

Light Commercial Building Solution



SYSTEM COMMUNICATION GUIDE

INTRODUCTION

When working with the Light Commercial Building Solution (LCBS) the System Communication Guide covers capabilities of both local and remote connections. It also covers the hardware and software limitations when making these connections and setting up the Guaranteed Receptor modes.

Hardware Compatibility

W7760A	Excel 15A Building Manager.
W7760C	Excel 15C Plant Controller.
W7750A,B	Excel 10 Constant Volume Air-Handling Enhanced, C Unit (CVAHU).
W7753A	Excel 10 Unit Ventilator (UV) Controller.
W7761A	Excel 10 Remote I/O (RIO) Device.
T7300F/Q7300H	Series 2000 Commercial Thermostats with Communicating Subbases.
S7760A	Command Display.
Q7760A	Serial LonTalk® Adapter SLTA-10, FTT-10.
Q7790A	Excel 10 RF Receiver.
VASA	CX203OPT VASA VFD.

Software Compatibility

Sites that are engineered with LONSPEC™ can be managed with LONSTATION™. (Please refer to the LCBS compatibility matrix.)

Modem Compatibility

Primary

3Com U.S. Robotics 56K External Fax modem V.90, follow the dip switch settings located in this document.

Secondary

BEST DATA Smart ONE® Series 56K Data Fax Modem External V.90, no dip switch settings necessary (from CompUSA).

Applicable Literature

Form Number	Title
62-0155	T7300F/Q7300H Series 2000 Commercial Thermostats and Communicating Subbases Installation Instructions.
63-4365	T7300F/Q7300H Series 2000 Commercial Thermostats and Communicating Subbases System Engineering Guide.
74-2699	Excel 10 W7761A Remote Input/Output Device System Engineering Guide.
74-2858	Q7740A,B FTT Repeater Specification Data.
74-2865	LonWorks Bus Wiring Guidelines.
74-2954	Q7760A SLTA-10 Serial LonTalk Adapter Specification Data.
74-2956	Excel 10 W7751B,D,F,H VAV II Controllers System Engineering
74-2958	Excel 10 W7750A B Constant Volume AHU Controller System Engineering Guide.
74-2964	Excel 10 W7753 Unit Ventilator Controller System Engineering Guide.
74-2969	Excel 15A W7760A Building Manager System Engineering Guide.
74-3069	Excel LONSTATION Specification Data.
74-3079	Excel 15 W7760C Plant Controller Installation Instructions and Checkout and Test
95-7504	Excel 10 W7751B,D,F VAV II Controllers Installation Instructions and Checkout and Test
95-7511	Q7760A SLTA-10 Serial LonTalk Adapter Installation Instructions.
95-7520	Excel 10 W7753 Unit Ventilator Controller Installation Instructions.
95-7521	Excel 10 W7750A,B Constant Volume AHU Controller Installation Instructions.
95-7539	Excel 10 W7761A Remote Input/Output Device Installation Instructions.
95-7553	Excel 10 W7751H Smart VAV Actuator Installation Instructions and Checkout
95-7555	Q7740A,B FTT Repeater Installation Instructions.
95-7561	Command Display Installation Instructions.
95-7565	Excel 15A Building Manager Installation Instructions.
95-7611	Excel 15 W7760C Plant Controller System Engineering



GUIDELINE LIMITATIONS FOR LCBS CONFIGURATIONS

LCBS LonWorks® Bus Limits

A channel (subnet) can have 60 nodes without a Repeater. When using a Repeater the LonWorks Bus can have up to 120 nodes. When counting nodes, each Excel 15A Building Manager, XL15C Plant Controller, CVAHU, VAV, Unit Ventilator, RF receiver, VASA VFD, RIO, Q7300 and Excel 15 Command Display counts as one node. Each Channel on a LonWorks Bus can have up to four Excel 15A Building Managers, and six SLTA-10s. The SLTA-10s do not count in the channel node count.

