

Satellite Communication

Model: Q-UV-ISAT2

Description, Configure, and Program Manual

25500792 Rev. A1 0723 Printed in U.S.A. © Copyright 2022-2023 Federal Signal Corporation

Limited Warranty

This product is subject to and covered by a limited warranty, a copy of which can be found at www.fedsig.com/SSG-Warranty. A copy of this limited warranty can also be obtained by written request to Federal Signal Corporation, 2645 Federal Signal Drive, University Park, IL 60484, email to info@fedsig.com or call +1 708-534-3400.

This limited warranty is in lieu of all other warranties, express or implied, contractual or statutory, including, but not limited to the warranty of merchantability, warranty of fitness for a particular purpose and any warranty against failure of its essential purpose.



2645 Federal Signal Drive University Park, Illinois 60484

www.fedsig.com

Customer Support	800-548-7229 • +1 708 534-3400
Technical Support	800-524-3021 • +1 708 534-3400

All product names or trademarks are properties of their respective owners.

Contents

Safety Messages	5
Software Safety Messages	7
General Description	8
Introduction	8
Overview	8
Features	8
Ordering Information	9
Qualifications	9
Specifications	9
Required Equipment	10
Required Hardware	
Required Software	10
Satellite Terminal (ST 6100) Required Information	11
Installing and Configuring the Satellite Terminal (ST 6100)	
1. Installing the Satellite Terminal (ST 6100)	
2. Confirming the Wiring Connections	12
3. Reading the Signal Strength of the Satellite	14
4. Determining if using Security Code or Encryption Key	
6. Programming the UV+ Controller card for Satellite Mode	19
6. Programming the FC Controller card for Satellite Mode	22
7. Configuring Commander Software for Satellite Mode	25
Getting Service	27

Table 1 Ordering Information 9
Table 2 Specifications 9
Table 3 Satellite Terminal (ST 6100) Required Information11
Figures
Figure 1 Satellite Communications
Figure 2 Equipment Included in Model Q-UV-ISAT210
Figure 3 UV+ Backplane Motherboard (JP13)12
Figure 4 UV+ Controller RS232-2 (left port)12
Figure 5 Wiring Connections from Satellite Terminal to the interface board to UV+ controller card
Figure 6 Satellite interface board14
Figure 7 Modular data cable with the three-way adapter and null modem15
Figure 8 Connecting PC, Universal Programmer, and UV+ controller card20
Figure 9 Connecting PC, Universal Programmer, and FC controller card

Tables

Safety Messages

A WARNING

It is important to follow all instructions shipped with this product. This device is to be installed by trained personnel who are thoroughly familiar with the country's electric codes and will follow these guidelines as well as local codes and ordinances, including any state or local noise-control ordinances. Listed below are important safety instructions and precautions you should follow.

Important Notice

Federal Signal reserves the right to make changes to devices and specifications detailed in the manual at any time to improve reliability, function, or design. The information in this manual has been carefully checked and is believed to be accurate; however, no responsibility is assumed for any inaccuracies.

Publications

Federal Signal recommends the following publications from the Federal Emergency Management Agency for assistance with planning an outdoor warning system:

- The "Outdoor Warning Guide" (CPG 1-17)
- "Civil Preparedness, Principles of Warning" (CPG 1-14)
- FEMA-REP-1, Appendix 3 (Nuclear Plant Guideline)
- FEMA-REP-10 (Nuclear Plant Guideline).

Planning

- If suitable warning equipment is not selected, the installation site for the siren is not selected properly, or the siren is not installed properly, it may not produce the intended optimum audible warning. Follow Federal Emergency Management Agency (FEMA) recommendations.
- If sirens are not activated promptly when an emergency condition exists, they cannot provide the intended audible warning. It is imperative that knowledgeable people, who are provided with the necessary information, be available at all times to authorize the activation of the sirens.
- When sirens are used out of doors, people indoors may not be able to hear the warning signals. Separate warning devices or procedures may be needed to warn people indoors effectively.
- The sound output of sirens is capable of causing permanent hearing damage. To prevent excessive exposure, carefully plan siren placement, post warnings, and restrict access to areas near sirens. Review and comply with any local or state noise control ordinances and OSHA noise exposure standards, regulations, and guidelines.
- Activating the sirens may not result in people taking the desired actions if those to be warned are not properly trained about the meaning of warning sounds. Users should follow FEMA recommendations and instruct those to be warned of corrective actions to be taken.

