

FieldServer Toolbox and Graphic User Interface (FS-GUI) Manual

This manual provides instructions for the following FieldServer products:

ProtoAir FS-B35 Series SlotServer QuickServer Description FieldServer FieldServer FieldServer FieldServer

APPLICABILITY & EFFECTIVITY

Effective for all systems manufactured after May 2018.

Technical Support

Please call us for any technical support needs related to the FieldServer product.

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1 OVERVIEW

The FS-GUI is a web-browser based User Interface, and uses a combination of technologies and devices to provide a platform that the user can interact with for the tasks of easily gathering and producing information. FS-GUI allows the user to:

- 1. Check the status and diagnostics of a FieldServer including such information as network settings, connection info, node information, map descriptors, and error messages.
- 2. Monitor a working FieldServer's internal data and parameters.
- 3. Change or update a FieldServer's internal data and parameters.
- 4. Transfer files to and from a FieldServer.
- 5. Delete files on a FieldServer.
- 6. Change the FieldServer's IP Address.
- 7. Set Admin and User Passwords for security.
- 8. Restart a FieldServer.

The FS-GUI is shipped with every ProtoAir, QuickServer, FS-B35XX Series and SlotServer FieldServer Gateway.



2 GETTING STARTED

2.1 PC Requirements

2.1.1 Hardware

A Computer with web browser that connects over Ethernet on port 80.

2.1.2 Software

The Utilities run under the following web browsers:

- Chrome 19.0 and higher
- Firefox 13.0 and higher
- Opera 11.0 and higher
- Internet Explorer 8¹ and higher
- Safari 4.1 and higher

NOTE: Computer and network firewalls must be opened for Port 80 to allow FS-GUI to function.

2.1.3 Utility – FieldServer Toolbox

- The FieldServer Toolbox is used to find FieldServers on the network. The Toolbox can be found on the flash drive shipped with the FieldServer, or it can be downloaded from the <u>Sierra Monitor</u> <u>website</u>.
- After downloading, it will be available as an icon on the desktop.
- The Toolbox will only find FieldServers existing on the same subnet as the computer.

2.2 Installation and Setup

- The utilities are loaded on the flash drive shipped with the FieldServer, and can be accessed from the desktop as an icon after they have been installed. The utilities are also available from the Sierra Monitor website in the Customer Support page → Software Downloads section.
- The FS-GUI PC and the FieldServer have to be setup with an IP Address on the same subnet.

¹ Internet Explorer 8 does have some limitations in terms of graphical features. Some effects such as rounded corners and semiopaque backgrounds are not supported. The technical functionality is there but pages might be slightly degraded on IE8.

3 CONNECTING TO A FIELDSERVER

3.1 Power Up the Device

Apply power to the device. Ensure that the power supply used complies with the specifications provided in. Ensure that the cable is grounded using the "Frame GND" terminal. The FieldServer is factory set for 9-30VDC or 12-24VAC.



3.2 Connect the PC to the FieldServer Over the Ethernet Port



- Connect an Ethernet cable between the PC and FieldServer or connect the FieldServer and the PC to the Hub/switch using a straight CAT5 cable.
- The Default IP Address of the FieldServer is **192.168.2.101**, Subnet Mask is **255.255.255.0.** If the PC and the FieldServer are on different IP Networks, assign a Static IP Address to the PC on the 192.168.2.101 network.



3.3 Connecting to the FieldServer

- 3.3.1 Using the FieldServer Toolbox to Launch FS-GUI
 - Install the FS Toolbox application from the USB drive or download it from the <u>Sierra Monitor</u> website.
 - Use the FS Toolbox to find the FieldServer, and launch the FS-GUI.
- NOTE: If the connect button is greyed out, the FieldServer's IP Address must be set to be on the same network as the PC.