LCBS Device Limits

Each Excel 15A Building Manager has the following device limitations:

- A total of 20 Schedule assignments to either a XL15C Plant Controller loop, VAV, CVAHU, Unit Ventilator or Q7300 device.
- A total of 20 System alarms from either a XL15C Plant Controller loop, VAV, CVAHU, Unit Ventilator or Q7300 device.
- A total of 20 Analog alarms from either a XL15C Plant Controller loop, VAV, CVAHU, Unit Ventilator, device or Excel 15A analog inputs or runtime values.
- A total of six DDC Program alarms, one for each onboard control loop.
- A total of 20 Digital alarms from either a XL15C Plant Controller loop, VAV, CVAHU, Unit Ventilator or an Excel 15A start stop loop(s) or configured digital input(s).
- One Excel 15 Command Display.
- Three Excel 10 RIO Devices.

Each Excel 15A Command Display 2 has the following device limitations:

- A total of 270 logical objects can be associated with each XL15A Command Display. These 270 logical objects can be any combination of XL15A control loops or SS loops, XL15C control loops, SS loops and logic loops, CVAHU, Unit Ventilator, RIO, VAV II, VASA VFD, or Q7300 device).
- Four Excel 15A Building Managers can be associated at a time (to display, connect a point to this Excel 15A).

Limits for the CVAHU, Unit Ventilator, VAV II, VASA VFD, RIO, or Q7300 Devices:

- Devices can be added until the node limit 60 (120 with a repeater) is reached. Be sure to adhere to the Excel 15A Building Manager Schedule assignments and the device limitations for the Excel 15 Command Display.
- One Q7300 can assign Schedules to four other devices. These devices can be XL15A Building Manager loops (Control loop and SS loop), XL15C Plant Controller loops (Control loop and SS loop), CVAHU, VAV II, Unit Ventilator or other Q7300s.

NOTE: A Q7300 schedule only has two Occupied and two Unoccupied states per day. There are no Temporary, Exception/Holiday or Standby Schedules.

Table 1 shows an example of a channel that is configured at the 120 node limit.

Table 1. Channel Configured At The 120 Node Limit.

Nodes	Devices
4	Excel 15A Building Managers.
80	CVAHU, Unit Ventilator, VAV II Q7300, VASA VFD, RIO (Associated with XL15C Plant Controller), or Excel 15C Plant Controller control or start/stop loops with <i>Schedule Assign</i> from Excel 15A.
4	Excel 15A Command Display.
12	RIO (Associated with XL15A Building Managers).
20	CVAHU, Unit Ventilator, VAV II, Q7300, VASA VFD, RIO (Associated with XL15C Plant Controller), or Excel 15C Plant Controller without <i>Schedule Assign</i> from Excel 15A.
120	Node limit.

NOTES:

- To exceed the 60 node limit on a channel, install a Repeater on the network.
- A channel can have one occurrence of Direct connect for LONSPEC and one occurrence of Direct connect for LONSTATION. The user can have a Direct connect for LONSPEC and LONSTATION, but can not have two Direct connects with LONSPEC and two Direct connects with LONSTATION.
- Use LONSPEC to configure SLTA-10s using the Commission SLTA option. This option can be used to commission both direct connected SLTA or SLTA connected over a modem.

Using Refer Points for Schedules

To review and modify all LonWorks network project bindings, use Refer Points.

BINDING OF NETWORK TIME

All binding of Network Time is automatically completed when a Network Time Master is selected. To select a Network Time Master, use the Excel 15A General configuration screen and select the appropriate check box.

NOTE: A Q7300 can be a Time Master only for other Q7300s. A Q7300 cannot be a Time Master of Excel 15As.

This operation must be performed manually through Refer Points by binding the Time Out from one Q7300 to the Time In of another device (e.g. XL10 or XL15). NOTE; Using a Q7300 as the Time Master only gives two Occupied and two Unoccupied states per day. There are no Temporary or Exception/Holiday Schedules.