- After installation, service, or maintenance, test the siren system to confirm that it operates properly. Test the system regularly to confirm that it will be operational in an emergency.
- If future service and operating personnel do not have these instructions to refer to and are not properly trained, the system may not provide the intended audible warning, and service personnel may be exposed to hazards that could result in death, permanent hearing loss, or other bodily injuries. File these instructions in a safe place and refer to them periodically. Give a copy of these instructions to recruits and trainees.

Installation and Service

- Electrocution or severe personal injury can occur when performing various installation and service functions such as making electrical connections, drilling holes, or lifting equipment. Therefore, only experienced and qualified electricians should install this product in compliance with national, state, and any other applicable codes, ordinances, and regulations. Perform all work under the direction of the installation or service crew safety foreman.
- The sound output of sirens is capable of causing permanent hearing damage. To
 prevent excessive exposure, carefully plan siren placement, post warnings, and
 restrict access to areas near the sirens. Sirens may be operated from remote control
 points. Whenever possible, disconnect all siren power, including batteries, before
 working near the siren. Review and comply with any local or state noise control
 ordinances and OSHA noise exposure regulations and guidelines.
- After installation or service, test the siren system to confirm that it is operating properly. Test the system regularly to confirm that it will be operational in an emergency.
- If future service personnel do not have these instructions to refer to and are not properly trained, the system may not provide the intended audible warning, and service personnel may be exposed to hazards that could result in death, permanent hearing loss, or other bodily injuries. File these instructions in a safe place and refer to them periodically. Give a copy of these instructions to recruits and trainees. Give a copy to anyone who is going to service or repair the sirens.

Operation

Failure to understand the capabilities and limitations of your siren system could result in permanent hearing loss, other serious injuries, or death to persons too close to the sirens when you activate them or to those you need to warn. Carefully read and thoroughly understand all safety notices in this manual and all operations-related items in all instruction manuals shipped with the equipment. Thoroughly discuss all contingency plans with those responsible for warning people in your community, company, or jurisdiction. A well-written contingency plan document is recommended.

Hazard Classification

Federal Signal uses signal words to identify the following:

A DANGER

DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.

A WARNING

WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.

ACAUTION

CAUTION indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

NOTICE

NOTICE is used to address practices not related to physical injury.

Read and understand the information contained in this manual before attempting to install or service the siren.

Pay careful attention to notices located on the equipment.

Software Safety Messages

Listed below are important safety instructions and precautions you should follow:

Programming Warning

- Precautions for PC security must be followed. Administrative rights are required.
- Program after reading this manual.
- Only personnel thoroughly familiar with Commander_® operating instructions and the intended method of use should perform the programming.
- Correctly program Commander $_{\ensuremath{\circledast}}$ per the user's specific application before placing it into use.
- If programmed incorrectly, Commander_® may fail to operate as intended.
- Test $\mathsf{Commander}_{\circledcirc}$ for proper operation after programming and before placing into use.

General Description

Introduction

This manual describes how to configure the Satellite Terminal (ST 6100) to interface with the UV+ or FC Controller card and then program Commander_® software for satellite mode. The programming for the Satellite Terminal requires using the USB Flasher software and Commander_® software.

Overview

A satellite terminal is ideal for activating and monitoring sirens when distance and/or geographical barriers are present. The satellite terminal is offered using the IsatData Pro network based on its proven reliability and coverage. Satellite services can be added independently or together to form a robust network architecture.

Using Inmarsat's network of geosynchronous satellites, the IsatData Pro network provides the ability to monitor and control remote Federal Signal sirens. The remote satellite terminal is a rugged external, small form factor design that requires outdoor mounting. The network availability is 99.995%, and the 24/7 Network Operations Center (NOC) provides continuous and reliable service, which is required with these types of mission-critical services.



Figure 1 Satellite Communications

Features

The kit has the following features:

- Two-way communications enabling messaging for monitoring and controlling operations
- Rugged design for use in extreme conditions NEMA 4X Fiberglass housing
- Compact form factor for easy installation

Ordering Information

Table 1 Ordering Information

Part Numbers	Description
Q-UV-ISAT2	Satellite terminal to the UltraVoice $_{\ensuremath{\$}}$ interface kit, includes cables and mounting hardware
Q-SAT-KIT	Satellite interface cables to read the signal strength for a satellite terminal

NOTE: Upgrade kits can be used on both UV and DC Cabinets.

Qualifications

Intermediate PC skills are required to install and configure this product. IT person is preferred.

NOTE: The UV+ and FC Controller must be flashed for Com 2 Function to be SkyWave IDP.

