Emerson[™] Smart Wireless Gateway User Interface Terminology Guide for Firmware Revision 4.5

EMERSON. Smart Wirel	ess Gateway				admir	About Help Logout
wgdemo Hon	ne Devices Syste	m Settings				+ Network Information
All Devices	Notifications					
	Tasks					
	No Pending Tasks					
	Unreachable					
- 13	No results found.					
	New			_		
Unreachable	Recently Added(last 5 de	vices)	Date Added		Current PV	
	248 (3B-2E-A1-EB)		04/07/15 11:45:25		27.703	
Power Module Low	3051S (71-20-1E-78)		04/07/15 11:45:25		-0.029	
s 0	708 (63-3D-09-D1)		04/07/15 11:41:50		0	
Gateway Load	3051S (71-10-DA-F7)		04/07/15 11:39:06		0.018	
13%	2051 (64-1E-88-C9)		04/07/15 11:38:45		-0.189	
Network Best Practices	Changes					
5 devices within range of	Description	From	То	Reques	ted	Status
gateway 100%	Performing a system			04/07/1	5 12:07:32	
25% devices within the single	backup.					
hop of gateway 100%						
Go to Devices						
EMERSON. HOME DEVICES S	SYSTEM SETTINGS ABOUT 1	HELP			Feedback Terms	Of Line (PW Rev 4.5.32
- Terrer Rengeron					© 2015 Emerson 8 Consider it Solved	Sectric Co. All Rights Reserved



Introduction Home page About Network Information Devices System Settings System Settings > Gateway pages System Settings > Network pages System Settings > Protocols pages System Settings > Users pages	page 2 page 2 page 4 page 5 page 6 page 13 page 17 page 25 page 30 page 41
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1.1 Introduction

The Gateway 4.5 Firmware is intuitive and easy to use. The updated design and layout provides actionable information at your fingertips with the ability to view high level network overview summaries on the home page and make real-time decisions for fast predictive maintenance.

This document describes the terms, user fields, and parameters used in the Smart Wireless Gateway Web Based User Interface.

To download a version of the new firmware, follow this link:

http://www2.emersonprocess.com/en-US/plantweb/wireless/Smart-Wireless-Downloads/ Pages/Smart-Wireless-Downloads.aspx

Note

Bold items listed within the tables below indicate clickable links in the software.

1.2 Home page

Figure 1-1. Home

EMERSON.	Smart	Wireless (Gateway						adm	in About	Help Logout
wgdemo wgdemo.emron	org	Home	Devices	System Se	ttings					+	Network Information
All Devi	ces	Not	tificatio	ns							
9 13		Task	s								
Liva		- No P	ending Tasks	_	_	-	_		_	_	_
₹ 13		No re	sults found.								
		New									
Unreact	hable	Rece	ntly Added(la	st 5 devices)	Date Add	ied		Current PV		
<i>≪7</i> ⊂ U		2	48 (38-2E-A1-6	EB)		04/07/15	11:45:25		27.703		
Power	Module Low	Z 3	051S (71-20-18	E-78)		04/07/15	11:45:25		-0.029		
1		7	08 (63-3D-09-0	01)		04/07/15	11:41:50		0		
Gateway Load		и з	051S (71-10-D	A-F7)		04/07/15	11:39:06		0.018		
13%		2	051 (64-1E-88-	-C9)		04/07/15	11:38:45		-0.189		
Network Best Pro	actices	Char	nges								
5 devices within ra	nge of	Desc	ription	Fr	om		то	Reques	sted	Status	
gateway Go to Devices		DON Perfo	rming a system	1				04/07/1	5 12:07:32	\checkmark	
25% devices within	the single		- F -								
hop of gateway		00%									
Go to Devices											
EMERSON. H											(4.5.32
											ghts Meserved

Table 1-1. Home

ltem	Description
Devices	Click to view a list of all devices participating in the network.
System Settings	Click to view and edit all the accessible settings in the gateway.
Network Information	Click to view network information and when adding a new device to the network.
About	Click to find detailed gateway information such as serial numbers, version number, system up time, etc.
Help	Click to find additional help documentation.
Logout	Allows user to sign out of the user interface
Gateway Status Icon	Displays gateway name and indicates when gateway is in simplex or redundant mode
All Devices	Click to view all devices participating in the gateway's network.
Live	Click to view all devices currently online (does not include unreachable devices).
Unreachable	Click to view all devices that have dropped offline or are not publishing as configured.
Power Module Low	Click to view all devices signaling that their power module is low (needs to be replaced).
Gateway Load	Indicates percentage of available gateway bandwidth currently in use
Network Best Practices	Provides snap shot of the most critical network best practices (for more information, see the Systems Engineering Guide on www.emerson.com)
5 devices within range of gateway	Indicates percentage based on number of devices directly communicating with the gateway (once five or more devices are within range, percentage will remain at 100%)
25% devices within the singe hop of gateway	Indicates percentage based on number of devices directly connected to the gateway (if at least 25% of network devices have gateway connection, this value will be 100%)
Tasks	Provides information on recommended/required actions
New	Newly added devices (includes last five devices added to the network)
Recently Added (last 5 devices)	Last five devices added to the network
Date Added	Date and time device was added
Current PV	Last received primary process variable (PV) value
Changes	Most recent changes to the gateway and network
Description	Details of any changes made
From	Previous value of any parameters involved in a change
То	Current value of any parameters involved in a change
Requested	Date and time action was performed
Status	Change status (either successful or not)

1.3 About



Table 1-2. About

Item	Description
Gateway Final Assembly Number	Serial number supplied during final device assembly
Gateway Serial Number	Unique software serial number used by firmware to identify that particular gateway
Gateway Version	Software version currently installed on the gateway (to check for updated firmware, see www.emerson.com)
System Up Time	Amount of time the system has been up and running

1.4 Network Information

gure 1-3.	Network In	formation			
letwork Inform	ation				х
he network ID	and join key are	useful when con	nfiguring a new dev	ice.	
Network Id					
10724					
Common Join	Кеу				
		4450 41 50	5046404b	1	

Table 1-3. Network Information

Item	Description
Network ID	Unique ID used for this particular gateway network. Each field device must be configured with this ID to join this gateway's wireless network. The gateway pushes this information to all devices when changed if they are connected to the network.
Common Join Key	Gateway's current common join key (password that allows devices to securely join wireless network). Each device must be configured with this key to join this gateway's wireless network.
Turn on Active Advertising	Toggles the method gateway uses to search for new network devices. Devices will join without this feature however enabling this will make the process faster (automatically enabled if a device drops offline).
Network Settings	Click to view full list of the network settings.