BINDING OF NETWORK OUTDOOR AIR TEMPERATURE

Network Outdoor Air Temperature (Outdoor Air Temperature Out) binding is not an automatic operation. There can only be one Outdoor Air Temperature Out sensor used with a LonWorks network. First determine which device will be the source for the Outdoor Air Temperature Out sensor. Then use Refer Points to send the sensors output to all other controllers on the LonWorks network. The controller Source/Destination Points (Outdoor Temperature Output/Outdoor Temperature Input) are shown in Table 2.

Table 2. Controller Source and Destination Temperature Points.

Controller	Source Point Outdoor Temperature Output	Destination Point Outdoor Temperature Input
Excel 15A	Outdoor Air Temperature Out	Outdoor Air Temperature In
Excel 15C	Od Temp Output	Od Temp In
Q7300	—	—
CVAHU	OdTempOut	OdTempIn
Unit Ventilator	SrcOaTemp	DestOaTemp
RIO	Use AI 1 – AI 4	—

BINDING OF NETWORK OUTDOOR AIR HUMIDITY

Network Outdoor Air Humidity (OdHum) binding is not an automatic operation. There can only be one OdHum sensor used with a LonWorks network. First determine which device will be the source for the OdHum sensor. Then use Refer Points to send the sensors output to all other controllers on the LonWorks network. The controller Source/Destination Points (Outdoor Humidity Output/Outdoor Humidity Input) are shown in Table 3.

Table 3. Controller Source/Destination Humidity Points.

Controller	Source Point Outdoor Humidity Output	Destination Point Outdoor Humidity Input
Excel 15A	Outdoor Air Humidity Out	Outdoor Air Humidity In
Excel 15C	Od Hum Output	Od Hum In
Q7300	—	—
CVAHU	OdHumOut	OdHumIn
Unit Ventilator	SrcOaHum	DestOaHum
RIO	Use AI 5 or AI 6	—

TIME OF DAY SCHEDULE BINDING

Use the Excel 15A Schedule Assign function in LONSPEC as the method of associating schedules between controllers. This function moves devices from the Unscheduled Controllers window to the Scheduled Controllers windows. It also displays the schedule assignments of each device in the Command Display as well as the LONSTATION schedules screen. Up to 20 devices can be assigned through the Excel 15A schedule assign tab.

The controller Source/Destination Points (Time of Day Schedule Output/ Time of Day Schedule Input) are shown in Table 4.

Table 4. Controller Source and Destination Time Of Day Schedule Points.

Controller	Source Point Time Of Day Schedule Output	Destination Point Time Of Day Schedule Input
Excel 15A	Time of Day event (1 to 20)	—
Q7300	Time of Day Out (1 to 4)	Occupancy Schedule In
CVAHU	—	Time Of Day In
XL15C	—	Time of Day Event
Unit Ventilator	—	SchedOcc
RIO	—	—

To bind an Excel 15A schedule to multiple controllers and objects (which includes SS loop and CT Loops of XL15C):

1. Assign each TOD Event to one of eight schedules using the Schedule Assign.

NOTE: TOD Events are assigned in the order selected on the Schedule Assign screen. TOD Event 1 will have the same schedule as the first controller assigned in the Schedule Assign tab. Also the TOD Event 2 will have the same schedule as the second controller.

2. If all 20 Schedule Assignments are filled and there are controllers unassociated with a schedule, bind these by using Refer Points.

NOTE: If binding is done using Refer Points, these will not show up on reports.

3. Bind the Time of Day Schedule Output to the corresponding Time of Day Schedule Input of the destination controller.
4. The Q7300 has one schedule that can be associated to four devices using the Schedule Assign function, enabling the Time of Day Out Points. If there are more controllers, use Refer Points to assign these.

NOTE: All four Time of Day Outs will have the same schedule assigned to them so any of these points can be used.

For example (in a warehouse where only one T7300 is monitoring the space with six CVAHUs) the first four CVAHUs are assigned using the Schedule Assign function. The final two are assigned using Refer Points.