Specifications

Size	6.3 x 1.9 inches 160 mm (diameter) x 47 mm (height)		
Weight	Approx. 1.1 lb (500 grams)		
Operating Temperature	-40°F to 185°F (-40°C to 85°C)		
Humidity	95% Relative Humidity at +30°C, non-condensing		
Dust and Water Ingress	IP67/NEMA 4X		
Frequency	Rx: 1525.0 to 1559.0 Mhz; 32-FSK Tx: 1626.5 to 1660.5 Mhz; 2-FSK		
EIRP	9 dBW max		
Elevation Angle	0° to 90°		
Approvals	Inmarsat D+/IsatM2M Type, Approved, FCC, CE Mark (R&TTE), RoHS, Anate, IEC/EN 60945		
Warranty	Fifteen months from the shipment, the manufacturer's warranty		

Table 2 Specifications

Required Equipment

Required Hardware

You need the following equipment:

Computer running Windows $_{\ensuremath{\$}}$ 10 or higher with a DB9 RS-232 serial port. A typical USB to serial adapter will work.

The following equipment is provided in the Model Q-SAT-KIT by Federal Signal:

- Six-conductor non-crossover modular data cable (1751134)
- Six-conductor crossover modular data cable (1751004)
- Federal Signal three-way modular adapter (2005204)
- Standard DB9 Null modem (13902678A)

Required Software

You need the following software:

- Skywave Scope software
- Commander_® software
- USB Flasher software

Firmware for the UltraVoice® or FC Controller card

Request firmware and where to download the software from Federal Signal Technical Support at 800-524-3021 or 708-534-3400 extension 7329 or through e-mail at techsupport@fedsig.com.

Figure 2 Equipment Included in Model Q-UV-ISAT2



NOTE: Mounting hardware is not pictured.

Satellite Terminal (ST 6100) Required Information

Request the following information from Federal Signal Technical Support.

Table 3 Satellite Terminal (ST 6100) Required Information

SkyWave Terminal ID	
for each RTU	
Gateway Account Name	
Gateway Account ID	
Access ID	
Broadcast ID	
Password	
Azimuth	
Elevation	

Installing and Configuring the Satellite Terminal (ST 6100)

The following is a typical procedure for installing and configuring the Satellite Terminal (ST 6100). The programming for the Satellite Terminal requires using the USB Flasher software and Commander_® software. This procedure uses common configurations.

1. Installing the Satellite Terminal (ST 6100)

To install the Satellite Terminal (ST6100):

- Refer to the ST 6100 Terminal Installation Guide. Request the manual from Federal Signal Technical Support.
- Placement of the Satellite Terminal (ST 6100) is critical for reliable communications. Ensure that there are no trees or other obstructions.

2. Confirming the Wiring Connections

To confirm the wiring connections for the Satellite Terminal (ST 6100), satellite interface board, and UltraVoice $_{\odot}$ (UV+) Controller card:

1. Confirm the 24 Vdc power cable from the UV+ backplane motherboard at JP13 is connected to the satellite interface board at JP5.

Image: Service service

2. Confirm the modular cable from the satellite interface board at JP3 is connected to the UV+ board at RS232-2 (left port).

Figure 4 UV+ Controller RS232-2 (left port)

Figure 3 UV+ Backplane Motherboard (JP13)



3. Confirm the cable from the Satellite Terminal (ST 6100) is connected to the satellite interface board at JP4.



Figure 5 Wiring Connections from Satellite Terminal to the interface board to UV+ controller card

3. Reading the Signal Strength of the Satellite

To read the Satellite Terminal (ST 6100) using the Q-SAT-KIT:

1. Connect the modular data cable (1751134) to the satellite/cellular interface board at JP3.

Figure 6 Satellite interface board



LED illuminated

2. Verify that the power LED is illuminated on the satellite/cellular interface board.

3. Connect the modular data cable to the computer serial port using the three-way adapter and null modem. See Figure 7.

Figure 7 Modular data cable with the three-way adapter and null modem



4. On your PC, run the Scope software, scroll to ORBCOMM[®] Developer Toolkit, and select Scope from the Start button on the taskbar.



5. Set Timeout to 30 seconds.

Commands			
			1
-			~
	Timeout:	30 sec	~
2022-03-29 13:51:28 UTC			

6. Select File > Open Connection.



7. On your PC, open Device Manager and select the com port that will be used to communication with the satellite terminal. Click the Port Settings tab and ensure that it is configured for maximum bits per second.

ieneral	Port Settings	Driver	Details	Events	
		Bits pe	er second:	128000	~
			Data bits:	8	~
			Parity:	None	~
			Stop bits:	1	~
		Flo	w control:	None	~
			Adv	/anced	Restore Defaults

8. In the ORBCOMM[®] software, select the com port that will be used to communicate with the satellite terminal. Select File > Open Connection. The Open Connection dialog box appears.

