

**Documentation**

# Compass RTU Guide

## Version 3.x

# **OSSI**

**W228 N727 Westmound Dr  
Waukesha WI 53186 USA  
TEL: 262-522-1870  
FAX: 262-522-1872  
Ossi-usa.com**

# **Intelli-Site**

## **Security Management Software Compass RTU Guide**

PC Software RTU Interface Guide  
For Windows 7 SP1, 2008 R2 SP1, XP SP3 & 2003 SP2

Version 3.x  
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OSSI  
W228 N727 Westmound Dr  
Waukesha WI 53186  
TEL: 262-522-1870  
FAX: 262-522-1872

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## **Section 1 – Introduction**

This section describes the following:

- Overview
- Technical Support Assistance

### ***Overview***

Compass RTU (Receiver/Transmitter Unit) are the Intelli-Site software representations of an OSSI access control panel (Compass) or accessory board [IRM, IIM, IOM or RCO]. For purposes of this document, the term RTU is synonymous with access control panel or accessory board.

The OSSI RTU provides for user configuration of all aspects of the access control panel network including:

- Access control panel general configuration
- Communications Settings (in conjunction with Driver Services)
- Doors (Readers) configuration
- Input/Output and Specialized (Audio I/O) configuration

## ***Technical Support Assistance***

### **OSSI Headquarters**

W228 N727 Westmound Dr.

Waukesha WI 53186 USA

Tel: 262-522-1870      Fax: 262-522-1872

### **Technical Support**

Technical support is available via Telephone, Fax or Email. Contact OSSI Technical Support 8:00 AM to 5:00 PM Central Standard time. If calling after hours, please leave a detailed voice mail message, and someone will return your call as soon as possible.

E-Mail:      [support@ossi-usa.com](mailto:support@ossi-usa.com)

Fax:            262-522-1872 (Attention Technical Support)

Local:        262-522-1870

When calling, please be at the computer prepared to provide the following information:

- Product version number, found by selecting the **About**  button from the Intelli-Site Menu Application Bar.
- Product serial number used for registration.
- The type of computer being used including, operating system, processor type, speed, amount of memory, type of display, etc.
- Exact wording of any messages that appear on the screen.
- What was occurring when the problem was detected?
- What steps have been taken to reproduce the problem?

## Section 2 – Intelli-Site-Compass RTU Configuration

This section describes the following Design Mode RTU activities in Intelli-Site.

- Compass (IRM, IIM, IOM and RCO)
- Add a new Compass RTU
- Import an existing Compass RTU
- RTU Quick Configuration
- Compass Driver Service Settings

### ***IRM for Compass***

The **Intelligent Reader Module (IRM)** serves as the door controller for Compass integrated security management and access control systems. The IRM can also be configured for credential or biometric control of elevators, lighting and HVAC, as well as arming/disarming zones based upon card activity. All Intelligent Modules (IMs) use advanced circuit board design, a high speed Rabbit™ processor, and surface mount component technology. Compass hardware is unlike any other in the security industry.

Using combinations of only three modules - IRM (Reader Control), IIM (Input Monitoring) and IOM (Output Activation) - you can achieve nearly limitless capability in an extremely small footprint. Compass systems can accommodate a single entry or campus-wide enterprise application and everything in between. Systems can be easily and economically expanded as requirements change or grow.

## ***IIM for Compass***

The **Intelligent Input Module (IIM)** provides high density, configurable inputs for monitoring a host of sensors and systems including door contacts, motion detectors, glass break sensors devices, temperature alarms, fire alarm panels and any other unit that needs to be supervised and have their real-time status displayed.

## ***IOM for Compass***

The **Intelligent Output Module (IOM)** provides high density, fully programmable relay outputs for control of a variety of operations such as HVAC, lighting, locks and gates. The IOM interfaces with a wide range of other security and non-security related systems. Outputs can be activated or deactivated based upon the change of input status, time control function, or an operator command.

## ***RCO for Compass***

The **Reader Controlled Output (RCO)** Kit is used for elevator floor control, and much variety of other facility controls based upon cardholder privileges. The Kit is a packaged combination of one IRM (inputs outputs disabled), one IOM, one RS-485 sub-communication daughterboard and one RS-485 control daughterboard.

