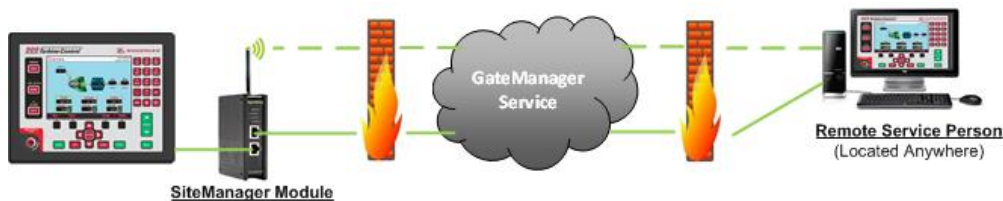


# Remote Access Program

## Enables Secure Remote Site Services

### Program Overview

Woodward's Remote Access Program allows remote communications with any Woodward device that has Ethernet communications anywhere in the world. This program uses a combination of a local SiteManager module, a hosted Woodward GateManager service and secure user licenses to provide secure and uninterrupted access to Woodward controls and devices located anywhere in the world.

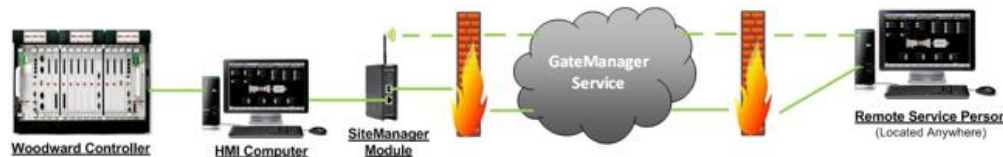


Woodward utilizes global industrial communications solutions provider Secomea based remote modules and cloud infrastructure to host Woodward's specific Remote Access Program. Woodward's Remote Access Program allows Woodward control and device users to benefit from the security and global communications infrastructure of Secomea and continue to use Woodward's standard service tool suite (RemoteView, AppManager, Control Assistant, ToolKit, etc.) to monitor and service Woodward product remotely.

Secomea was the first remote access solution in the world to be officially cyber secure certified. German security organization ProtectEM GmbH, performed Secomea's cyber security audit based on the following framework:

- Auditing security to processes according to NIST SP800-115 & ISECOM OSSTMM
- Security and Concept auditing based on BSI, ISA 99, and IEC 62443
- Component security auditing by individual component security analysis and stress testing
- System security auditing for end-to-end security protection

Alternatively, if a local computer or Human Machine Interface (HMI) is connected to a Woodward device, users can connect the SiteManager module to the computer/HMI and be able to access/monitor the same user interface screens and tools as a site operator or engineer.



- Compatible with Woodward devices (via Ethernet & Serial Communications)
- Built-in cyber security firewalls in accordance NIST, ISA/IEC, BSI and ISECOM agencies
- Centrally managed and secured via Woodward Gate Manager server
- Built-in Setup Assistant for intuitive first time network setup
- Automatic discovery of Ethernet devices for easy configuration
- Firewall friendly communication, - uses standard web protocols
- Allows remote use of Woodward's standard service tools:
  - RemoteView
  - AppManager
  - Control Assistant
  - ToolKit
- User-configurable email alerts for status monitoring and configurable I/O ports for custom alarms
- Supports cellular 3G/GPRS access via optional SIM card