FieldServer Tool	box			CO	sierra
Setup Help					monitor
DEVICES 🕀	IP ADDRESS	MAC ADDR	ESS FAVORITE	CONNECTIVITY	
DCC285 QS.CSV v4.10b	192.168.2.135	00:50:4E:01:02	2:03 🚖	•	Connect
					10-194
M Gierra Monitor					FieldPoP [™]
Navigation	Demo				
Domo		Cottio	1-5- 5		
• About	Status	Settings	into Stats		
> Setup	Status				٥
View	Na	ame		Value	
User Messages	Driver_Configuration		PCC1043		
-	DCC_Version		V1.00b (C)		
	Kernel_Version		V6.32a (A)		
	Release_Status		Normal		
	Build_Revision		3.14.0		
	Build_Date		Wed Apr 19 18:00:59 2017 +020	0	
	BIOS_Version		3.0.11		
	FieldServer_Model		ProtoCessor FFP LON		
	Carrier Type		485 Carrier		
	Data_Points_Used		0		
	Data_Points_Max		1500		
	Application Memory:				
	Memory_Percent_U	sed	2.32%		
	Memory_Used		401 kB		
	Us System Restart	System Time Synch	Reset Cycle Times		
Home HELP (F1) Contact					

3.3.2 Connecting FieldServer to the SMC Cloud

The FieldPoP button **FieldPoP** (see Figure 3) allows users to connect to the SMC Cloud, Sierra Monitor's device cloud solution for IIoT. The SMC Cloud creates a secure remote connection to field devices through a FieldServer and its local applications for configuration, management, maintenance. For more information about the SMC Cloud, refer to the <u>SMC Cloud Start-up Guide</u>.

3.3.3 Using the Web Browser to Launch FS-GUI

If the IP Address is known, it can be typed directly into the web browser, and the FS-GUI will launch.



4 THE NAVIGATION TREE

4.1 Root

The root of the navigation tree allows the user to check the status of the FieldServer gateway, including the configuration code, version, memory, gateway type and more. Under "Settings" the user has access to important network information. The name of the root is specified in the FieldServer Configuration file under the Title Keyword and is therefore completely user definable.

4.2 About

Allows the user to check current firmware of the FieldServer gateway plus version identification of the interface and skin, plus contact information. Skin is either the default FieldServer template or it can be a specific template specified by the owner.

4.3 Setup

4.3.1 File Transfer

There are 3 types of files that can be transferred, namely Configuration Files, Firmware and miscellaneous (general) files.

SMC	(FieldPoP [*])
Navigation	File Transfer
 Demo About Setup File Transfer Network Settings Passwords Time Settings View User Messages 	Configuration Firmware General Update Configuration Update the configuration file on the device. Choose Files No file chosen Submit Submit Retrieve Retrieve the configuration file from the device. config.csv Delete Delete the device configuration. Warning: Make sure you have saved a copy of your config.csv file. Delete Configuration Variance saved a copy of your config.csv file.
Home HELP (F1) Contact Us	System Restart
	Figure 4: File Transfer



4.3.1.1 Configuration Files

Configuration files have a .csv extension, and are used to configure the FieldServer for its specific application. See the FieldServer Configuration Manual for details, found on the <u>Sierra Monitor website</u>.

Update the configuration file:

To update the FieldServer's configuration file, click the browse button and select the configuration file (.csv). Click open, and submit. Wait until the message "Configuration update complete" appears, and click the System Restart button to activate the new configuration file.

Retrieve the configuration file:

For making changes to the configuration file – Retrieve the file, edit it, save the updated file and update the file (as described in the section above).

Delete the configuration file:

To temporarily disable the FieldServer's protocol communications, the configuration can be deleted. The FieldServer needs to be restarted to activate the changes. This action cannot be undone - make sure to create a backup copy of the configuration file before taking this action.

4.3.1.2 Firmware Files

The FieldServer Firmware contains the application program commonly referred to as the DCC or the PCC. This program contains the protocol drivers applicable to the application and the FieldServer Operating System Kernel.

A Firmware update is only required when updated files are received from FieldServer support. Firmware files have a .bin extension

4.3.1.3 General (Other) Files

Other files that can be updated include the FS-GUI image, and other files described in driver manuals. The procedure for updating these is the same as for configuration files, but the update needs to be made in the "General" update section.



4.3.2 Network Settings

On the Network Settings Page, the Ethernet adaptor settings of the FieldServer can be changed. The N1 and N2 (if supported) adaptor IP Address, Netmask, two Domain Name Servers and default Gateway can be changed by entering values in the applicable fields and clicking on the Update IP settings Button.

NOTE: The FieldServer has to be restarted for any changed settings to take effect. Also note that enabling the DHCP client on any adaptor will cause the static IP Address settings to be overruled by a DHCP server on the network.