Each RCO kit provides control for sixteen floors, divided as needed, per two elevator cabs. Up to six additional output modules (IOM) can be added to a kit for elevator control up to 112 floors, divided as needed, per 2 cabs. The RCO Kit can also be used to interface with other systems such as HVAC and lighting control.

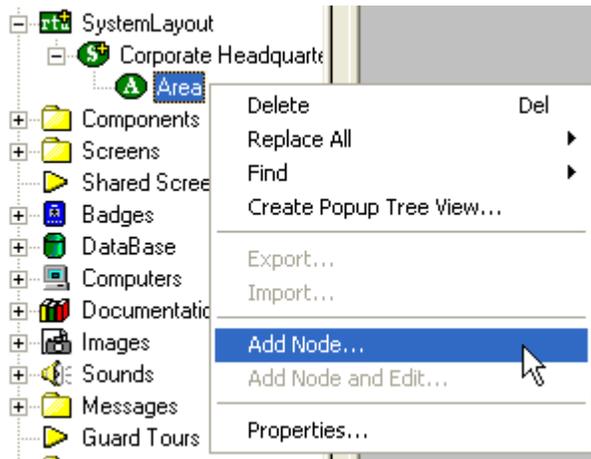
## Adding Compass RTU to the Intelli-Site Tree



The following section will describe how to add or import one or more Compass RTU nodes to the tree. All procedures described in this section are accomplished in Design Mode.

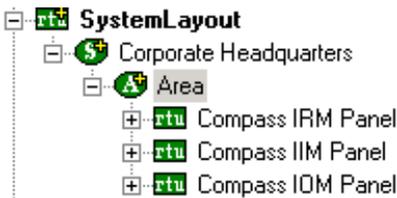
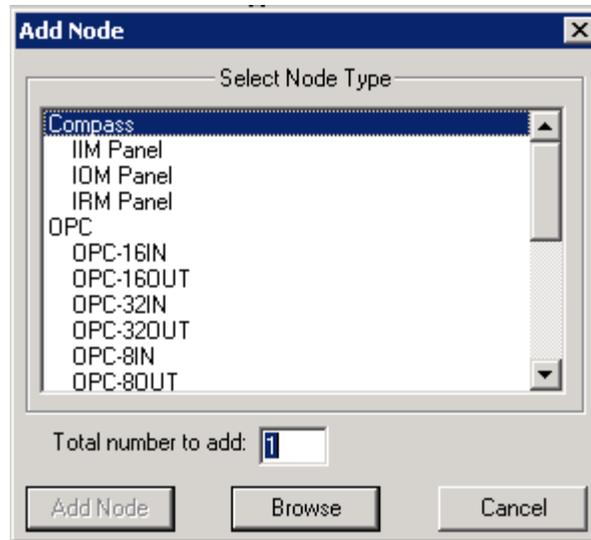
### Add an RTU – Procedure

1. Expand the System Layout Node and Right-Click on an Area. Select **Add Node...** from the Shortcut Menu as shown below:



2. Four basic Compass RTU types can be selected from the **Add Node** dialog: **Compass**. Select the RTU type then enter the number of panels you wish to add to the tree in the **Total number to add:** edit box. You may add multiple panels to an area.

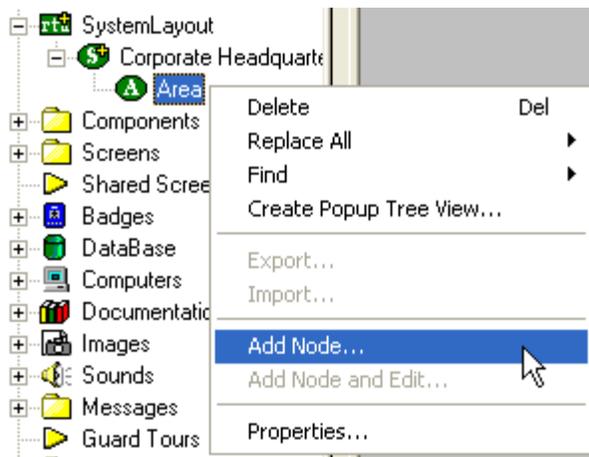
**Note:** The total number of RTUs that may be added must not exceed 255 for a given domain.