Open Connection		×
Type:	Serial	~
Serial Port:	COM6	~
Baud Rate:	9600	~
	ОК	Cancel

Field	Select
Туре	Serial
Serial Port	COMnumber (Com port being used on your PC)
Baud Rate	9600

9. Click OK. The following window appears.

Commands	
OK	^
	~
Enter AT Command	Timeout: 30 sec V

If the connection fails, the following window appears.

Commands Closing connection Opening COM6 at 9600 baud

Connect failed Closing connection

Troubleshooting

Check the following:

- Sometimes the connection fails on the first try, so try again. If it still fails, check all
 connections, and ensure that the cable type is the six-conductors non-crossover
 modular data cable (1751134).
- Is the board powered?
- Is the com port set correctly in the Device Manager window on your PC?
- Is bad weather preventing the connection?
- **10.** Verify communication with the terminal by "AT" followed by "OK" when communication is established. Terminal successfully communicated with the program.
- 11. Verify that the Satellite status shows active, followed by signal strength. The signal strength should be a minimum of 42 dB for reliable operation. If the level is below 42 dB, review the ST 6100 Installation Guide and pay extra attention to the instruction for pointing the satellite, including the picture showing the 45° rotation. Also, determine if an obstacle is blocking the satellite reception path.

Status	
Drug Evens OFL	
Series Frank Version Series Series Series Accure For Congruption Maria Congruption Maria Congruption Maria Congruption Maria Congruption Maria Congruption Maria Congruption Maria Congruption Maria Congruption Maria Congruption Maria Marias (Tochang) Matter (Tochang) Matter (Tochang) Matter (Tochang) Congruption Congruption Congruption Matter (Tochang) Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption Congruption	Verses 13 million parts Marken 2000 Marken 2000 Artime 47.02 GB Artime 47.02 GB Artime 47.02 GB Artime 47.02 GB Marken 2000 Marken 2000 Ma
) + - Spice Gas 2 (Spice), Sicc	en 1 Optimi
	States Inst Sectors (PF) Sectors

- **12.** Close the ORBCOMM® Developer Toolkit application.
- **13.** Remove the modular data cable (1751134) to the satellite/cellular interface board at JP3. Reinstall the original cable between the controller card RS232 serial port and JP3 on the satellite/cellular interface board. See "Figure 5 Wiring Connections from Satellite Terminal to the interface board to UV+ controller card" on page 13.

4. Determining if using Security Code or Encryption Key

In the Commander_® software, determine if you are using Security Code or Encryption Key.

- **14.** Open the Commander $_{\ensuremath{\mathbb{R}}}$ software.
- **15.** From the Commander $_{\ensuremath{\circledast}}$ main window, click System Setup. The System Setup dialog box appears.
- **16.** Click the Security Keys button on the System Setup dialog box. The Security Keys dialog box appears.
- **17.** Document if using Security Code or Encryption Key. The below example is no Security Code (65535) and no Encryption Key (all zeros).

f Sensitivity	
Anna Sapar	
α Lensev V30e Γ αξ5 295.04	
Templerity 000-000-000-000-000-000-000-000-000-00	
Securit Code (855.35 au893)	
Pariout Faue	
6 Legany 12944 (* 485 29634	
Exception for [050-000-000-000-000-000-000-000-000-000	
Warning! The Active Encryption Key and Security Code must match R7U settings or the system will be inspenable	Gue

18. Close Commander_® software.

6. Programming the UV+ Controller card for Satellite Mode

If this firmware flash section has already been properly completed, go to "7. Configuring Commander Software for Satellite Mode" on page 25. Typically, this firmware flash section has already been completed at Federal Signal. If you are not sure this was completed, skip this section and come back later if it does not work.

IMPORTANT: Do NOT run Commander_® software and USB Flasher software simultaneously on the same PC, as they will compete for the same com port, which will cause a collision.

- **19.** On your PC, run the USB Flasher software; select from the Start button on the taskbar: Start > Federal Signal Corporation > USB Flasher.
- **20.** Select the Com that is being used by selecting Setup > Com Port.

NOTE: If you are not sure which com port is being used on your PC, open Device Manager and confirm the com port. To watch to com port appear, unplug and plug the USB cable.

P U	SB Flasher 3.1.0.19 12/	01/20_	
File	Setup		
Г	Com Port	>	Com Port 1
	a second and	•	Com Port 2
Se	lect Unit Type		Com Port 3
Co	m Port Set to USB COM	5	Com Port 4
-		- ~	Com Port 5

21. Click the Unit Type arrow and select UV+ 5698 Controller in this example.

Unit Type		Action
JV+ 5698 Controller		
Com Port Set to USB COM4	STTEDATA STEDATA	READ STEE DATA PROGRAM UPDATE SAVE STEE DATA FLASH HEX FLASH HEX
Security Code	Site Data	Com 2 Function
OFFOF		

22. Click the Com 2 Function arrow and select SkyWave IDP.

23. If the Commander_® software had a Security Code or Encryption Key, enter it here before flashing firmware into the UV+ controller card.