Communicating with LonWorks Network

Local or Remote SLTA-10, (FTT-10)

LOCAL COMMUNICATIONS

Direct Connection (Fig. 1)

1. Change the DIP switch settings on the SLTA-10 to:
 - a. Switch 5 up (1).
 - b. Switches 1, 2, 3, 4, 6, 7 and 8 down (0).

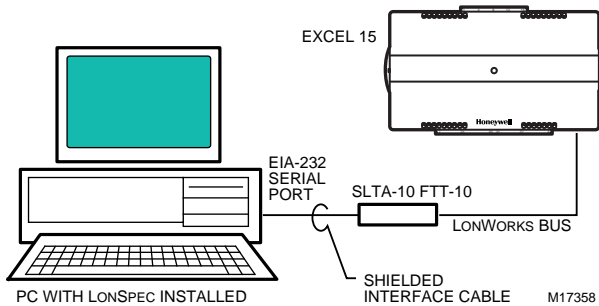


Fig. 1. Direct connection of a PC to a SLTA-10.

2. Use one of the following to power the SLTA-10:
 - a. A transformer with a 9 Vdc 500 mA output that connects to the female power input barrel connector.
 - b. A 24 Vac transformer connected to the black screw terminal block.
3. Using a standard DB9 female to DB9 male cable, connect the serial EIA-232 port on the PC to the EIA-232 port on the SLTA-10.
4. Using the orange screw terminal block, connect the SLTA-10 to the LonWorks network. Refer to the LonWorks Bus Wiring Guidelines, form 74-2865.

SLTA-10 Checkout Procedure

1. Startup LONSPEC.
2. Create a new project (Ctrl + N).
3. Enter a Project name.
4. Create a new Network (Alt + W).
5. Enter a Network name.
6. Connect to the site (F3).

NOTE: When LONSPEC is connected to the site, the status bar in the lower right corner will state **ONLINE** and the connection icon will change to yellow.

If LONSPEC cannot find the SLTA-10 or fails to connect to the site, *Unable to connect to the network* displays.

7. If this message is displayed:
 - a. Check all SLTA-10 connections.
 - b. Make sure the correct COM Port is selected.
 - c. Remove power from the SLTA-10 and wait for 30 seconds.
 - d. Reapply power to the SLTA-10.
 - e. Click OK to clear the message.
 - f. The title bar displays (user) Not Connected.
 - g. Retry connecting to the site (see step 2 through 6 in the SLTA-10 Checkout Procedure).
 - h. LONSPEC searches for the SLTA-10.

- i. If connection fails again, the SLTA-10 could be faulty.

NOTE: If a working SLTA-10 is available, try to connect using it to determine if the original SLTA-10 was faulty.

REMOTE COMMUNICATIONS

Connection via a telephone line

Use US Robotics 56K modems that comply with V.90 protocol:

1. Use the following modem switch settings:
 - a. Switches 3, 4 and 8 are down.
 - b. Switches 1, 2, 5, 6 and 7 are up.
2. Change the DIP switch settings on the SLTA-10 used for Remote Communications to:
 - a. Switch 2, 6 and 8 up (1).
 - b. Switches 1, 3, 4, 5, and 7 down (0).

NOTE: Do not place the SLTA-10 in autobaud mode.

See Fig. 2 for Remote Connections.