## Site Manager

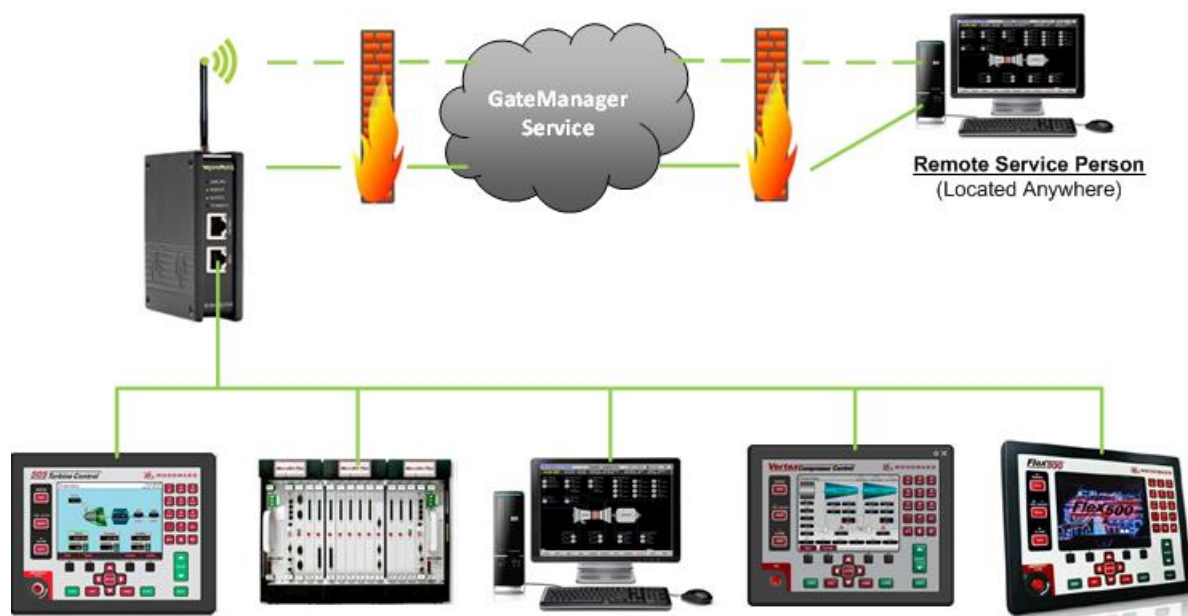
The SiteManager Module (SMM) is secure industrial communications module that must be installed locally and connected directly to the Woodward control/device via Ethernet communications. The SMM includes a special embedded secure license that can only be hosted by Woodward's GateManager Service program. As an added measure of security, this module includes an input for an enable/disable switch to be connected allowing users to easily enable/disable the module's communication ports as desired.

The SMM is a robust DIN rail mountable module that is designed for installation in a typical control panel or cabinet and provides remote access for on-demand monitoring, servicing, and programming of equipment. The SMM establishes access to the Internet through the firewall of an existing wired network infrastructure, or wirelessly via an integrated cellular 3G/GPRS modem. When the cellular 3G/GPRS modem function is utilized it is required that a sim card from a local/desired cellular data service provider be obtained and installed within the SMM. SMM configuration is performed via a provided user-friendly software configuration program.



**Secomea SiteManager Module**

The SiteManager module can be connected with up to five Woodward controllers or PCs at once minimizing interface networks and firewall tunnels.



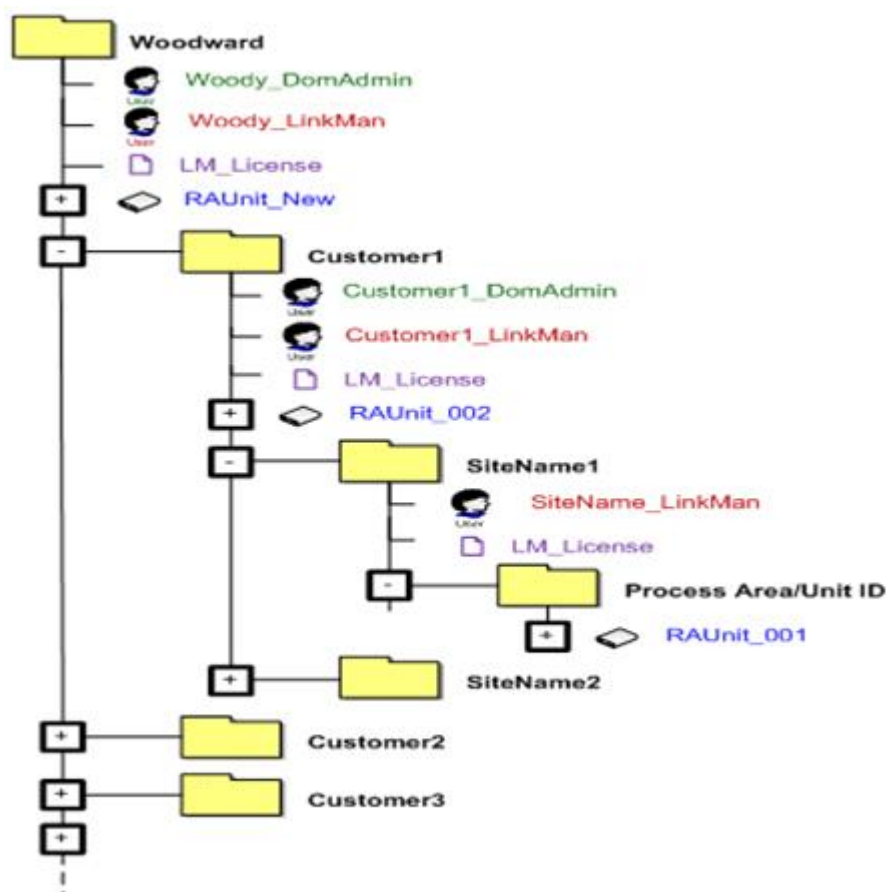
**SiteManager Setup/Configuration Program**