24. Connect the Universal Programmer to the UV+ controller card. Ensure that the cable is plugged into RS232-1 (right port) on the UV+ controller board. Ensure that the other end of the cable is plugged into the FLASH port on the Universal Programmer.

Figure 8 Connecting PC, Universal Programmer, and UV+ controller card



25. Click the UPDATE FLASH HEX button.

Unit Type	Act	ion
FCX 0200 Controller Com Port Set to USB COM5		
Security Code	Site Data	Com 2 Function SkyWave IDP
Legacy 128 Bit Encryption AES 256 Bit Encryption 000-000-000-000-000-000-000-000-000	Encryption Key	



26. Select the firmware file for the unit type, and click the Open button. The following example is from the date of writing this document. A newer version is expected.

File name:	uv+_5_2_0_13.hex				~	HEX Files (*.hex)
Network	(~	uv+_5_2_0_13.hex	10/30/2020 9:25 AM	HEX File	259 KB
Local Disk (C:)			Windows	4/15/2021 2:55 PM	File folder	

- **27.** An information dialog box appears.
- 28. Click OK.

USB Flasher	3_1_0_19	×
Wi	th the unit po	owered ON
Plug in the	FLASH Progra	amming Cable
[OK	Cancel

29. The USB Flasher Software displays the progress of the firmware being flashed. An information dialog box appears. Click OK, and close the USB Flasher Software.

	Unit Type	Action	
UV+ 5698 C4	ntrollee 🔄 🙀		
Com Port Set b	USB COM4	artificates antipations a	STRATE.
Security C	use Programmed OK	Com	2 Function ave IDP
C AES 256 8	# Enclupion		
000-000-000			44.70
	Programming FLASH 262144	Bytes Block 184	
000 000 000	Programming FLASH 262144	Bytes Block 184	
	Distance OK Programming FLASH 262144 047104 0485007584008414 C174152800508144 047104 0485007584008414 C174152800508144 C174152800508144 047104 04850075801 21548748500508144 C174152800508144	Bytes Block 184	
000-000-000	Disconsistence OK Programming FLASH 262144 041404 041404 041404 041404 041404 041404 041404 041404 041404 041404 041404 041404 041404 041404 041404 041404 041404 041404 041404 041404 041404 041404 041404 041404 041404 041404 041404 041404 041404 041404 041404 041404 041404 041404 041404 041404 041404 041404 041404 041404 041404 041404 041404 041404 041404 041404 041404 041404 041404 041404 041404 041404 041404 041404 041404 041404 041404 041404 041404 041404 041404 041404 041404 041404 041404 041404 041404 041404 041404 041404 041404 041404 041404 041404 041404 041404 041404 0414044 041404 041404	Bytes Block 184	
000-000-000-	October 2000 000 000 000 000 000 000 000 000 0	Bytes Block 184	(p)
000-000-000	Observation OK Programming FLASH 262144 047144 048900792AR06414 CLF4452050204ER 047120 048900792AR06414 CLF4452050204ER 047126 047120 018900792AR06414 CLF4452050204ER 047126 047120 018900792AR06414 CLF4452050204ER 047126 047126 A181381844ED5020 048110600254EF001 047126 047126 A181381844ED5020 048110600254EF001 047146 047126 0197A10789070574 4520508006E11080 047144 04726 024020790017754 74184441405000 047144 024000054EF001	Bytes Block 184	P
	Other Control Contecontrol Control Control Control Control Control Cont	Bytes Block 184	
	Obt 000 000 000 000 000 000 000 000 OK Programming FLASH 262144 047144 048500F58A006414 CIF4452D500004E1 047120 10200E548F079801 E76487A6006518 047120 10200E548F079801 047126 10200E548F079801 E76487A6006113 048110200E548F079801 047126 10200E548F079801 E76487A600611000 048110200E548F079801 047126 10200E548F0798012764 F74804041000 048110200E548F070 047126 10200E548F0798012764 F748040414120602 047200 04811080019984070 047220 048110800E0050 00005548F070 04012474480404 047220 048110800E0050 000000000000000000000000000000	Bytes Block 184	P
	OCCUPATION OK Programming FLASH 262144 047124 048900F2AAC06414 C1F1452000624 047124 048900F2AAC06414 C1F1452000624 C0F12000624 047120 102000F2AAC06414 C1F1452000624 C0F120002489F07 047120 102002409707801 E7547A4800061100 C0F10002489F07 047124 9107A0780070474 4C2040000241970 C0F201761744 047124 0497210739701874 4C2040000241970 C0F201761744 047225 0421102003949707 70011714747426420 047214 047225 04211020005949707 70011714747426420 047214 047225 04211020005949707 70011714747426420 047244 047248 05831268337833085 073749747147474747474 047248 3407474784703784 107014017474747474747474	Bytes Block 184	臣臣
	Observed OK Programming FLASH 2620444 G47164 U489409FRAND6414 C1F4452050000483 G47164 U489409FRAND6414 C1F445205000048 G47465 U589409FRAND6414 C1F4452050000484800 G47162 U489409FRAND6414 C1F44540000548800 G47162 U58940FRAND6414 C1F44540000548800 G47162 U58050FF691XF54 FAXE6461 L181220139818001 G47164 U549507F01XF54 FAXE6461 L18122013981801 G47164 U549507F01XF54 FAXE6484 L4820600 G47164 U549507F01XF54 FAXE6484 U5958800 G47262 G42110000548807 G0025359840F45417 G47262 G422100005588107 G0025359840F45417 G47262 U500005481000 G7164747F460745780 G47269 0000120807593388 G7164747F74774774774774774774774774774774774	Bytes Block 184	百万
	Obt 000 000 000 000 000 000 000 000 000 0	Bytes Block 184	東東
	Observed OK Oppose	Bytes Block 184	東京