1.5 Devices

wgdemo wgdemo.emrsn.org	Home Devices S	lystem Settings			+ Network Inform
All Devices	≓ 13	à	Unreachable	8 %	Power Module Low
Devices 10	 All Device 	is 🔻	Name (A-Z)		٩
Name	PV	sv	TV	qv	Last Update
2051 (64-0F-43-17)	🗹 0.021 PSI	24.341 DegC	24.25 DegC	☑ 3.499 V	04/27/15 10:19:17
2051 (64-0F-43-7B)	-0.292 PSI	24.005 DegC	🗹 24 DegC	✓ 3.627 V	04/27/15 10:19:25
2051 (64-1E-84-CC)	-0.252 PSI	23.859 DegC	23.75 DegC	🗹 3.613 V	04/27/15 10:19:36
2051 (64-1E-88-C9)	-0.168 InH2O 68F	23.082 DegC	23.25 DegC	☑ 3.624 V	04/27/15 10:20:00
• Z48 (3B-2B-8E-E7)	Z 26.948 DegC	✓ 26.932 DegC	NaN NaN	NaN	04/27/15 10:19:56
248 (3B-2E-A1-EB)	Z6.383 DegC	26.369 DegC	NaN NaN	NaN	04/27/15 10:19:52
3051S (71-10-DA-F7)	✓ 0.024 InH2O 68F	22.373 DegC	✓ 23.25 DegC	🗹 6.954 V	04/27/15 10:19:50
• 3051S (71-20-1E-78)	-0.029 InH2O 68F	22.617 DegC	🗹 23.25 DegC	🗹 6.494 V	04/27/15 10:19:49
4310 (CE-40-00-1F)	v 0	🔺 1	🗹 23 DegC	🜌 8.2 V	04/27/15 10:19:17
				A	04/27/15 10:19:20

Table 1-4. Devices

ltem	Description						
Device sorting and filteri	Device sorting and filtering tools						
Device Icons	Allows user to filter device by their current state (Live, Unreachable, Power Module, or All Devices)						
First dropdown	Allows user to select number of devices shown on the page						
Second dropdown	Allows user to filter device by their current state (Live, Unreachable, Power Module Low, or All Devices)						
Third dropdown	Allows user to select sort display order based on device name						
Fourth field	Allows user to search list for a particular device name (or sub-string contained within the name)						
Name	Name of the device						
PV	Value of the HART [®] primary variable (1st variable), typically the primary function of the device (e.g. temperature, pressure, level)						
SV	Value of the HART secondary variable (2nd variable), additional function of the device (e.g. temperature, pressure, level)						
TV	Value of the HART tertiary variable (3rd variable), additional function of the device (e.g. temperature, pressure, level)						
QV	Value of the HART quaternary variable (4th variable), additional function of the device (e.g. temperature, pressure, level)						
Last Update	Time stamp of last measurement received from the wireless field device						

1.5.1 Devices > Open Devices bar

Figure 1-5. Open Devices

+ 🗹 2051 (64-1E-84-CC)	-0.253 PSI	23.871 DegC	Z3.75 Deg	c 🔽	3.614 V	04/27/15 10:22:36
+ Z 2051 (64-1E-88-C9)	-0.182 InH2O 68F	23.082 DegC	Z 23.25 Deg	c 🔽	3.624 V	04/27/15 10:23:00
- Z48 (3B-2B-8E-E7)	Z6.925 DegC	Z 26.898 DegC	NaN NaN		NaN	04/27/15 10:23:08
Diagnostics						
State	Last Join	Total Joins		Network Reliab	ility	Path Stability
Live Lest Update: 04/27/15 10:23:08	04/07/15 11:39:13	1		100 %		95 %
Process Variables						
PV	sv		TV		QV	
Good 26.925 DegC	Good 26.	398 DegC	Good NaN		Ge Ge	ood NaN
+ Detailed Device Information						
+ Z48 (3B-2E-A1-EB)	Z6.373 DegC	26.359 DegC	NaN		NaN	04/27/15 10:23:04
• 🕅		A 10 100 Date	A 12 25 Dag	~	Le OFA M	04/27/15 10:22:50

Table 1-5. Open Devices

ltem	Description
Diagnostics	Displays useful information for troubleshooting devices
State	Current device status (possibilities values include live, late, stale, joining, low voltage, unreachable, or unknown)
Last Join	Date and time field device made its last successful join
Total Joins	Number of times field device has been successfully added to the network after being unreachable
Network Reliability	Percentage of packets transmitted by a device and received by the gateway (100.0% reliability indicates every expected data packet was received). This value represents reliability of the wireless network to deliver data and is rounded to the nearest tenth. This is a lifetime statistic that is reset via a gateway restart; it is possible to have a small number of late/missed updates over a long time and still have 100.0% reliability.
Path Stability	Percentage of transmitted packets successfully reaching their destination over a given path (two neighboring devices) calculated over the most recent 15-minute period. Network reliability is always higher than path stability due to automatic re-transmission using multiple paths and different RF channels.

1.5.2 Devices > Open Devices bar > Detailed Device Information

v	SV	TV		QN	1			
Good 26.922 DegC	Good 26.889 De	gC Good I	Good NaN		Good NaN			
- Detailed Device Information	1							
Service Status	Service Denied	Network Reliability	ŕ	Event Cou	nt			
	no	100 %		o				
HART Details	HART Status							
	Configuration changed							
	Tag Name	Device Id	PV Units		Burst Rate			
	248 (3B-2B-8E-E7)	00-18-1E-26-4F-4C-5A- 9F-26-3b:2b8ee7	DegC		16			
	Lower Range Value	Upper Range Value	due Range Units		Transfer Function			
	0.000	100.000	DegC		Linear			
	Edit HART Details							
Additional Status	+ View Additional Statu	15						
Diagnostics	Path Stability	RSSI		Current				
	95 %	-33		8.307 mA				
	Neighboring Devices		Neighboring Devices	Reliability				
	wgdemo		95%					
	2061 (64-0F-43-17)		94.4%					
Burst Statistics	+ View Burst Statistics							
Published Data	+ View All Published D	ata						
Presence	Delete							

Figure 1-6. Detailed Device Information

Table 1-6. Detailed Device Information

ltem	Description
Service Status	Provides information regarding that device's bandwidth
Service Denied	Indicates whether the field device has been denied bandwidth because a) too many devices are on the <i>Wireless</i> HART [®] network or b) the device has asked for an update rate not currently supported by the wireless network (this can occur if there is a 'pinch-point' in the network that is at its maximum load)
Network Reliability	Percentage of packets transmitted by a device and received by the gateway (100.0% reliability indicates every expected data packet was received). This value represents reliability of the wireless network to deliver data and is rounded to the nearest tenth. This is a lifetime statistic that is reset via a gateway restart; it is possible to have a small number of late/missed updates over a long time and still have 100.0% reliability.
Event Count	Indicates the number of times this action has occurred (number of times any enabled events are triggered displays here)
HART Details	Displays device's HART information
HART Status	Indicates overall field device HART status (if not green, troubleshooting may be required)
Tag Name	32-character HART long tag (for HART 7 devices) or 32-character HART message (for HART 5 devices)

Item	Description
Device ID	Unique device identification number, all <i>Wireless</i> HART devices should begin with 00-1E-1B (next four digits represent device type, the last six digits vary from device to device). This name cannot be changed; it represents the unique device the same way a serial number would. Keep track of this number if using the Access Control list.
PV Units	Units of measure of the primary variable (PV)
Burst Rate	Interval the field device transmits it's measurement data to the gateway (set based on how often the user wants the device to send data to the gateway). Some field devices burst multiple messages and at different rates. Burst rates under one minute are reported in seconds white rates one minute or greater are reported in hh:mm:ss. Also known as update rate.
Lower Range Value	User-configured lower range point used to calculate percent of range value based on current primary variable (when primary variable reaches the Lower Range Value, the percent of range will be 0%)
Upper Range Value	User-configured upper range point used to calculate percent of range value based on current primary variable (when primary variable reaches the Upper Range Value, the percent of range will be 100%)
Range Units	Engineering unit of measure associate with the lower and upper range points
Transfer Function	Describes algorithm used to compute the percent of range for the primary variable
Edit HART Details	Enable this to edit the features in the table (remember to save after editing)
View Additional Status	Expand to view additional field device statuses
Diagnostics	General information provided by the device and its neighbors
Path Stability	Percentage of transmitted packets successfully reaching their destination over a given path (two neighboring devices) calculated over the most recent 15-minute period. Network reliability is always higher than path stability due to automatic re-transmission using multiple paths and different RF channels.
RSSI	Received signal strength indication (RSSI) for the field device and neighbor (average calculated over the most recent 15-minute period). It represents how well that device is hearing other devices or the gateway within a network during a receive. Ideally, this number is greater than -79 dBm (e.g. a -45 dBm device has a greater signal strength than -79 dBm).
Current	Loop current controlled or measured by the field device
Neighboring Devices	Other nearby field devices with connections to this device (also known as neighbors). This indicates the HART tag of other devices within range of that device or gateway and will populate up to three of the strongest devices.
Neighboring Devices Reliability	Path stability of the neighboring devices.
View Burst Statistics	Expand to view all burst statistics for the field device and status of communication between the device and gateway
View All Published Data	Expand to view all published parameters for the field device (each parameter can be mapped in the protocols section)
Delete	Removes the device completely from the network and from all gateway host and user interfaces (device must be offline for this function to work)

