.

Remedies and Limitation of Liability:

MANUFACTURER'S SOLE LIABILITY AND BUYER'S EXCLUSIVE REMEDY IN CONTRACT, TORT (INCLUDING NEGLIGENCE), OR UNDER ANY OTHER THEORY AGAINST MANUFACTURER REGARDING THE PRODUCT AND ITS USE SHALL BE, AT MANUFACTURER'S DISCRETION, THE REPLACEMENT OR REPAIR OF THE PRODUCT, OR THE REFUND OF THE PURCHASE PRICE PAID BY BUYER FOR NON-CONFORMING PRODUCT. IN NO EVENT SHALL MANUFACTURER'S LIABILITY ARISING OUT OF THIS LIMITED WARRANTY OR ANY OTHER CLAIM RELATED TO THE MANUFACTURER'S PRODUCTS EXCEED THE AMOUNT PAID FOR THE PRODUCT BY BUYER AT THE TIME OF THE ORIGINAL PURCHASE. IN NO EVENT SHALL MANUFACTURER BE LIABLE FOR LOST PROFITS, THE COST OF SUBSTITUTE EQUIPMENT OR LABOR, PROPERTY DAMAGE, OR OTHER SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES BASED UPON ANY CLAIM FOR BREACH OF CONTRACT, IMPROPER INSTALLATION, NEGLIGENCE, OR OTHER CLAIM, EVEN IF MANUFACTURER OR A MANUFACTURER'S REPRESENTATIVE HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. MANUFACTURER SHALL HAVE NO FURTHER OBLIGATION OR LIABILITY WITH RESPECT TO THE PRODUCT OR ITS SALE, OPERATION AND USE, AND MANUFACTURER NEITHER ASSUMES NOR AUTHORIZES THE ASSUMPTION OF ANY OTHER OBLIGATION OR LIABILITY IN CONNECTION WITH SUCH PRODUCT.

This Limited Warranty defines specific legal rights. You may have other legal rights which vary from jurisdiction to jurisdiction. Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages.

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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Technical Service:
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