The FieldServer's built-in DHCP server can be enabled to establish easy connection for Support purposes. Set the laptop or computer to automatically obtain an IP Address to use this feature. The FieldServer DHCP server periodically checks for other DHCP servers on the network and will disable itself should any other DHCP servers exist on the network. This method of operation is because the FieldServer DHCP server is strictly for support purposes and does not have all the features of a commercial DHCP server. Setting the default gateway IP Address to the network gateway ensures the FieldServer is reachable on the internet.

SMC				FieldPoP ^{**}		
Navigation	Network Settings					
 Demo About 	IP Settings					
 Setup File Transfer Network Settings Passwords Time Settings 	Note Updated settings only take effect after a System Restart. If the IP Address is changed you will need to direct your browser to the new IP Address after the System Restart.					
User Messages		N1 IP Address 192.168.3.11				
		N1 Netmask	255.255.255.0			
		N1 DHCP Client State	DISABLED V			
		Default Gateway	192.168.3.1			
		Domain Name Server1	8.8.8.8			
		Domain Name Server2	8.8.4.4			
		Cancel	Update IP Settings			
	MAC Address					
	N1 MAC Address: 00:50	0:4E:90:0D:FF				
Home HELP (F1) Contact Us	System Restart					
	Fig	ure 5: Network Settings	\$			



4.3.3 Passwords

Access to the FieldServer can be restricted by enabling a password on the FS-GUI Passwords page – click Setup and then Passwords in the navigation panel. There are 2 access levels defined by 2 account names: Admin and User.

- The Admin account has unrestricted access to the FieldServer.
- The User account can view any FieldServer information, but cannot make any changes or restart the FieldServer.

The password needs to be a minimum of eight characters and is case sensitive.

If the password has been lost, click cancel on the password authentication popup window, and e-mail the Password recovery token to <u>support@sierramonitor.com</u> to receive a temporary password from the Sierra Monitor support team. Access to the FieldServer is now available to set a new password.

Navigation Demo • About	Passwords Overview	
 Setup File Transfer Network Settings Passwords Time Settings View 	Note The current Admin password (if set) is required to password. IMPORTANT: You may be required to lo	change all passwords. To disable password protection, set an empty Admin g in again after changing a password.
User Messages	Account Name	Admin 💌
	Current Admin Pas	sword
	New Password	
	Confirm New Pass	vord
	Cancel	Update Password
Home HELP (F1) Contact U	s	
	Figure 6: FS-GUI Pass	words Page

SMC ^{sierra}
Unauthorized
If you are the authorized administrator of this device and need to recover password access, you may contact support@sierramonitor.com and send them the Password Recovery Token shown below.
You will be given a recovery password to enable you to log in as Admin and create a new password.
Password Recovery Token: zMtvwSDf4A==
LOGIN
www.sierramonitor.com
Figure 7: Password Recovery Page



4.3.4 Setting Time Zone

The time zone of the FieldServer should be set to generate accurate data.

- Navigate to the FS-GUI page using one of the following methods:
 - From Web Configurator click the "Diagnostics and Debugging" button on the bottom right corner of the page

NOTE: The Web Configurator page shows the FieldServer parameters to configure. See gateway start-up guide for additional information.

- If there is no "Diagnostics and Debugging" button in the bottom right corner of the page, check for a "Diagnostics" tab along the top of the page or a "Diagnostics" link next to the Sierra Monitor Copyright statement at the bottom center of the page
- Click Setup on the navigation tree.
- Click "Time Settings".
- Select the appropriate time zone then click Submit.

SMC	FieldPoP)"
Navigation	Time Settings	
 Demo About Setup File Transfer Network Settings Passwords Time Settings View User Messages 	Time Zone Set Timezone Set the timezone of the device (GMT-08:00) Pacific/Pitcaim Submit	
Home HELP (F1) Contact Us		
	Figure 8: Time Settings Page	



4.4 View

4.4.1 Connections

The Connections screen supplies information on communication between the FieldServer and remote devices. A number of aspect screens are available, including settings, info stats and error stats. The information on these screens cannot be changed, and is for viewing only.

4.4.2 Data Arrays

The Data Arrays screens can be used to view the values in Data Arrays. The values can be changed by clicking on the "Enabled Grid"- button, and changing the value in the data array grid.

NOTE: If values are being written into the Array by a driver, then any modifications made by grid editing will be overridden.