Table 1-6. Detailed Device Information

1.5.3 Devices > Open Devices bar > Detailed Device Information > View Additional Status

Figure 1-7. View A	dditional Status	
Additional Status	- View Additional Status	
	HART Status	
	PRIMARY_VALUE_OUT_OF_LIMITS	no
	NONPRIMARY_VALUE_OUT_OF_LIMITS	no
	LOOP CURRENT SATURATED	no

NONPRIMARY_VALUE_OUT_OF_LIMITS	no
LOOP_CURRENT_SATURATED	no
LOOP_CURRENT_FIXED	no
MORE_STATUS_AVAILABLE	no
COLD_START	no
CONFIGURATION_CHANGED	yes
DEVICE_MALFUNCTION	no
Additional Status 0	
Bit 0	no
Bit 1	по
Bit 2	no
8/13	no
Bit 4	no
Bit 5	no
Bit 6	no
Bit 7	no

Table 1-7. View Additional Status

Item	Description
Additional Status	Displays detailed status information published by the field device (reference the device manufacturer's documentation for additional information)

1.5.4 Devices > Open Devices bar > Detailed Device Information > View Burst Statistics

Figure 1-8. View Burst Statistics

Burst Statistics	- View Burst Statistics							
	Burst Message 0							
	Command	Mode	Expected Rate	Average Rate	Updates	Missed Updates	Last Updates	
	178	Wireless	61.000 sec	61.023 sec	28285	0	04/27/15 10:56:59	
	Burst Message 1							
	Command	Mode	Expected Rate	Average Rate	Updates	Missed Updates	Last Updates	
	3	Wireless	16.000 sec	15.860 sec	22580	0	04/27/15 10:57:16	
	Burst Message 2							
	Command	Mode	Expected Rate	Average Rate	Updates	Missed Updates	Last Updates	
	48	Wireless	16.000 sec	15.866 sec	108784	0	04/27/15 10:57:16	
	Reset							

Table 1-8. View Burst Statistics

ltem	Description
Burst Statistics	
Command	HART command number published by the device (a field device may publish multiple commands at different burst intervals)
Mode	Device interface used to publish the command
Expected Rate	Expected time interval between successive burst messages.
Average Rate	Average time interval between burst messages calculated for all messages received since the device initially joined the network or since burst statistics were reset by the user
Updates	Number of updates received from the device since initially joining the network or since user reset the burst statistics
Missed Updates	Number of updates device has missed since initially joining the network or since user reset the burst statistics. Missed updates can be caused by the device falling off line (e.g. during power module replacement) or poor network reliability. Packets arriving late or out of sequence are also counted as missed.
Last Updates	Time stamp of the last burst message received
Reset	Clears all previous burst statistics shown, and resets all values in this section

1.5.5 Devices > Open Devices bar > Detailed Device Information > View All Published Data

Figure 1-9. View All Published Data

Published Data	- View All Published Data								
	Name	Value	Status	Last Update	Туре				
	4	26.916412	~	04/27/15 11:01:16	32 bit float				
	1_CLASS	0	V	04/27/15 11:01:16	8 bit unsigned int				
	1_CODE	1		04/27/15 11:01:16	8 bit unsigned int				
	1_HEALTHY	true	V	04/27/15 11:01:16	Boolean				
	1_STATUS	192	~	04/27/15 11:01:16	8 bit unsigned int				
	1 - 5 of 90 results				≪ < 1 2 18 > ≫				

Table 1-9. View All Published Data

ltem	Description
Published Data	
Name	Parameter name
Value	Current parameter value
Status	HART status indicator for this parameter
Last Update	Time stamp of last parameter value received from the wireless field device
Туре	Data type of parameter

1.6 System Settings

1.6.1 System Settings > Gateway

Figure 1-10. Gateway

wgdemo wgdemo emnn arg	Home	Devices	System Settings	+ Notwork Informa	aton
stem Settings >> Gateway					
	Ì	Smart V	Vireless Gat	eway	
	L	Ad	cess List	Manage clients accessing the Gateway using secure protocols.	
	L	Ba	ickup-Restore	Backup or Restore your System Settings.	
	I.	Ce	ertificate anagement	Import Galeway certificates into web browser or rebuild certificates.	
	ł	Et	hernet ommunication	Configure the Elhernet interfaces to communicate with the Gateway.	
	L	Fli	rmware	Update the Gateway firmware by installing the latest release.	
	L	Fe	atures	Manage the features enabled on the Gateway.	
	L	Lo	gging	Select protocols to log network event messages and define log frequency.	
	L	Tir	me	Set your Gateway date and time.	
	L				

Table 1-10. Gateway

ltem	Description
Access List	Click to manage clients accessing the gateway using secure protocols.
Backup and Restore	Click to backup or restore system settings.
Certificate Management	Click to import gateway certificates into web browser or rebuild certificates.
Ethernet Communication	Click to configure Ethernet interfaces to communicate with the gateway.
Firmware	Click to update the gateway firmware by installing the latest release.
Features	Click to manage features enabled on the gateway.
Logging	Click to select protocols for logging network event messages and define log frequency.
Time	Click to set gateway date and time.

1.6.2 System Settings > Network

Figure 1-11. Network

wgdemo wgdemo emmining			System Settings	+ Network Infor	mation
rstem Settings >> Network					
Gateway					
	K	Network	(
		Ch	annels	Control the radio frequencies that WirelessHART network uses.	
		Ne	twork Settings	Configure the WirelessHART network settings. This include the network name, network ID and	
Protocols				јот кеу.	
		Ac	cess Control List	Configure Individual join keys for each device.	
		Ne	twork Statistics	Display the current wireless network statistics.	

Table 1-11. Network

ltem	Description
Channels	Click to control radio frequencies used by the WirelessHART network.
Network Settings	Click to configure WirelessHART network settings (includes network name, network ID, and join key).
Access Control List	Click to configure individual join keys for each device.
Network Statistics	Click to display current wireless network statistics.

1.6.3 System Settings > Protocols

Figure 1-12. P	rotocols	5		
wgdemo wgdemo.emrsn.org	Home	Devices System Settings		+ Network Information
System Settings >> Protocols				
Gateway				
Network	F	Protocol		
Protocols				
Protocols And Ports		Protocols And	Set up security protocols for the Gateway using TCP and UDP ports.	
HART		Ports		
Modbus		HART	Set up HART Wireless Gateway and HART devices.	
Ethemet/IP				
OPC		Modbus	Establish network communication for Modbus devices.	
Users				
		EtherNet/IP	Set up EtherNet/IP member map and communication settings	
			eer op unter een menneer mop ans constantiet een ges	
		OPC	Set up OBC browns tree information	
		010	Set up OFG MONRE LICE Information.	

Table 1-12. Protocols

Item	Description
Protocols and Ports	Click to set up security protocols for the gateway using TCP and UDP ports.
HART	Click to set up HART Wireless Gateway and HART devices.
Modbus®	Click to establish network communication for Modbus devices.
EtherNet/IP™	Click to set up EtherNet/IP member map and communication settings.
ОРС	Click to set up OPC browse tree information.