6. Programming the FC Controller card for Satellite Mode

If this firmware flash section has already been properly completed, go to "7. Configuring Commander Software for Satellite Mode" on page 25. Typically, this firmware flash section has already been completed at Federal Signal. If you are not sure this was completed, skip this section and come back later if it does not work.

IMPORTANT: Do NOT run Commander_® software and USB Flasher software simultaneously on the same PC, as they will compete for the same com port, which will cause a collision.

- **30.** On your PC, run the USB Flasher software; select from the Start button on the taskbar: Start > Federal Signal Corporation > USB Flasher.
- **31.** Select the Com that is being used by selecting Setup > Com Port.

NOTE: If you are not sure which com port is being used on your PC, open Device Manager and confirm the com port. To watch to com port appear, unplug and plug the USB cable.

e US	B Flasher 3.1.0.19	2/01/20_	
File	Setup		
Г	Com Port	>	Com Port 1
			Com Port 2
Se	lect Unit Type		Com Port 3
Co	m Port Set to USB CO	M5	Com Port 4
-			Com Port 5

32. Click the Unit Type arrow and select FCX 0200 Controller in this example.

ormitype		Action
FCX 0200 Controller 🗸 🚽		
Com Port Set to USB COM5	SITEBATA SITEBATA SITEBA	ATA STTE DATA FLASH HEX FLASH HEX
Security Code	Site Data	Com 2 Function
65535		SkyWave IDP 👻

33. Click the Com 2 Function arrow and select SkyWave IDP.

34. If the Commander_® software had a Security Code or Encryption Key, enter it here before flashing firmware into the FC controller card.



35. Connect the Universal Programmer to the FC controller card. Ensure that the cable is plugged into RS232-1 (right port) on the FC controller board. Ensure that the other end of the cable is plugged into the FLASH port on the Universal Programmer.

Figure 9 Connecting PC, Universal Programmer, and FC controller card



36. Click the UPDATE FLASH HEX button.

USB Flasher 3.1.0.19 12/01/20 _ ile Setup		×
Unit Type	Acti	ion
FCX 0200 Controller		
Com Port Set to USB CDM5	STEEDATA STEEDATA STEEDATA	PROGRAM STTE DATA FLASH HEX FLASH HEX
Security Code 65535	Site Data	Com 2 Function SkyWave IDP
Legacy 128 Bit Encryption AES 256 Bit Encryption	Encryption Key	
000-000-000-000-000-000-000-000-000-000-	000-000-000-000-000	



37. Select the firmware file for the unit type, and click the Open button. The following example is from the date of writing this document. A newer version is expected.

Local Disk (C:)	fcx_5_1_0_10.hex	6/21/2021 9:30 AM HEX File
etwork	~ <	
File name: fcx_5_1_0_10.h	lex	→ HEX Files (*.hex)
		Open 🗸

- **38.** An information dialog box appears.
- 39. Click OK.

USB Flashe	r3_1_0_19	>
W	/ith the unit po	wered ON
Plug in th	e FLASH Progra	mming Cable

40. The USB Flasher Software displays the progress of the firmware being flashed. An information dialog box appears. Click OK, and close the USB Flasher Software.