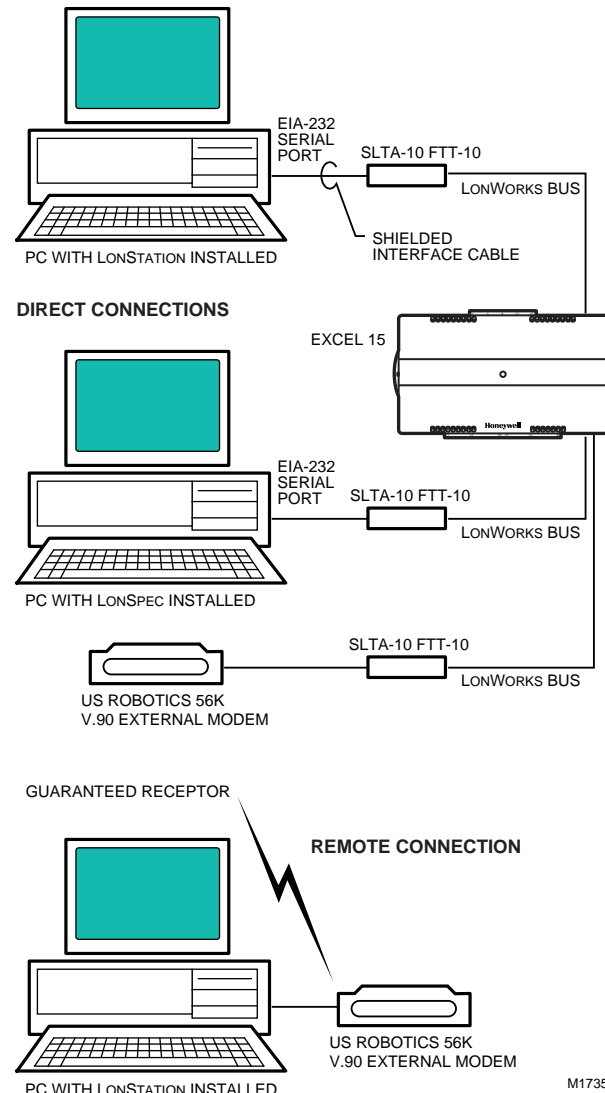


Fig. 2. Remote Connection.

3. Use one of the following to power the SLTA-10:
 - a. A transformer with a 9Vdc 500 mA output that connects to the female power input barrel connector.
 - b. A 24 Vac transformer connected to the black screw terminal block.
4. Connect the on site SLTA-10 to the on site modem using the special null modem cable, Honeywell part number 32002517-001.
5. Connect the serial (EIA-232) port of the PC (which has either LONSPEC or LONSTATION installed) to the modem with a standard 9 to 25 pin null modem cable.
6. For LONSPEC settings:
 - a. Startup LONSPEC.
 - b. Create a new project (Ctrl + N).
 - c. Enter a Project name.
 - d. Create a new Network (Alt + W).
 - e. Enter an Network name.
 - f. Enter a telephone number.
 - g. Create a new Subnet (Alt + S).
 - h. Enter a Subnet name.

Modem Connection Checkout Procedure for LONSPEC

1. Select Communication Settings (Ctrl + C).
2. Select Modem and the COM port that the modem is connected to.
3. Verify the Baud Rate (default is 38400).
4. Connect to the site (F3). LONSPEC dials out and connects to the site.
5. If LONSPEC cannot connect to the Network:
 - a. It displays *Unable to connect to the network*.
 - b. Wait for 30 seconds.
 - c. Verify that all communication settings are correct.
 - d. Check all connections.
 - e. Retry connecting to the site.
 - f. If LONSPEC fails a second time, contact your distributor.
6. For LONSTATION settings:
 - a. Startup LONSTATION. The LONSTATION automatically detects the healthy SLTA's and Modems connected to the PC.
 - b. Enter the COM Port Assignment window, under the Configure menu and select the appropriate port (Applicable only with LONSTATION version 3x and above).

- c. Enter the Site Management screen by clicking the Site icon under Services menu on the left of the screen.
- d. Create a new site:
 - (1) Site name.
 - (2) Site ID. (Site and workstation IDs should match the information that was entered in LONSPEC.)
7. Click OK.