1.6.4 System Settings > Users

Figure 1-13. Users

wgdemo wgdemo.emrsn.org	Home	Devices	System Settings		+ Network Information
System Settings >> Users	_				
Gateway					
Network		Users			
Protocols					
Users	K	U	ser Accounts	Assign names and passwords for users accessing the Gateway.	
User Accounts					
User Options		U	ser Options	Manage how users are able to login to the system.	

Table 1-13. Users

ltem	Description
User Accounts	Click to assign names and passwords for users accessing the gateway.
User Options	Click to manage how users are able to log into the system.

1.7 System Settings > Gateway pages

1.7.1 System Settings > Gateway > Access List

Figure 1-14. Acc	cess List				
wgdemo wgdemo.emrsn.org System Settings >> Gateway >> Acc	Home D	evices System Settings			+ Network Information
Gateway Access List Backup And Restore Certificate Management	Ac To ad	cess List d the client certificate to the a	iccess list, use the Security Setup Util	Ity	٩
		Organization	Common Name	Email	Expiration
		Emerson Process Management	192.168.107.96	Stella.Randall@Emerson.com	Feb 15 22:08:23 2025 GMT
		Emerson Process Management	USRTC-GWTST11	Stella.Randall@Emerson.com	Mar 6 14:32:04 2025 GMT
	•	Emerson Process Management	USRTC-GWTESTER2	Stella.Randati@emerson.com	Nov 18 17:20:34 2024 GMT
Protocols	•	Emerson Process Management	rtcvm-gwtest8	Stella.Randall@Emerson.com	Nov 17 21:15:24 2024 GMT
Users	•	Emerson Process Management	RTCVM-MIKEGRE2	m.green@emerson.com	Nov 16 20:33:15 2024 GMT
	1 - 5 0 Delet	f 8 results in Selected		a (1 2)	» 5 · ·

Table 1-14. Access List

Item	Description
Organization	Client's organization name
Common Name	Client's name (PC name)
Email	Client's email address
Expiration	Date the client's certificate is no longer valid

1.7.2 System Settings > Gateway > Backup and Restore



Table 1-15. Backup & Restore

Item	Description
Include diagnostic information in system backup	When checked, saves gateway diagnostics log information with the system backup file
Save Backup	Collects gateway configuration data and creates a system backup file saved on the PC client as a zip file (*.zip). System backups contain user passwords and keys used for encrypting communication; store downloaded system backups in a secure location.
Browse	Opens a navigation window to locate a system backup zip file (*.zip) on the PC client and then restores selected backup file to the gateway
Restore to Default	Returns gateway to default factory configuration
Restart App	Used to complete the backup process

1.7.3 System Settings > Gateway > Certificate Management



Table 1-16. Certificate Management

ltem	Description
Use self-signed certificate?	Select Yes to have digital certificate signed by same entity (wireless gateway) whose identity it certifies (i.e. the gateway signs its own certificate).
Import Gateway certificate into web browser	Sends gateway security certificates to current web browser
Rebuild Gateway certificates	Rebuilds security certificates for the gateway (may temporarily interrupt gateway communications)

1.7.4 System Settings > Gateway > Ethernet Communication

Figure 1-17. Ethernet	Communication	
wgdemo wgdemo Home	Devices System Settings	+ Network Information
System Settings >> Gateway >> Ethernet Communic	cation	
Gateway		
Access List	Ethernet Communication	
Backup And Restore	Primary Interface [Port 1]	Secondary Interface [Port 2]
Centricate Management		
Ethemet Communication	Specify an IP address (recommended)	Specify an IP address (recommended)
Fernivare	Obtain an IP address from a DHCP server	Obtain an IP address from a DHCP server
Features	Obtain Domain Name from DHCP Server	Obtain Domain Name from DHCP Server
Logging	Interface Physical Address	Disable Port
Time	00:26:16:01:00.E8	Interface Physical Address
Network		00:26:16:01:00:E9
	Full Primary Host Name	Full Secondary Host Name
Protocols	wgdemo	wihart-107-24
Users		
	Host Name	Host Name
	wguerno	wihart-107-24
	Domain Name	Domain Name
	emrsn.org	
	IP Address	IP Address
	10.224.50.17	192.168.107.24
	Net Mask	Net Mask
	255.255.255.0	255 255 255 0
	Calaway	
	10 224 50 1	
	Save Changes Can	cet

Table 1-17. Ethernet Communication

Item	Description
Primary Interface [Port 1]	Refers to Ethernet port 1
Specify an IP address (recommended)	Select this to insert a unique IP address matching local communication best practices (consult IT personnel if needed when adding gateway to a specific LAN or router)
Obtain an IP address from a DHCP server	Select this to make associated interface obtain IP address from a DHCP server.
Obtain Domain Name from DHCP server	When checked, makes associated interface obtain a Domain Name from a DHCP server
Interface Physical Address	Binary number in the form of logical high and low states on an address bus corresponding to a particular cell of primary storage (i.e. main memory), or to a particular register in a memory-mapped I/O (input/output) device
Full Primary Host Name	Unique name by which a computer is known on a network (used to identify in electronic mall, Usenet news, or other forms of electronic information interchange)
Host Name	Host name for the WirelessHART Gateway
Domain Name	Name of the domain the WirelessHART Gateway will join
IP Address	User-specified IP address for associated interface

Item	Description
NetMask	User-configurable string of 0's and 1's that mask or screen out the network part of an IP address so only the host part of the address remains
Gateway	User-configurable network node that serves as an access point to another network
Secondary Interface [Port 2]	Refers to Ethernet port 2
Enable/Disable Port	When checked, turns port off to prevent tampering

Table 1-17. Ethernet Communication

1.7.5 System Settings > Gateway > Firmware

Figure 1-18. Firmware

wgdemo wgdemo.emrsn.org	Home	Devices	System Settings	+ Network Information
System Settings >> Gateway >> Fire	mware		^	
Gateway				
- Access List		Fin	nware Upgrade	
Backup And Restore				
Certificate Management				
Ethernet Communication		This I	a procedure for installing a firmware upgrade in the Gateway. This should be done by recommendation	of your
Firmware		Emer	un representative.	
Features		rebui	ig: A firmware upgrade will require a restart of your wireless system. During the upgrade the wireless hel I	INO/W WID
Logging		т	upgrade your firmware, select release file to upload	
Time		Choo	se files	
Network				
Protocols			Inersele	
Users		-	opgialor:	

Table 1-18. Firmware

ltem	Description
Firmware Upgrade	Procedure for installing new/improved firmware in the gateway. Firmware upgrade requires a restart (shut down of wireless system); carefully follow recommended upgrade procedure supplied with the firmware upgrade.