## GateManager

Woodward's GateManager Service is an externally hosted Cloud infrastructure which is used to manage all policies, security, user accounts, licenses, and connections. An assigned Woodward administration team manages the secure GateManager cloud infrastructure for all Woodward supplied remote access devices, user accounts, user domains, and licenses. The GateManager Service is used to administer the cloud infrastructure for the following:

- User Accounts (new and maintenance)
- Domains and sub-domains structure
- Registering & Configuring gateway devices
- Registering / assigning account access for new LinkManager users
- SiteManager Firmware Updates

This GateManager Service and related management tools is used primarily by the Woodward GateManager domain administrators. These administrators will be the primary contact for OEMs and end-users registering their SiteManager modules and assigning LinkManager account access for remote engineers. If desired, customers can purchase a special GateManager Customer Admin Subscription and manage/administrate access of their own fleet of customers/sites. With this subscription Woodward will assign a specific hosted domain to the respective customer allowing this customer to perform all GateManager administration functions (SiteManager registrations, assigning of user accounts, as well as the capability to add their own sub-domains). Refer to below list of subscription options.



**Typical GateManager Domain Structure Tree Overview**

Under the Woodward domain TREE, sub-domains can be created for customer accounts where they can manage and organize branches for specific jobsites. All elements must reside in a domain. A domain administrator account (GM) has management privileges at its domain and all sub-domains. They have the authority to create/move user accounts, licenses, and appliances to any sub-domain under their parent domain.

Domain	Activity	Domains	Accounts	Licenses	Appliances	Alerts	Actions	Messages	Relays	Reports	Audit
HIDE: <input type="checkbox"/> Joined Selected 0 of 2 accounts											
Login	Name	Email	Role	Auth	Last login	From					
<input type="checkbox"/>	ScottOceanak-GM	Scott Oceanak	Scott.Oceanak@woodward.com	Domain Administrator	X.509	2018-04-13 20:53:47	216.17.208.205				
<input type="checkbox"/>	ScottOceanak-LM	Scott Oceanak	Scott.Oceanak@woodward.com	LinkManager User	X.509	2018-04-12 21:45:15	216.17.208.205				

**Example view of Accounts by GateManager Administrator**

## LinkManager

LinkManager is a software program and license required by individuals that will be accessing and providing remote services or monitoring functions. LinkManager is the tool that will create virtual LAN adapter connections to SiteManager modules in the field and allow the remote user to interact with the related Woodward controls/devices in the same manner as they would if they had a direct connection to the Woodward control/device. LinkManager will provide the TCP/IP or COM port addresses for each of these devices, from any of your sites and SiteManager modules.

**Install LinkManager User Certificate**

Select a certificate file on your local computer, give it a descriptive name (alias) if you like, and enter the password for it below.

Note that login and remote access activity using this certificate is logged at the GateManager and may be subject to audit.

Certificate file:  Browse...

Alias:

Password:

Remember password

Associated Connection Setups:

default

Install Cancel About

**Initial LinkManager Dialog Box**

For a remote person to access and provide services to a site, they first need to have a GateManager administrator create a LinkManager account for them with the correct domain access privileges. When this completed, the GateManager cloud service will send an email with a link to the remote person with the LinkManager software program, user password and an X.509 user license. At this point all Woodward standard software tools are now available for use by the remote person by simply configuring the Woodward service tool to use the connection addresses shown for each controller.