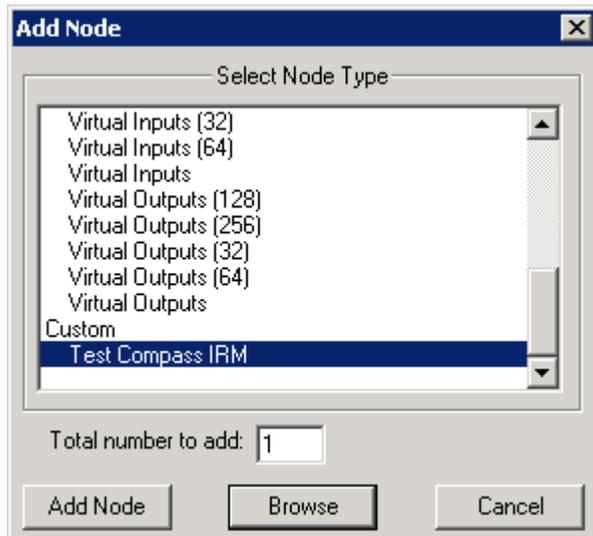
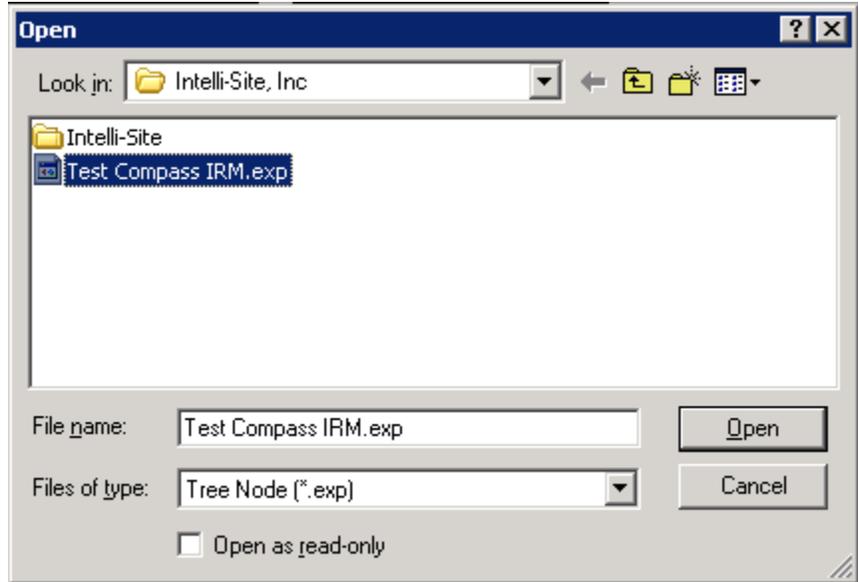
3. The RTU(s) will be added to the tree and the system level Text-To-Speech message **"Node Added"** will sound.

### Import an RTU – Procedure

1. Expand the System Layout Node and Right-Click on an Area. Select **Add Node...** from the Shortcut Menu as shown below:

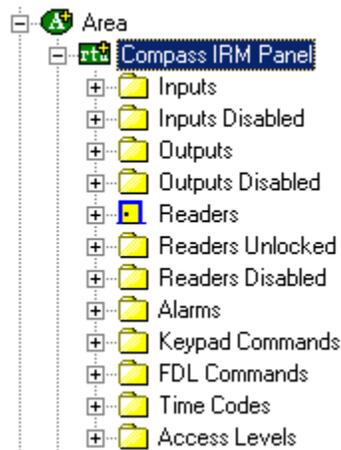


2. Select the **Browse** button on the **Add Node** dialog: A browse window will open. Browse to the appropriate location then select the RTU .exp file you wish to import and select the **Open** button. A new type (**Custom**) will be automatically added to the **Add Node** dialog and the imported .exp will be listed below the **Custom** type.



3. Select the imported RTU then enter the number of panels you wish to add to the tree in the **Total number to add:** edit box. You may add multiple panels to an area.