1.7.6 System Settings > Gateway > Features

Figure 1-19. Features		
wgdemo Home	Devices System Settings	+ Network Information
System Settings >> Gateway >> Features	^	
Gateway		
Access List	Features	
Backup And Restore		
Certificate Management	Gateway Name wgdemo	
Ethernet Communication	Serial No 65768	
Firmware		
Features	Features installed on the Gateway	
Time	AMS	
	ElberNel/IP	
Network	HADTID	
Protocols	PART-IP	
lleare	ModbusiRTU	
03013	Modbus/TCP	
	OPC	
	Secondary Ethernet	
	Ungrada Current Features	
	opgrade current reatures	
	Select an option file	
	Browse	
	biowse	
	linstall	

Table 1-19. Features

ltem	Description
Gateway Name	Host name for the WirelessHART Gateway
Serial No	Unique software serial number used by the firmware to identify that particular installation (only used if factory needs more information or firmware upgrades)
Features installed on the Gateway	Protocols currently installed on the gateway

1.7.7 System Settings > Gateway > Logging



Table 1-20. Logging

ltem	Description
Enable Remote logging	When checked, enables remote system logging feature
Remote Server IP Address	IP address of the machine running the remote Syslog server
Remote server Port	Protocol port for the remote Syslog server
Syslog Protocol	Selects format used for logged messages (newer format is IETF-Syslog and defined in RFC 5424, legacy format is BSD and defined in RFC 3164)
Syslog Transport	Selects transport used for communication with remote Syslog server (choices are UDP, TCP, or TLS [encrypted])
Require trusted server certificate?	When using TLS encrypted communication, the remote Syslog server can use a trusted certificate or a certificate unknown to the gateway. Select Yes for an added level of security and exchange keys with the gateway using the security setup on remote Syslog server.
Log keep-alive message?	Select Yes to make the gateway send a 'keep-alive' message when no other log activity has occurred. This provides another method for remote Syslog server to verify communication with the gateway.
Keep-alive message frequency (minutes)	Frequency the 'keep-alive' message is sent
View System Log	Opens a window where you can view the most recent system log information and definitions

1.7.8 System Settings > Gateway > Time

Figure 1-21. Time

wgdemo wgdemo.emrsn.org	Home Devices	System Settings	+ Network Information
System Settings >> Gateway >> Time			
Gateway	_		
Access List	Time		
Backup And Restore			
Certificate Management	📥 Wa	arning	
Ethernet Communication	Changing	g the time or time se	ettings may result in the temporary loss of data updates from all devices.
Firmware	Your P	C's time	04/27/15 15:18:50.348
Footures	Gatewa	iy time (wgdemo)	04/27/15 15:18:50.310
reatules	Differe	nce	0 days 00:00:00.038
Logging	Method	used to set time	Network Time Protocol(NTP, recommended) Set with PC time O Manual entry
Time	Primar	y	
Network			
	Time s	erver	192.168.107.1
Protocols	NTP se	rver type	Ounicast O Broadcast O Multicast
llooro	NTP pa	cket version	0 1 0 2 0 3 0 4
Users			
	Secon	dary	
	Time s	erver	
	NTP se	rver type	• Unicast O Broadcast O Multicast
	NTP pa	cket version	0 1 0 2 0 3 0 4
	Save	Changes	Cancel
	Sarc	ondingeo	

Table 1-21. Time

Item	Description
Your PC's time	Time used by the PC client
Gateway time	Time currently used by the gateway
Difference	Difference between current operating system time clock and gateway time clock
Method used to set time	Selects the way gateway synchronizes the time to a specific third party device including separate NTP (network time protocol) or your PC time (NTP is the recommended method)
Time server	IP address of a known time server to which the gateway clock is synchronized
NTP server type	Selects type of time server
NTP packet version	Selects packet version of time server

1.8 System Settings > Network pages

1.8.1 System Settings > Network > Channels

igure 1-22. Chann	els				
wgdemo Hom	e Devices Sy	stem Settings			+ Network Inform
tem Settings >> Network >> Channels					
Gateway					
Network	Channels				
Channels					
Network Settings	Warning: Chang	ing channels and freque	ncy may disrupt communicat	on of the devices	
Access Control List	on your network.				
Network Statistics					
Protocols	Enable	Channel	Frequency(GHz)		
Jsers		11	2.405		
		12	2.410		
		13	2.415		
		14	2.420		
		15	2.425		
		16	2.430		
		17	2.435		
		18	2.440		
		19	2.445		
		20	2.450		
		21	2.455		
		22	2.460		
		23	2.465		
		24	2.470		
	2	25	2.475		
		anges	Cancel		

Table 1-22. Channels

Item	Description
Enable	When checked, enables associated channel (used to determine which channels are used within the gateway's broadcast). This is not required for normal operation; only use if required in very heavy RF situations.
Channel	IEEE 802.15.4 channel number
Frequency (GHz)	Frequency of the channel being used

1.8.2 System Settings > Network > Network Settings

Figure 1-23. Netwo	rk Settir	igs			
wgdemo wgdemo.emrsn.org Home	Devices	System Setti	ngs		+ Network Information
System Settings >> Network >> Network Setting	ngs				
Gateway					
Network	Network	Settings			
Channels	Network	name			
Network Settings	myNet				
Access Control List					
Network Statistics	Network	D			
Drotocole	10724				
FIGLOCOIS					
Users					
	Join Key				
	Show jo	in key		 	
	Rotate ne	twork key?			
	Yes				
	® No				
	Change r	etwork key i	now?		
	Yes				
	® No				
	Security	mode			
	Commo	i join key 🔍 Ac	cess control list		
	Active A	lvertising			
	© Yes ⊛ N	Þ			
			Cancel		

Table 1-23. Network Settings

Item	Description
Network name	User-defined network name
Network ID	Unique ID used for this particular gateway's network (can be set so each device initially joins the network along with the common join key). The gateway pushes this information to all devices when changed if they are connected to the network.
Join Key	Represents network being connected to, and the password required to access it (typically defaulted in each gateway and will not be used when enabling the access control list)
Rotate network key?	Select Yes to make gateway generate a new random network key (encryption) on a periodic basis (a period of time between rotations must be determined from 10-100 days; default is 90 days)
Change network key now?	Select Yes to automatically generate a random key and push to existing network devices (occurs when Save Changes is selected)
Security mode	Selects whether the gateway uses a common join key or access control list to determine which devices can join the <i>Wireless</i> HART network
Active Advertising	Select Yes to make gateway actively search for new network devices. Devices will join without this feature however enabling this makes process faster (automatically enabled if a device drops offline).

1.8.3 System Settings > Network > Access Control List

Figure 1-24. Access Control List

novden o 192.165.2.10		Devices System S	ettings				+ Network Information
iystem Settings >> Network >> Ace	ess Control List						
Gateway	Ac	cess Control	List				
Network		New Peters	Called Calif.	es John Felhause		_	
		Device ID	Device Hame	Generate New Join key	Online	Common Join Key	Default Join Key
		00-1B-1E-26-72-00- 01-54	705_003			no	no
		00-1B-1E-26-72-00- 01-55			8	no	no
		00-1B-1E-26-72-0F- 42-53	705_MVT		Z	no	no
	1 - 3 (of 3 results					×
		late Selected Check G	enerated Key For Selected		Sel	ect Online New Joi	n Key Recommended

Table 1-24. Access Control List

Item	Description
Device ID	Unique device identification number, all <i>Wireless</i> HART devices should begin with 00-1B-1E (next four digits represent device type, the last six digits vary from device to device). This name cannot be changed; it represents the unique device the same way a serial number would.
Device Name	Device's HART Tag
Generate New Join key	When checked, generates new unique join key for the device
Online	Indicates device is communicating on the WirelessHART network
Common Join Key	Indicates whether device is using common join key
Default Join Key	Indicates whether device is using the default join key
Check Generated Key for Selected	Checks the Generate New Join Key box for all selected entries
New Join Key Recommended	Selects all devices with a common join key or a default join key