	_01										
Data A	Array										
•											
Data Array	Attrib										•
			Name					Value			
Data Array	Name					DA_AI_01					
Data Form	at					Float					
Length in I	tems					200					
Bytes per 1	tem					4					
Data Age						6:40.130s					
		Display	Format Float	:							
Data Array											
Offerst	0		2	2						0	-
onset	0 000000	0.000000	2 0.000000	0.000000	0.000000	0.000000	0 000000	0.000000	0.000000	0.000000	
10	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	-
20	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	_
20	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	_
30	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	-1
40	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	_
50	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	
70	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	
70	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	
80	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	
90	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	
100	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	
110	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.00000	0.000000	0.000000	0.000000	v
		Figur	e 9: D	ata Arı	rays						
	Data A Data Array Data Array Data Array Data Array Data Array Offset 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Data Array Data Array Name Data Array Name Data Pray Name Data Serrat Length in Remis Bytes per Rem Data Array Offset 0 0.000000 10 0.000000 20 0 0.000000 10 0.000000 0 0.000000	Data Array Data Array Data Array Hane Data Array Hane Data Array Hane Data Array Using In Array Data Array	Data Array Data Array Attib Rame Data Array Attib Rame Data Array Name Data Array User Array Data Array Otta Array Data Array Offset 0.00000 0.00000 0 0.00000 0.00000 0.00000 0 0.00000 0.00000 0.00000 0 0.00000 0.00000 0.00000 0 0.00000 0.00000 0.00000 0 0.00000 0.00000 0.00000 0 0.00000 0.00000 0.00000 0 0.00000 0.00000 0.00000 0 0.00000 0.00000 0.00000 0 0.00000 0.00000 0.00000 0 0.00000 0.00000 0.00000 0 0.00000 0.00000 0.00000 0 0.00000 0.00000 0.00000 0 0.00000 0.00000 0.00000 0 0.00000	Data Array Data Array taria Bane Data Array Name Bane Option State Bane Data Array Bane Observed Daconool Daconool Data Array Conool Daconool Daconool Data Acray Conool Daconool Daconool Daconool Daconool Data Acray Conool Daconool Daconool <th>Cata Array Data Array tabia Rate Data Array tabia Rate Data Array tabia Rate Data Array tabia Rate Data Array Rate Data Array tabia Rate Data Array Rate Cata Array<th>Data Array bar Array taking Barne BALA, 51 State Array taking Bala Bala State Array Bala Bala Stat</th><th>Data Array </th><th>Data Array Figure 9: Data Array taking Name Od. J.L. 0.1 Data Array taking Dd. J.L. 0.1 Plant Data Dromot 1 Dd. J.L. 0.1 Data Dromot 1 Dd. J.L. 0.1 Data Dromot Data Dromot Dd. J.L. 0.1 Data Dromot Data Dromot Dd. J.L. 0.1 Data Dromot Data Dromot Data Dromot Data Dromot Data Dromot Data Dromot Data Dromot Data Dromot Data Dromot Data Dromoto Data Dromoto Data Dromoto Data Dromoto Data Dromoto Data Dromoto Data Dromoto Data Dromoto Data Dromoto Data Dromoto Data Dromoto Data Dromoto Data Dromoto Data Dromoto Data Dromoto Data Dromoto Data Dromoto DataDromoto Data Dromoto</th><th>Data Array Data Array</th><th>Data Array Data Array Data Array Data Array Data Data Data Array Itania Data Data Data Data Array Data Data Data Data Data Array Data Data</th></th>	Cata Array Data Array tabia Rate Data Array tabia Rate Data Array tabia Rate Data Array tabia Rate Data Array Rate Data Array tabia Rate Data Array Rate Cata Array <th>Data Array bar Array taking Barne BALA, 51 State Array taking Bala Bala State Array Bala Bala Stat</th> <th>Data Array </th> <th>Data Array Figure 9: Data Array taking Name Od. J.L. 0.1 Data Array taking Dd. J.L. 0.1 Plant Data Dromot 1 Dd. J.L. 0.1 Data Dromot 1 Dd. J.L. 0.1 Data Dromot Data Dromot Dd. J.L. 0.1 Data Dromot Data Dromot Dd. J.L. 0.1 Data Dromot Data Dromot Data Dromot Data Dromot Data Dromot Data Dromot Data Dromot Data Dromot Data Dromot Data Dromoto Data Dromoto Data Dromoto Data Dromoto Data Dromoto Data Dromoto Data Dromoto Data Dromoto Data Dromoto Data Dromoto Data Dromoto Data Dromoto Data Dromoto Data Dromoto Data Dromoto Data Dromoto Data Dromoto DataDromoto Data Dromoto</th> <th>Data Array Data Array</th> <th>Data Array Data Array Data Array Data Array Data Data Data Array Itania Data Data Data Data Array Data Data Data Data Data Array Data Data</th>	Data Array bar Array taking Barne BALA, 51 State Array taking Bala Bala State Array Bala Bala Stat	Data Array 	Data Array Figure 9: Data Array taking Name Od. J.L. 0.1 Data Array taking Dd. J.L. 0.1 Plant Data Dromot 1 Dd. J.L. 0.1 Data Dromot 1 Dd. J.L. 0.1 Data Dromot Data Dromot Dd. J.L. 0.1 Data Dromot Data Dromot Dd. J.L. 0.1 Data Dromot Data Dromot Data Dromot Data Dromot Data Dromot Data Dromot Data Dromot Data Dromot Data Dromot Data Dromoto Data Dromoto Data Dromoto Data Dromoto Data Dromoto Data Dromoto Data Dromoto Data Dromoto Data Dromoto Data Dromoto Data Dromoto Data Dromoto Data Dromoto Data Dromoto Data Dromoto Data Dromoto Data Dromoto DataDromoto Data Dromoto	Data Array Data Array	Data Array Data Array Data Array Data Array Data Data Data Array Itania Data Data Data Data Array Data Data Data Data Data Array Data Data