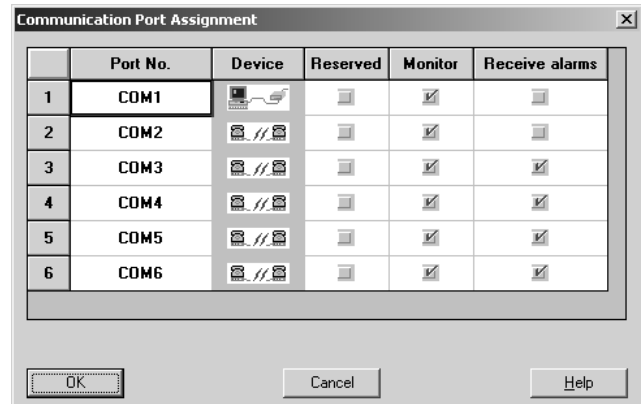


Fig. 3. LONSTATION Settings

Modem Connection Checkout Procedure for LONSTATION

1. Connect to the site (under Site Management).
2. Choose the appropriate COM Port used (COM 1 is default).
3. Set the Baud Rate to 38400 (default).
4. LONSTATION dials out and connects to the site.
5. If the connection is not made:
 - a. Check the modem connection and settings.
 - b. Reconnect to the site again.

GUARANTEED RECEPTOR MODE

Definitions

Alarm events are detected by Alarm Generator objects (Excel 15As) either by comparing value updates to alarm limits, or on receipt of system alarms. If alarms are suppressed for a control loop attribute, no alarm activities are performed. Based on the alarms defined, Routing Priority of the alarm causes actions to occur as shown in Tables 5 and 6.

Table 5. Action ID And Description.

Routing Priority	Description
1. Dial Out, Log & Local Alarm	<ul style="list-style-type: none"> • LONSTATION will receive the alarm in the local mode as well as remote mode. • Reading the alarm through the alarm browse of LONSTATION. • Reading the alarm log of XL15A through LONSPEC. • Reading the alarm through the Command Display.
2. Dial out and Log.	<ul style="list-style-type: none"> • LONSTATION will receive the alarm in the local mode as well as remote mode. • Reading the alarm through the alarm browse of LONSTATION. • Reading the alarm log of XL15A through LONSPEC. • Command Display should not receive any alarms.
3. Local Alarm and Log	<ul style="list-style-type: none"> • Reading the alarm through the alarm browse of LONSTATION. • Reading the alarm log of XL15A through LONSPEC. • Reading the alarm through the Command Display.
4. Log	<ul style="list-style-type: none"> • Reading the alarm through the alarm browse of LONSTATION. • Reading the alarm log of XL15A through LONSPEC.
5. Do Nothing	No alarms are generated.

Generate Local Bus Alarm

The XL15A checks to see whether a guaranteed receptor is specified. If the Guaranteed Receptor is local, then the Alarm Generator initiates a guaranteed file transfer request to the log file generator that transfers the new alarms for the local LONSTATION. If the Guaranteed Receptor is remote, the case is similar to the local, but the file transfers the new alarms for the remote LONSTATION.

Initiate Dial out and Generate Dial up Alarm

If the alarm buffer reaches the threshold or if an alarm has occurred with a Routing Priority is either Dial Out, Log & Local Alarm or Dial out and Log the Alarm Generator initiates a dial out as programmed during Alarm and Dial up setup. The Alarm Generator determines this from the dial out configuration. When a connection with LONSTATION has been established, the Excel 15A places a request with the Log File Generator for a guaranteed file transfer to the LONSTATION. In the event that a connection has already been established at the time of the alarm, then a file transfer is initiated by the Excel 15A immediately. In the event of two or more Excel 15As trying to report alarms from the same site, the first alarm makes the logical connection and transfers the alarm file. The other alarms get a busy response until the first alarm is complete, then these alarms initiate their own file transfer.

Setting Up the Guaranteed Receptor Mode

Definitions

A guaranteed receptor is either a local or remote location that uses LONSTATION as workstation. This means that before an alarm is deleted from the buffer, it is sent to a configured guaranteed receptor. If a connection cannot be made with any guaranteed receptor and the buffer exceeds the 50 unsent alarm limit, all succeeding alarms go into the back-up alarm buffer.