1.8.4 System Settings > Network > Network Statistics

vgdemo igdemo emrsn.org Ho	me Devices System Setti	ngs				+ Network Inform
Settings >> Network >> Network S	tatistics					
	All Devices	- Live	-/+ Ur	reachable	-1-	Power Module Low
hannels	13	← 13	≪‴ 0		Ly_	0
		-				
ccess Control List	Devices 5	* All Devices *	Name (A-Z)			Q
atwork Statistics	Name	Network Reliability	Bandwidth Available	Joins		Join Time
tocols	- Z051 (64-0F-43-17)	100 %	Z	1		04/07/15 11:36:01
	Device Network Statistics					
	Neighboring Device		RSSI		Path 5	Stability
		То	From			
	wgdemo	-58db	-56db		80.81	%
	702 (5A-00-01-28)	-29db	-32db		89.29	%
	2051 (64-0F-43-7B)	-16db	-25db		100 %	
	THUM (4F-4C-5A-9F)	-56db	-62db		100 %	
	3051S (71-20-1E-78)	-43db	-45db		100 %	
	2051 (64-1E-8B-C9)	-15db	-21db		100 %	
	708 (63-3D-09-D1)	-37db	-44db		89.29	%
	THUM (4F-2E-21-2D)	-59db	-61db		100 %	
	+ Z 2051 (64-0F-43-7B)	100 %	V	1		04/07/15 11:37:49
	+ Z 2051 (64-1E-84-CC)	100 %	V	1		04/07/15 11:38:22
		100 %		1		04/07/15 11:38:45
	+ Z48 (38-28-8E-E7)	100 %	✓	1		04/07/15 11:39:13
	1 - 5 of 13 results			a (1 2	377 5	

Figure 1-25. Network Statistics

Table 1-25. Network Statistics

ltem	Description
Name	Name of the device HART tag
Network Reliability	Percentage of packets transmitted by a device and received by the gateway (100.0% reliability indicates every expected data packet was received). This value represents reliability of the wireless network to deliver data and is rounded to the nearest tenth. This is a lifetime statistic that is reset via a gateway restart; it is possible to have a small number of late/missed updates over a long time and still have 100.0% reliability.
Bandwidth Available	Indicates whether field device has been denied bandwidth because the device has requested an update rate exceeding available network capacity or has poor network topology. If experiencing issues, too many devices at too fast of update rates may exist to be supported within the network. Review network topology with respect to pinch points, update rates, and number of devices. Ensure the network meets best practices. Tools such as AMS [®] Wireless SNAPON [™] or the Gateway Capacity Estimator can provide deeper insight into network topology issues and gateway loading.
Joins	Number of times field device has joined the network since the last system reset (high value may indicate some connectivity issue with that device). The number of joins increases at every power module replacement or when the device is removed from the network and rejoins.
Join Time	Time the device joined the network (may be helpful to diagnose connectivity issues when combined with the number of joins)

Table 1-25. Network Statistics

ltem	Description
Neighboring Device	Other nearby field devices with connections to this device (provides the HART tag of other devices within range of that device or gateway with active communication to that device)
RSSI	Received signal strength indication (RSSI) for the field device and neighbor (average calculated over the most recent 15-minute period). It represents how well that device is hearing other devices or the gateway within a network during a receive. Ideally, this number is greater than -79 dBm (e.g. a -45 dBm device has a greater signal strength than -79 dBm).
То	RSSI to the neighbor device, defines the connection to the neighbor device (significant mismatch between the "from" and "to" RSSI may require additional investigation)
From	RSSI from the neighbor device, defines the connection from the neighbor device (significant mismatch between the "from" and "to" RSSI may require additional investigation)
Path Stability	Percentage of transmitted packets successfully reaching their destination over a given path (two neighboring devices) calculated over the most recent 15-minute period. Network reliability is always higher than path stability due to automatic re-transmission using multiple paths and different RF channels.

1.9 System Settings > Protocols pages

1.9.1 System Settings > Protocols > Protocols and Ports

Protoc	cols And Ports			
Enabled	Protocol	Port Type	Port	Port Upper Range [UDP]
2	AMS	TCP	33333	
2	AMS Secure	TCP	32000	
2	DHCP	UDP	68	
E	EtherNet/IP	TCP	44818	
E	EtherNet/IP	UDP	2222	
22	HART-IP	UDP	5094	5126
2	HART-IP	TCP	5094	
12	HART-IP Secure	TCP	5095	
2	HTTP	TCP	80	
12	HTTPS	TCP	443	
2	Modbus TCP	TCP	502	
2	Modbus TCP Secure	TCP	1502	
	NTP	UDP	123	
14				
	OPC Comm	TCP	1199	

Figure 1-26. Protocols and Ports

Table 1-26.	Protocols	and Ports
-------------	-----------	-----------

Item	Description
Enabled	When checked, enables associated communication protocol and opens specified TCP/UDP port
Protocol	Type of Ethernet communication protocol
Port Type	Either TCP or UDP port used by the associated communication protocol
Port	Port number for the associated communication protocol and port type
Port Upper Range (UDP)	Range of ports used for this protocol (usually a fixed number of difference between UDP and regular)
AMS Secure	SSL-enabled Ethernet communication protocol used to talk to asset management hosts (also requires HTTPS)
DHCP	Network protocol that enables a server to automatically assign an IP address to a computer from a defined range of numbers (i.e., a scope) configured for a given network
EtherNet/IP	Member of a family of networks that implements the Common Industrial Protocol (CIP [™]) at its upper layers. CIP encompasses a comprehensive suite of messages and services for a variety of manufacturing automation applications, including control, safety, synchronization, motion, configuration, and information.

Table 1-26. Protocols and Ports

Item	Description
HART-IP	Additional connection option that facilitates host level systems and assets and integrates measurement and device diagnostics information from HART-enabled field devices using the existing plant networking infrastructure
HART-IP Secure	SSL-enabled Ethernet communication protocol used to talk to HART enabled hosts (requires HTTPS)
НТТР	Ethernet communication protocol used for the gateway's web based user interface
НТТРЅ	SSL-enabled Ethernet communication protocol used for the gateway's web-based user interface
Modbus TCP	Ethernet communication protocol used to talk to Modbus TCP-enabled hosts
Modbus TCP Secure	SSL-enabled Ethernet communication protocol used to talk to Modbus TCP-enabled hosts (requires HTTPS)
NTP	Communication port used to talk to a Network Time Protocol (NTP) server
OPC Comm	Interoperability standard for secure and reliable exchange of data in the industrial automation space and in other industries
OPC Comm Secure	SSL-enabled Ethernet communication protocol used to communicate to OPC enabled hosts

1.9.2 System Settings > Protocols > HART

Figure 1-27. HART

wgdemo wgdemo emisin org	Home Devices System Settings	+ Network Information
System Settings >> Protocols >> HAR	RT	
	HART Gateway Set up Gateway Name	
Protocols	wgdemo	
	ℤ Use ethernet protocol hostname for Gateway name	
	Network Hierarchy	
	Allow Gateway to be seen as field device	
	© Yes ⊛ No	
	Save Changes Cancel	

Table 1-27. HART

ltem	Description
Gateway Name	Host name for the WirelessHART Gateway
Use ethernet protocol host name for Gateway name	When checked, uses the host name field under the Ethernet page to replace the gateway name (one-time action). Further host name changes will not be reflected on this page unless the box is rechecked.
Allow Gateway to be seen as field device	Select Yes to allow the gateway to be seen as a field device on device specific pages

Figure 1-28. HART Statistics

Description	XML Stats	UDP Stats	TCP Stats
Message Recieved	293	0	90
Message Returned	293	0	90
Message Broadcast	0	0	0
Requests Forwarded	40	0	13
Requests Returned	40	0	13
Message Connections	1	0	2
Online Connections	0	0	0