4. The RTU(s) will be added to the tree and the system level Text-To-Speech message **"Node Added"** will sound.
5. The functional characteristics of the IRM panels are configured in the RTU node. There are 11 sub-nodes, each containing property pages and sub-nodes that define how the elements operate. The illustration below shows the tree structure of a Compass RTU. The various panels (IRM, IIM, IOM and RCO) have the same structure, but some of the nodes will not be populated, and some of the basic RTU Node settings will not be applicable. These differences will be illustrated in the following paragraphs:



a. **Compass (IRM, IIM, IOM or RCO)**

**Node** - The main panel node allows the operator to set the control panel address, use the Quick Configuration options (applicable only to the Compass).

- b. **Inputs Sub-node** – Each RTU type have a specific number of input points in the Inputs sub-node, corresponding to the number of input points available on the panel: IRM panels have 8, IIM panels have 16, IOM have 4 and the RCO have 8. The Inputs subnode is used to configure the hardware settings and host program behavior of the input points. **Inputs Disabled Sub-nodes** are used to disable Inputs.
- c. **Outputs Sub-node** - Each RTU type have a specific number of input points in the Inputs sub-node, corresponding to the number of input points available on the panel: IRM panels have 4, IIM panels have 4, IOM have 16 and the RCO have 4. The Outputs subnode is used to configure the host program behavior of the output points. **Outputs Disabled Sub-nodes** are used to disable Outputs.
- d. **Readers Sub-node** – Only the Compass IRM RTU have Readers. There are 2 doors and each can be independently configured with regard to Reader Type and Reader Settings. The Doors subnode is used to configure the hardware settings and host program behavior of the Doors. **Readers Disabled Sub-nodes** are used to disable Readers. **Readers Unlocked Sub-nodes** are used to unlock Readers.

- e. **Alarms Node** - There are 6 Alarm points in the RTU. All points are predefined and reflect different types of hardware-related alarms. The Alarm points are not physical points on the RTU. The DLT programming of the RTU ties the inputs together with the alarm points to create alarms when all the conditions creating the alarm have been met.
- f. **Keypad Commands Node** - A keypad Command set is a set of function that the system is to execute when particular user enters a numeric keypad command at a reader. A keypad command set cause the system to lock or unlock a door turn on or turn off light fixtures, for examples, by enabling or disabling input devices or activating or deactivating output relays, as needed.
- g. **FDL Commands Node** - Fully Dynamic Linking is a method of dynamically linking causes to effects or events to action. This can be one to one, one to many, or many to many link. FDL dynamically links one or more actions to one or more causes.
- h. **Time Codes Node** - A time code is a set of one or more timeline and holiday group association.
- i. **Access Level Node** - Access Levels define the time periods when users are to be granted access at each reader in the system.

6. **Setting the RTU Address** - To associate the new database entry to the physical RTU, right click on the name of the new RTU. The folder's edit menu will open. Select Properties from the menu list. The RTU **Properties** Dialog window will open as shown below:

The screenshot shows the 'Area - Compass IRM Panel' dialog box. It has tabs for 'RTU', 'Card Config', 'DLT', and 'Notes/Comments'. The 'RTU' tab is active. The 'Name' field contains 'Compass IRM Panel' and the 'Access Level' is set to 'Level 1'. The 'RTU Setup' section includes 'Domain: 33', 'Net: 1', and 'Virtual Point: [3999] System RTU->IRM Panel Virt'. The 'Modem Setup' section has several fields for dial strings and retries, all set to 0. The 'Download' section has buttons for 'Settings', 'Cards', 'Complete', 'Reset', 'Auto-Detect', and 'Firmware'. The 'Memory Settings' section shows 'Memory Size: 640K', 'Cards: 25810', 'Buffered Alarms: 585', 'Buffered Commands: 256', and 'Buffered Transactions: 480'. The 'General' section has 'Daylight Savings Time Adjust' checked, 'Reader Type: Wiegand', and 'Long Access Time (seconds): 0'. The 'Firmware version' is 2.4.0.0. At the bottom are 'Ok', 'Cancel', and 'Apply' buttons.

- a. When the new RTU was added to the database, Intelli-Site automatically assigned the next available RTU Address. The address consists of 3 parts, a **Domain**, **Net**, and **Node** address. The Domain controls which Com Port Intelli-Site will use when communicating with the RTU. The Net and Node address are unique identifiers for the device on that domain. This address needs to be downloaded to the RTU to start proper communication.