Disconnect Logout Services Sniffer Chat

GM22.INS.Customers.Woodward.Sandbox

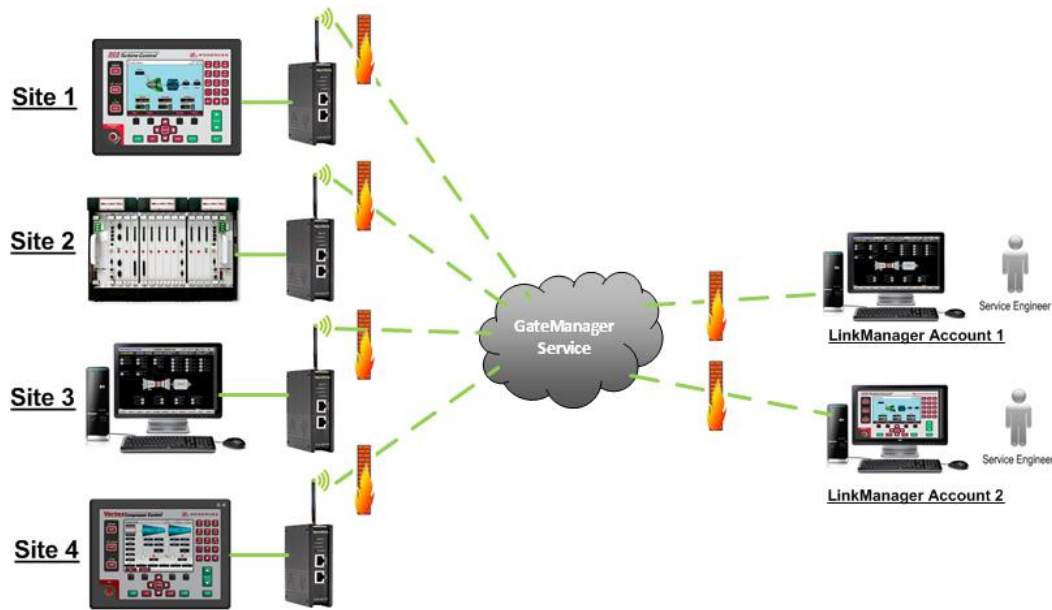
RA\_Unit\_2 Auto-reconnect:

Agent	Address	Status	Connects		Packets		Bytes	
			ok	fail	tx	rx	tx	rx
<input checked="" type="checkbox"/> WLC: 505_APP1 505_APP1	10.0.0.3	IDLE	0	0	0	0	0	0
<input checked="" type="checkbox"/> WLC: FLEX00038605 505XT	10.0.0.5	UP:1	1	0	115	115	537	1,938
<input checked="" type="checkbox"/> GW/SiteManager	10.0.0.1:80	IDLE	0	0	0	0	0	0

Round-trip time: Min: 149.9 ms, Avg: 161.8 ms, Max: 190.0 ms  Bandwidth: 128 KB/s Auto-tune:

**Example LinkManager User Page**

With the Woodward Remote Access Program, only one LinkManager Account License per domain can be used at a time. Thus if a large customer has several Woodward devices/sites to monitor or service and has multiple remote service people it is recommended that multiple LinkManager Licenses/Accounts to be purchased/used.



**Example Customer Fleet Where Multiple LinkManager Licenses May Be Required**

The following services, licenses, modules, and kits are available with this program:

**Table 1.1 – Available Modules, Subscriptions, and Licenses**

Part Number	Description
1711-1387	Site Manager Module (SMM-3G)
8928-5347	LinkManager License
Annual Service Fee	GateManager Setup & Admin by Woodward, 5 Licenses
Annual Service Fee	GateManager Setup & Admin by Woodward, 20 Licenses
Annual Service Fee	GateManager Setup & Admin by Woodward, >20 Licenses
Annual Service Fee	GateManager Setup by Woodward, Domain Admin by Customer, 5 Licenses
Annual Service Fee	GateManager Setup by Woodward, Domain Admin by Customer, 20 Licenses
Annual Service Fee	GateManager Setup by Woodward, Domain Admin by Customer, >20 Licenses (per license)
TBD	Starter Kit (1-SMM-3G, 1 LM License, 1y GateManager Setup & Admin by Woodward)



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