Table 1-28. HART Statistics

Item	Description
Description	Explains mapped parameter
XML Stats	HART communications over XML protocol (associated with AMS Wireless Configurator and AMS communication protocols)
UDP Stats	HART communications over UDP protocol (associated with the HART UDP Port communication protocol)
TCP Stats	HART communications over TCP protocol (associated with the HART TCP Port and HART TCP Secure communication protocol)
Message Received	Number of messages gateway received from a client application (can be any HART-enabled host)
Message Returned	Number of messages gateway returned to a client application (can be any HART-enabled host)
Message Broadcast	Number of periodic (scheduled) messages gateway received from a client application
Requests Forwarded	Number of messages gateway has forwarded to field devices (not all messages received are forward because some information is cached in the gateway)
Requests Returned	Number of messages gateway received from field devices in response to forwarded requests
Message Connections	Number of connections included on the HART IP
Online Connections	Number of connections active
Reset Counts	Resets all HART statistics

1.9.3 System Settings > Protocols > Modbus page

1.9.3.1 System Settings > Protocols > Modbus > Mappings

Network	Mo	odbus				
Protocols	Map	pings				
	Add	New Entry	Show/Hide System Registers	Import Mappings Export Mappings		Q,
		Register	Point Name		State	Invert
		40001	2051 (64-0F-43-17).PV			
		40003	2051 (64-0F-43-7B).PV			
		40005	2051 (64-1E-84-CC).PV			
	0	40009	2051 (64-1E-8B-C9).PV			
	0	40011	3051S (71-10-DA-F7).PV	*	*	
	1 - 5	of 13 results		« (1 2 3) »	5	
	1 - 5 / Deb	of 13 results ste Mappings	Submit	a (1 2 3) »	0	

Table 1-29. Mappings

ltem	Description
Add New Entry	Creates a new entry in the table
Show/Hide System Registers	Shows/hides predefined system registers 49001 = current year, 49002 = current month, 49003 = current day, 49004 = current hour, 49005 = current minute, 49006 = current second, 49007 = messages received
Import Mappings	Opens a window to browse and locate a Modbus mapping backup file (CSV file) on the PC client
Export Mappings	Collects gateway Modbus mapping data and creates a backup file (saved on PC client as a CSV file [*.csv])
Register	Memory location used to reference point data via Modbus protocol (Modbus holding register)
Point Name	Assigned data point in the format HARTtag.parameter
State	For Booleans, indicates which value will be reported as a 1. For integers, identifies a particular bit to be reported as 1 (reserved for registers less than 20000)
Invert	When checked, switches the 0 or 1 response for discrete state values for associated point name

1.9.3.2 System Settings > Protocols > Modbus > Communication Settings

Figure 1-30. Communication Settings					
Communic	ation Settings				
Addresses Single Mod Muttple Mo Baud Rate 57600 Response De	bus Address 1 dbus Addresses say Time(ms)	Parity ● None ● Even	Stop Bits		
p Unmapped Re © Zero Fill ⊛ Illegal Data Save Comm	gister Read Response? I Address nunication Settings	 Odd Unmapped Register Write OK Illegal Data Address 	e reo		

Table 1-30. Communication Settings

Item	Description
Single Modbus Address	Select to use a single Modbus RTU slave address
Multiple Modbus Addresses	Select to use multiple Modbus RTU slave addresses (configured per point in the Modbus mapping page)
Baud Rate	Communication speed for Modbus RTU
Response Delay Time (ms)	After receiving a request, gateway will wait this long before it sends a response
Unmapped Register Read Response?	Selects the response gateway sends if no data is mapped to the register during a read request (gateway can either return zero for the requested register or illegal data address exception)
Unmapped Register Write Response?	Selects the response gateway sends if no data is mapped to the register during a write request (gateway can either return zero for the requested register or illegal data address exception)
Parity	Selects whether parity is used for Modbus RTU messages and whether it is even or odd
Stop Bits	Selects number of stop bits for Modbus RTU messages

1.9.3.3 System Settings > Protocols > Modbus > Format Settings

Figure 1-31. Comm	unication Settings		
	Format Settings		
	Floating point representation	Byte Swap	
	 Float Round Scale 	Use swapped floating point format?	
	 ✓ Incorporate values associated status Value reported for error (floating point) ● NaN 	as error?	
	 Infinity Infinity Other 32767 		
	Value reported for error (rounded and na 32767	tive integer)	
	Save Format Settings		

Table 1-31. Communication Settings

Item	Description
Floating point representation	Selects format in which Modbus data is given
Value reported for error (floating point)	Selects value reported if the value's associated status indicates a critical failure (only used if gateway is using float representation)
NaN	Reported if value's associated status indicates a critical failure
Infinity	Reported if value's associated status indicates a critical failure
-Infinity	Reported if value's associated status indicates a critical failure
Other	User-defined value reported if value's associated status indicates a critical failure
Value reported for error (rounded and native integer)	Only used when round or scale is selected under floating point representation
Byte Swap	When checked, reverses significant register used in a floating point representation

1.9.3.4 System Settings > Protocols > Modbus > Modbus Statistics

Figure 1-32. Modbus Statistics

Name	Serial	TCP
Crc errors	0	0
Messages received	0	0
Exception responses	0	0
Connections accepted		0
Active connections		0
Messages transmitted	0	٥

Table 1-32.Modbus Statistics

item	Description
Name	Statistic name being used
Serial	These statistics are only available over serial communications or Modbus 485.
ТСР	These statistics are only available over Ethernet TCP Modbus connections.
CRC errors	Number of cyclic redundancy check errors (generally indicate noise in transmission or problems with data integrity)
Messages received	Number of messages received from Modbus master device
Exception responses	This number increments if any exception is returned.
Connections accepted	Number of total connections from Modbus TCP masters accepted over time (not the current number of connections)
Active connections	Number of Modbus connections currently active on the gateway
Messages transmitted	Number of response messages transmitted from the gateway
Reset Counts	Resets all table values

1.9.4 System Settings > Protocols > EtherNet/IP page

1.9.4.1 System Settings > Protocols > EtherNet/IP > Member Map

Figure 1-33. EtherNet/IP Member Map

Gateway	
Network	EtherNet/IP
Protocols	EtherNet/IP Member Map
Protocols And Ports HART	Add New Entry Show/Hide System Members Add All PV Import Mappings Q
Modbus	Input Instance (DEC) Output Instance (DEC) Member Point Name
Ethernet/P	No results found.
OPC	0 - 0 of 0 results
Users	Delete Mappings Submit

Table 1-33. EtherNet/IP Member Map

Item	Description
Show/Hide System Members	Toggles visibility of system members or data available (use to see what information is available within the gateway by default)
Add All PV	Inserts new table entry for the primary value of every wireless field device
Import Mappings	Imports existing mapping from a csv file created through $Excel^{\circledast}$ or obtained from another gateway's parameters
Export Mappings	Exports current device parameters mapped for EtherNet/IP to be used offline or for another gateway
Input Instance (DEC)	EtherNet/IP Input Static Assembly Instance – 496 bytes
Output Instance (DEC)	EtherNet/IP Output Static Assembly Instance – 496 bytes
Member	EtherNet/IP Instance Member in which data will get produced or consumed
Point Name	Assigned data point in the format HARTtag.paramter

1.9.4.2 System Settings > Protocols > EtherNet/IP > Communication



Assembly Object Type Sta	lic		
EtherNet/IP TCP Port 448	18		
EtherNet/IP UDP Port 448	18,2222		
Incorporate values associate	d status as error?		
Value reported for error (floa NaN	ting point)		
 Infinity Other 32767 			
Value reported for error (nat	ve integer) 32727		