## Compass IRM Panel – Property Page

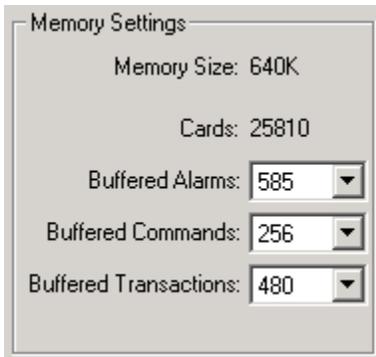
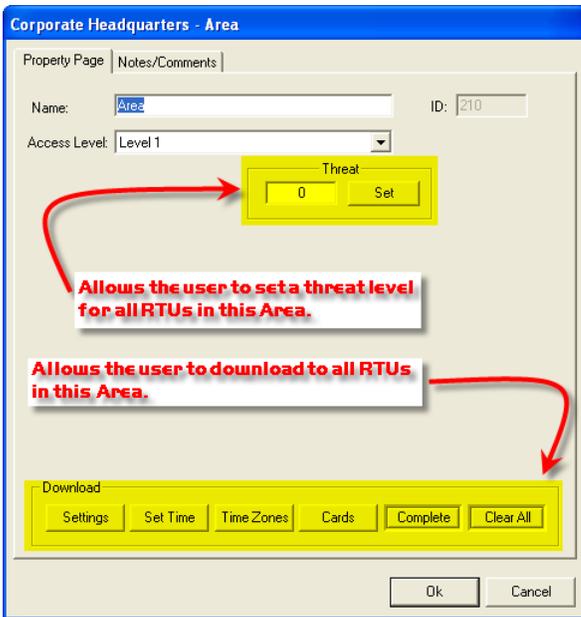
**Property Page Fields** – The following paragraphs describe each of the remaining Property Page Fields in detail (Read Field Details Below):

- b. **Name** - In the text field labeled **Name** on the **Property Page** tab, type the new RTU's file name. A name should have a close association with the location or function of the actual RTU. The name of the panel shows up in the alarm queue. The **Name** field can be edited to reflect the panel location or function as required.
- c. **ID** - System generated.
- d. **Access Level** – Access Level Field determines security level for this node as required for masking.
- e. **Retain** – Reserved for future use.
- f. **Domain, Net** - Determines the panel's location in the Intelli-Site network. All RTU Address's must be unique within the system. Intelli-Site will automatically

assign the next available number when adding panels (RTUs). There are three fields for entering the node address. These fields must be matched to the appropriate Driver settings in the Intelli-Site Driver Services program. See Example network topology diagram below.

- i. **Domain:** This field determines which port to use on the computer.
  - ii. **Net:** Lon-Works Network subnet - a numerical range 1-254
- g. **Event buffer delta (min.):** - The time set in the box determines whether or not buffered (offline) events are executed when received. Enter a number (in minutes) that will determine if an event is outside of the buffered range for host action. For example: if this field is set to 5, any event received from the panel that has a time stamp that is 5-minutes or older (than the system time) will be logged as a "buffered" event. The host will take no action for this event.
- h. **Auto Download valid cards:** - When a card is presented to a reader on this panel the host will check to see if the card is valid in the host database. If the card is valid the host will download the card record to the panel immediately.

- i. **Virtual Point:** - Check this box to “virtualize” the panel. When an RTU has been virtualized all server-to-driver services communications stop and will not be reinitiated until the RTU has been un-virtualized. Drag-and-drop a virtual I/O point into the drop field. This I/O point will be set high whenever the panel is virtualized.
- j. **Modem Setup** – Check this box and configure its settings when modem connection is used to indicate a dial-up connection.
- k. **Download** – Allows the user to download data to the panel. The user may download **Settings, Firmware, Auto-Detect, Cards, or Complete. Reset** all panel memory settings to the factory defaults (**Reset**). Downloads to multiple panels, as well as Threat Level Settings can also be accomplished from the **Area** property page as shown in the graphic screen shot. Threat Settings can be matched to card holders in Card Management Mode.