Unit Ty	e)		Actio	n		
FCX 0200 Controller Com Part Set to USB COM4	•					
Security Code 65535 C Legacy 128 Bit Enception C AES 256 Bit Enception		US8 Thaiher3_1_0_39 X	ET.	Com Sky	2 Function Wave DP 🔹	1000
2000,000,000,000,000,000,000	00.000.000.000.000.000	OK I				
		ELASH 50432 E	avtes	Black 95	E	_
	0 000 000 000 000 000 000 rogramming 576 053333350367 900 0000000000000000000000000000000000	OX FLASH 50432 E BBF0 BEEF0E100A50160 COARD COMBACTERESE OLAD BEEF0E100A50260 OOSD 007D1C00EEEE70E1 FEF1 FIEL001301100051 OCSD 10000012717000051 OCSD 100000107000051	Bytes 33X.	Block 96		
	0 000 000 000 000 000 cogramming 574 (833380137 000 000 000 000 100 000 100 000 000 100 0000 100 000 100 000 100 0000	OX FLASH 50432 E BFY BREFORIONADIC COM CONTACTORES OND INCOMMENTAL EBEPORIONADACENERS COM CONTACTORES OND INCOMPACT CONTOCOMPACTORES OND INCOMPACT DOTOLICOMMENTOLI EFERI FELODIOLICOMPACTORES OSSI DEDBOCCT/TOCODOLICO DICO SECONT/TOCODOLICO DICO SECONT/TOCODOLO DICO SILONET/TOCODOLO DICOLONET/TOCODOLO DICOLONE	33 X	Block 96	「「「「「「」」」	

7. Configuring Commander Software for Satellite Mode

To configure Commander_ ${\scriptscriptstyle \circledcirc}$ software for satellite mode:

- **41.** Open the Commander_® software.
- **42.** From the Commander $_{\ensuremath{\circledast}}$ main window, click System Setup. The System Setup dialog box appears.
- 43. In the Mode list, select SkyWave IDP.

NOTE: SkyWave IDP can be configured for any of the four communications channels if using multiple channels for communications.

Communication	
Channel	1 🕂
Mode	SkyWave IDP 🔹
Front Porch	1000 ms
# Tries	3 🔹
Retry Delay	60
CCU Addr	900
E Beneat Al	Call 3 times
DTMF 2-W	√ay System
🔽 Sequentia	I Transmission
	ecurity Keys

44. From the System Setup main window, click SkyWave Setup.

Communication	AUEO FOR LEDES	Northeast Inco.	Duration Basethuston John	of La
Dramet 1 -	Continuous	01 P 02 Water 03 Tornado Steady 04 Ait Wat 05 Weekly Teat 06 Modifie Teat	0.12 300 300 300 0.27 300	
Front Pouch 1000 mt	6TU Poli Interval Esco/Repeater Poli Interval	07 Chine (Aut) 00 Master Reset 09 Relay Test 1	0.32 0.67	

45. The SkyWave Setup dialog box appears.

IDP -			Save
Access ID	Broadcast ID	Loopies Mode 00	Quit
Password	Receive Interval [1 - 255 teconds]	collection for	

46. In the SkyWave Setup dialog box, enter the satellite information.

Fields	Enter information into the fields
Access ID	Provided by Federal Signal (for example, 00001234)
Password	Provided by Federal Signal (for example, ABCDEFGH)
Broadcast ID	Provided by Federal Signal (for example, 0123456SKYB12F)
Receive Interval	5
Logging Mode	Full

- 47. Click Save.
- 48. Click Save again to get back to the Commander® main window.
- **49.** From the Commander $_{\ensuremath{\scriptscriptstyle \mathbb{R}}}$ main window, click RTU. The RTU dialog box appears.
- **50.** Select the RTU to configure.

Federal Spirel * Commercier, 123254311 Tasis Log Reports May Actuate System Setur	RTU Infor Emg Configure Sevents Name	man – Nata Pa Datus Dataib	nt Logoot/Login System Alarm Help Pull Selected Pall All Cancel Pall Master React All Address	Quiet Test All Prening Front Result Statue	Communication Times Que	
and the second se	[BTat]	Status	Nate	Addect	R1U Version	
and the second se	007	Standty	DCFCTR0H	2645 Federal Signal Drive 1234 Discondure	410.9	
the second se	001	Durch	17/11 1 10/00	16-10 Linearchy Rink	52011	