Table 1-34. EtherNet/IP Communication

Item	Description
Assembly Object Type	Static assembly object type is the only type available with an EtherNet/IP application
Ethernet/IP TCP Port	TCP Port used to access EtherNet/IP TCP data directly from gateway
Ethernet/IP UDP Port	UDP Port used to access EtherNet/IP UDP data directly from gateway
Incorporate values associated status as error?	Select Yes to report a critical failure or communication loss through the EtherNet/IP member if HART variable status indicates a critical failure
Value reported for error (floating point)	Selects value reported if value's associated status indicates critical failure (only used if gateway is using float representation)
NaN	Reported if value's associated status indicates a critical failure
Infinity	Reported if value's associated status indicates a critical failure
-Infinity	Reported if value's associated status indicates a critical failure
Other	User-defined value reported if the value's associated status indicates a critical failure
Value reported for error (native integer)	User-defined value reported if the value's associated status indicates a critical failure (only used if the gateway is using integer representation)

1.9.4.3 System Settings > Protocols > EtherNet/IP > Statistics

-		
	and the second s	-
Eiguro 1	25 EthorNot/ID Static	ticc
гипе	->>. FILLELINEL/LP STATIS	
- IQUIC		

CIP	Messaging Statistics
Description	Value
Messages Received	
lessages Sent	
JCMM Received	
JCMM Sent	
JCMM Error Response	
Description	Value
Description	Value
Description //O Packets Received	Value
Description UO Packets Received O Packets Sent	Value
Description //O Packets Received //O Packets Sent //O Packets Failed To Sent	Value
Description //O Packets Received //O Packets Sent //O Packets Failed To Sent //O Packets Received Error	Value
Description VO Packets Received VO Packets Sent VO Packets Failed To Sent VO Packets Received Error totive connections	Value
Description i/O Packets Received i/O Packets Sent i/O Packets Failed To Sent i/O Packets Received Error Active connections Current I/O Message Connections	Value

Table 1-35. EtherNet/IP Statistics

Item	Description
CIP Messaging Statistics	Used for troubleshooting networks
Description	Description of the parameter being mapped to the host system
Value	Value of the mapped parameter
Messages Received	Statistics related to number of messages received
Messages Sent	Statistics related to number of messages sent
UCMM Received	Unconnected Message Manager (UCMM) statistics related to number of messages received
UCMM Sent	UCMM statistics related to number of messages sent
UCMM Error Response	UCMM statistics related to number of error responses
I/O Messaging Statistics	Used for troubleshooting networks
I/O Packets Received	Input/output packets received
I/O Packets Sent	Input/output packets sent
I/O Packets Failed To Send	Input/output packets that are going to send
I/O Packets Received Error	Input/output packets received error
Active connections	Number of EtherNet/IP connections available (used to monitor number of active connections to the EtherNet/IP module)
Current I/O Message Connections	Number of input/output packets that received connections
Current CIP Message Connections	Number of CIP Message Connections currently connected to the device
Reset Counts	Resets all table values

1.9.5 System Settings > Protocols > OPC

wgdemo.emrsn.org	Home (Devices System Settings			+ Network Inform
m Settings >> Protocols >> Of	×C				
	0	PC			
	Mai	opinas			
		-huige			
	Add	I New Entry Add All PV	Impor	Mappings Export Mappings	٩
		Point Name			String Value
		2051 (64-0F-43-17).PV	*		
		2051 (64-0F-43-7B).PV	*		
		2051 (64-1E-84-CC).PV	*		
		2051 (64-1E-88-C9).PV	*		
		248 (3B-2B-8E-E7).PV	*		

Table 1-36. OPC Mappings

Item	Description	
Add New Entry	Creates new entry in the table	
Add All PV	Creates new entry for the primary value of every wireless field device	
Import Mappings	Opens a window to browse and locate a Modbus mapping backup file (CSV file) on the PC client	
Export Mappings	Collects gateway Modbus mapping data and creates a backup file (saved on the PC client as a CSV file [*.csv])	
Point Name	Assigned data point in the format HARTtag.parameter	
String Value	When checked, point data is represented in a string of characters rather than the default 32-bit floating point	

1.10 System Settings > Users pages

1.10.1 System Settings > Users > User Accounts

Figure 1-37.	User Acc	ounts			
TestLab-60 10.224.40.49		Devices	System Setting		
SystemSettings >> Protocols ?	>> User Accounts				
Gateway		Liner Ac	acunto		
		USEI AU	counts		
Protocols		Note : Nev	v passwords must	be at least 1 charact	er in length.
		Add M	ou Entre		
		Add N	ewenny	ų	
		Name		Function	Edit
		maint		Maintenance	Edit
		oper		Operations	Edit
		admin		Administrator	Edit
		exec		Executive	Edit
		1 - 4 of 4	results « < 1	> >> 5	•

Table 1-37. User Accounts

ltem	Description
Name	Name of the user account
Function	Access privileges for the user, administrator, maintenance, operations, or executive
Edit	Edits corresponding field
maint	 These are the privileges that a maint user type has: Configure HART device settings Configure Modbus communications Configure Modbus register mapping Configure OPC browse tree Configure Active Advertising
oper	Read-only access with the ability to delete inactive devices
admin	Includes all maintenance privileges for administrators
exec	Read-only access

1.10.2 System Settings > Users > Users Options



Table 1-38. Users Options

ltem	Description	
Password Strength	Selects level or rules used for user password strength (i.e. none, minimal, normal, strong, or custom) to enhance password strength requirements (recommended)	
None	Select to use no requirements	
Minimal	Select to set minimum requirements based on scaling of options possible	
Normal	Select to set normal password protection enabled based on scaling of options possible	
Strong	Select to set strong password protection based on the current options available	
Custom	Select to set input custom length requirements	
Show Details	Shows information to edit	
Login page message	Message displayed at user login page	

1.11 Redundancy option

1.11.1 System Settings > Gateway

Figure 1-39. Gateway

to rodundant-1R Home	Devices System Settings		+ Network Information
System Settings >> Gateway	· · · ·		
Gateway 🥠			
Access List	Smart Wireless Gate	way	
Backup And Restore			
Certificate Management			
Ethemet Communication	Access List	Manage clients accessing the Gateway using secure protocols.	
Features			_
Logging	Backup-Restore	Backup or Restore your System Settings.	
Redundancy Status			
Redundancy Time	Certificate Management	Import Gateway certificates into web browser or rebuild certificates.	
Network	Ethernet Communication	Configure the Ethernet interfaces to communicate with the Gateway.	
Protocols		Lindate the Category formure to installing the latest release	
Users	Firmware	update the Gateway infinitiate by instanting the larest recease.	
	Features	Manage the features enabled on the Gateway.	
	Logging	Select protocols to log network event messages and define log frequency.	
	Redundancy Status	To establish and check the status of Redundant Gateway pair.	
	Redundancy	Select a back-up Gateway to establish a redundant system.	
	Time	Set your Gateway date and time.	
			_

Table 1-39. Gateway

Item	Description
Redundancy Status	Establishes and checks status of redundant gateway pair
Redundancy	Selects a backup gateway to establish a redundant system

1.11.1.1 System Settings > Gateway > Redundancy Status



Table 1-40. Redundancy Status

ltem	Description
Switchover	Toggles between primary and secondary gateway (commonly used to switch out gateways without loss of network)

1.11.1.2 System Settings > Gateway > Redundancy

Figure 1-41. Redundancy System Settings

rcc-redundant-IR 10.210 85.252 H ystem Settings >> Gateway >> Redunda	iome Devices System	n Setlings		+ Network Information
Gateway Access List	Redundancy Sys	tem Settings		
	Redundant Mode		© Standalone	e Redundent
	Save Changes	Cancel		
Users				

Table 1-41. Redundancy System Settings

Item	Description
Redundant Mode	Places gateway in redundant mode
Standalone	Select to take gateway out of redundant mode (operates on its own)
Redundant	Select to place gateway in redundant mode

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