When a site does not have a configured guaranteed receptor only the most recent 50 alarms are retained, so there is no alarm backup in this mode. The alarm transfer is automatically initiated to the guaranteed receptor when an alarm Routing priority of 1 or 2 has occurred (Refer Table 5).

Also, once the alarm buffer in the Excel 15A reaches 50 alarms there are always 50 alarms located there. The sent alarms remain in the alarm buffer. When new alarms arrive, the oldest alarms are removed from the alarm buffer using the first in first out method. New alarms are added to the top of the buffer.

Once the Excel 15A receives an alarm with the routing priority of 1 or 2 it initiates the dial out procedure. This procedure is configured in the LONSPEC. The Excel 15A attempts to transfer all unsent alarms to the guaranteed receptor. The Excel 15A continues trying to contact the guaranteed receptor until it is successful. It then sends all unsent alarms. If the Excel 15A does not receive any alarms with a routing priority of 1 or 2 prior to reaching its buffer threshold limit, it attempts to send all unsent alarms. The default threshold limit is 80 percent of a full buffer. This means that since the buffer has 50 alarms, it starts the dial out sequence when it reaches 40 alarms.

The Excel 15A continues to accumulate alarms until the dialout to the guaranteed receptor is successful. Alarms generated after the alarm buffer is full are saved until all the alarms have been sent to the guaranteed receptor.

NOTE: There is one exception. All alarms received after the buffer is full contain only minimal information. Only the type of alarm is known and the time is unknown.

There are two Guaranteed Receptor modes that cause the Excel 15A to initiate a transfer of the Alarm History Log file:

1. Remote; (The Excel 15A dials out to LONSTATION over a public switched telephone network.)
2. Local; (The Excel 15A sends it to LONSTATION directly over the LonWorks network.)

In addition, a Non-Guaranteed Receptor mode (Command Display only) is provided. This consists of a small network with only a Command Display and no dialing capabilities. In this case, the Excel 15As Alarm History Log file contains only the last 50 records. Any older record will be overwritten.

The following steps are required to set up an LCBS site for Remote or Local Guaranteed Receptors for alarm:

1. Placing the SLTA-10 on the network for Remote Guaranteed Receptor.
2. Configuration of Alarms and Setting of the Routing Priority in XL15a Controller using LONSPEC.
3. Entering the phone numbers in the directory with the DIAL tab.

NOTE: No directory entry is needed for direct connection.

4. Selecting the SLTA-10, schedule, etc. in the Dial out Sites under the DIAL Tab.

5. Configure and Commission the SLTA-10 for Remote Dialing.

Step 1. Placing the SLTA-10 on the network for Remote Guaranteed Receptor

Add an SLTA by dragging and dropping the SLTA-10 icon (see Fig. 4) on the network. Use this SLTA-10 for dialing out. LONSPEC asks the user to whether to commission the SLTA-10 in a local mode (connected to PC) or in remote mode (not connected to the PC). Select the remote mode option while commissioning the SLTA-10. See Step 5.