4.4.3 Nodes

On the Nodes screens information about the remote devices on each connection can be viewed. A number of aspect screens are available, including settings, status, info stats and error stats. The information on these screens cannot be changed, and is for viewing only.

4.4.4 Map Descriptors

On the Map Descriptors screens information on each individual Map Descriptor can be viewed. A number of aspect screens are available, including settings, status, info stats and error stats. The information on these screens cannot be changed, and is for viewing only.



4.5 User Messages

The user message screens display FieldServer messages generated by drivers and the operating system.

User messages on the "Error"- screen usually indicate some problem with the configuration or communication and should be attended to.

User messages of an informational type will be displayed on the "Info"- screen, and no user action is usually required.

Messages generated by protocol drivers will be displayed on the "Driver"- screen. These messages convey protocol specific information that can be useful for field integration purposes.

Finally, the "Combined"- screen contains all messages chronologically from all the above message screens.



4.6 Diagnostics

Diagnostic Capture via FS-GUI is only available on FieldServers with a bios updated/released on November 2017 or later. Completing a Diagnostic Capture through the FieldServer allows network connections (such as Ethernet and Wi-Fi) to be captured.

Once the Diagnostic Capture is complete, email it to technical support. The Diagnostic Capture will accelerate diagnosis of the problem.

- Open the FieldServer FS-GUI page.
- Click on Diagnostics in the Navigation panel.

Navigation	Diagnostics
 FieldServer Demo About 	Captures
Setup View User Messages Diagnostics	Full Diagnostic
Didgiosits	Set capture period (max 1200 secs):
	Start
	Serial Capture
	Set capture period (max 1200 secs):
	300 Start
Home HELP (F1) Contact	

- Go to Full Diagnostic and select the capture period.
- Click the Start button under the Full Diagnostic heading to start the capture.
 - o When the capture period is finished, a Download button will appear next to the Start button

Full Diagnostic	
Set capture period (max 1200 secs):	
300	
100% Complete	
Start Download	

- Click Download for the caputure to be downloaded to the local PC.
- Send the diagnostic zip file to technical support.



APPENDIX A. TROUBLESHOOTING

Appendix A.1. FieldServer Toolbox Display Issues

If the FieldServer Toolbox appears to be stretched out or not displaying correctly, see the image below for the correct display (normal window boarders have been removed). If the FieldServer Toolbox does not have a similar appearance there may be an issue with the DPI scaling.

FieldServer To	oolbo	x			C	M sierra
Setup Help					2	monitor
DEVICES	Ð	IP ADDRESS	MAC ADDRESS	FAVORITE	CONNECTIVITY	
DCC285 QS.CSV v4.10b		192.168.2.135	00:50:4E:01:02:03	*	•	Connect
						45

To fix a DPI scaling problem try the following:

- 1. Right click on the FieldServer Toolbox icon and then click on Properties.
- 2. Click the Compatibility tab.
- 3. Enable the "Override high DPI scaling" option.
- 4. Change the drop down menu that appears to "System-Enhanced".
- 5. Click OK to save the new settings.