51. Click Configure. The Configure RTU General Parameters dialog box appears.

Station Name UM1 Station Address	Station Number 011 4	▶]	- Channel Selection				
Station Address Larghude Longhude Foort Poorth Foort Poorth OOD Pail OOD OOD Poort OOD Poort OOD Poort OOD Poort Poort Poort Poort Poort Poort Poort Poort Poort Poort Poort Poort Poort Poort Poort Poort Poort Poort Poort Poort	Station Name UV-1		Channel	1	2	2	4
Longitude T Autor Lipdenie Longitude T Autor Lipdenie Al Call Reporter # 000 gwiewer Terminal ID On IP Port On IP Port Direct Activation on Ductone and DTMF T Hotor Finan Proceeding T Space1 Normally Doord Prove Reporting T Line Final Prove Reporting D Line Final Prove Reporting D Line Final	Station Address		13	ntv/ave IDP	Smathing		
Food Pach 1000 ms All Call Reporter # 000 Wave Teminal ID Ori IP Part Decold Activation on Duotone and DTMF Inter Encryption Dut of Service	Longitude	广 Auto Updala	Enabled	F	V	1	1
All Call Repeaters # 000 Weren Terminal ID Chill IP Port Did IP Port Chill P Port Paulo Repeater Set 2 Repeater Set	Front Porch 1000 ms		Fast Recotor		(H)	F	E.
Wiver Terminal ID Chill IP Put Put Dependenting Power Reporting Put of Service	All Call Repeater # 000			2010	1	0	50
Chill IP Puri F Local Activation on Duotone and DTMF IF Local Activation on Duotone and DTMF IF Local Activation on Duotone and DTMF IF Space I Normally Closed IP Power Reporting IF Time Encopption IF Dut of Service	/w/ave Terminal ID						
Ot2 IP Pot Ot3 IP Pot Ot4 IP Pot Ot4 IP Pot Ot4 IP Pot Ot4 IP Pot Pote Activation on Duotone and DTMF Hobostaria Pote Reporting Dut of Service	Citil IP.Put		Benester				
Ord IP Port Repeater Set 1 Repeater Set 1 Chill P Port Repeater Set 2 Repeater Set 2 Z Auto Reporting Spare1 Nomally Closed Prover Reporting Line Fault Time Encryption Dut of Service	DI2IP Pol		riegesters				
Chill P Put Repeater Set 1	CH01P.Port						_
Local Activation on Duotone and DTMF Hotor Fruit Auto Reporting Forer Reporting Fune Fault Time Encryption Four of Service	CF41P.Pot.		Re	peater Set 1	1	3 - F	
IP Auto Reporting IP Specif Normally Closed IP Power Reporting IF Line Fault IP Time Encryption IP Dut of Service	Local Activation on Duotone and	THE TO Motor Friday		آ د به سنیہ			
IP Power Reporting □ Line Fault IP Time Encryption □ Dut of Service	Auto Reporting	F Spare1 Normally Closed	100	hone serv 1		3 - Q3	
Time Encryption Dut of Service	Power Reporting	🗂 Line Fault					
	Time Encryption	T Dut of Service					
T Trusking Mode T Drei Way	Trunking Mode	☐ One Way					

In the Configure RTU General Parameters dialog box, enter the SkyWave Terminal ID provided by Federal Signal.

NOTE: The SkyWave Terminal ID has to be unique for each RTU.

Fields	Description
SkyWave Terminal ID	For systems using SkyWave IDP communication mode, specify the Terminal ID of the SkyWave terminal (for example: 01234567ABCDEF).

52. Click Quit.

53. Select the RTU, and click Poll Selected.

RTU									
nfigure	Status Details	Poll Selected	Poll All	Cancel Poll	Master Reset All	Quiet Test All	Pocsag Reset	Reset Status	Communication Time
- Search Name			Address	:]			
RTU#	Status	Name				Address			RTU Ve
001	😑 Standby	DCFCTBH				2645 Federa	al Signal Drive		4.1.0.9
002	😑 Standby	DCFCTBDH				1234 Chicag	jo Ave		5.1.0.10
003	Standby	LIVTD Satelli	ite			5678 Univer	situ Park		52013

A red or green dot indicates good communication. A violet or purple dot indicates the failure of communications.

The UV+ and Commander_® setup is complete.

Getting Service

If you are experiencing any difficulties, contact Federal Signal Customer Support at 800-548-7229 or 708-534-3400 extension 7511 or Technical Support at 800-524-3021 or 708-534-3400 extension 7329 or through e-mail at techsupport@fedsig.com. For instruction manuals and information on related products, visit http://www.fedsig.com.



2645 Federal Signal Drive University Park, Illinois 60484

www.fedsig.com

Customer Support800-548-7229Technical Support800-524-3021

800-548-7229 • +1 708 534-3400 800-524-3021 • +1 708 534-3400