- i. **Memory Size:** - Memory Size label shows a memory module Value. For an Intelligent Reader Module (IRM) only, the Memory Size value identifies the size of the memory module available on the IRM, as follows:
  - i. **Small (128K)**, which can hold up to 3,204 ID card records when the Buffered Alarms box and Buffered Transactions box are set to the minimum setting.

- ii. **Large** (640K), which can hold up to 25,988 ID card records when the Buffered Alarms box and Buffered Transactions box are set to the minimum setting.

As Intelli-Site Server communicates with an Intelligent Module, data is transferred from the buffer to the Intelli-Site Server host. If the Intelligent Module is to operate online, the buffer size can be set to a low number.

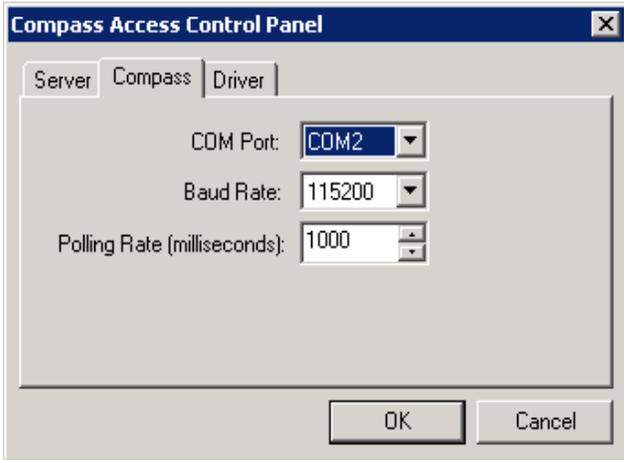
- m. **Cards:** - For an Intelligent Reader Module (IRM) only, the Cards value identifies the maximum number of ID card records that may be held in the IRM memory. As settings in the Buffered Alarms box, Buffered Commands box, and Buffered Transactions box are adjusted, the ID card record capacity automatically increases or decreases.
- n. **Buffered Alarms** - In the buffered Alarms box, type or select the maximum number of alarm transactions that can be buffered in the Intelligent Module. The minimum setting is 585.
- o. **Buffered Commands** - In the Buffered Commands box, type or select the maximum number of alarm transactions that can be buffered in the Intelligent Module. The minimum setting is 240.
- p. **Buffered Transactions** - In the Buffered Transactions box, type or select the maximum number of alarm transactions that can be buffered in the Intelligent Module. The minimum setting is 556.



- q. **Daylight Savings Time Adjust** – Use this check box to enable or disable the observance of Daylight Savings Time in the system. When the Daylight Savings Time Adjust is enabled, the system will automatically update the time throughout the system when the Daylight Savings Time begins and ends.
- r. **Reader Type** - In the Reader Type box, select the reader type. (REQUIRED) The reader type identifies the type of badge that can be used at a reader. Available reader types are the following:
- i. MagStripe - for badges that store data in magnetic particles contained in a plastic strip.
  - ii. Wiegand - for badges that store data in embedded wires.
- s. **Long Access Time (seconds)** – Use this procedure to add an Intelligent Reader Module (IRM) that controls two door contacts to meet American Disabilities Act (ADA) standards.
- t. **Firmware version:** - Firmware version label shows a Firmware version Value.
- u. **Custom DLT** - Custom DLT will show up when the RTU is using Custom DLT and will not show up when the RTU is using default DLT.

## Driver Service - Settings

**Driver Settings** – The following paragraphs describe the Intelli-Site specific settings required in the Driver (Driver Services).



- a. **Com Port** – Is a window to define a **COM Port** connection whichever one you are using to connect.
- b. **Baud Rate** – In the **Baud Rate** box, change the baud rate for data transmission on the communications port. When the Modem Setup box is checked operation requires a baud rate of 9600. A port used for Reader Controller Output (RCO) operation requires a baud rate of 9600. For all other ports, the recommended baud rate is 115200.
- c. **Polling Rate** – In the Polling Rate box, type or select (using up and down arrows) how often (in milliseconds) the system is to poll the Com connection. The recommended setting is 5 milliseconds. The minimum is 250 milliseconds; the maximum value is 5000 milliseconds.