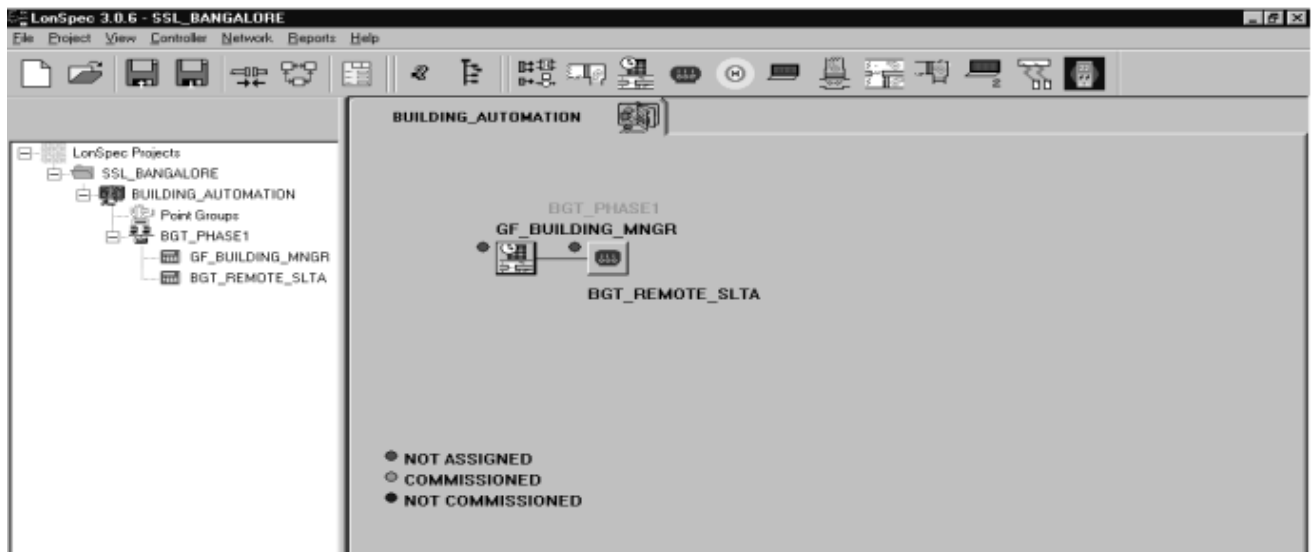


Fig. 4. LONSPEC Project View.

Step 2. Configuration of Alarms and Setting of the Routing Priority

Any of the Excel 15A system alarms, the 20 Excel 10 system alarms, the 20 Analog alarms and the 20 Digital alarms can be configured for the Guaranteed Receptor type by choosing the Routing Priority of DIALOUT. For either the Remote or the direct case, the user has to choose the Routing Priority as DIALOUT for XL15a to send alarms to LONSTATION.

The Excel 15A attempts to deliver the Alarm History Log file to the Guaranteed Receptor when the buffer reaches 80 percent full (default setpoint, see sample).

A sample of choosing the Routing Priority is shown in Fig. 5. Make sure that the Routing Priority is DIALOUT & LOG or DIALOUT, LOG & LOCAL ALARM.

Alarm Priority, at this time, is a Don't Care situation. However, In LONSTATION, this is the number the user sees as the priority when the Guaranteed Receptor receives the alarm. The unacknowledged alarm buffer sorts the alarms based on priority (0 is the highest) and time.

The image shows a software window titled "Configuration Screen For GF_BUILDING_MNGR". It has a sidebar with icons for various system components. The main area is divided into tabs: "Alarms", "DLC", and "General Dialing Information". The "Alarms" tab is active, showing configuration for an analog alarm. On the left, there are radio buttons for "DDC Program Alarm", "Analog Alarm" (which is selected), "Digital Alarm", "General Alarm", and "Alarm Mapping". To the right, there are dropdown menus for "Select Alarm" (set to "ANALOG_ALARM_1") and "Selected Analog Value" (set to "GF_Space_Temp"). Below these are "Trigger Value" radio buttons for "False" and "True". A "Delay" section contains input fields for "Pre Alarm" (60) and "Post Alarm" (60), both in seconds. A "Priority" section includes a "Routing Priority" dropdown (set to "DIALOUT, LOG & LOCAL ALARM"), an "AlarmPriority" spinner (set to 1), and a "Suppress Alarm" checkbox. At the bottom, a "Limits" section has four input fields: "High Limit" (80), "Low Limit" (65), "High Warning" (78), and "Low Warning" (67), all in degrees Fahrenheit. At the very bottom are "OK", "Cancel", "Apply", and "Help" buttons.

Fig. 5. Excel 15A Analog Alarm Configuration Screen.

Step 3. Writing phone numbers in the directory with the DIAL tab. No directory entry needed for direct connection

In the General Dialing Information, see Fig. 6.

CONFIGURE

The Maximum Connect Times default is 0 Min.

Do not change. This lets the workstation, such as LONSTATION, maintain the responsibility of disconnecting the session. (See SLTA-10 configuration, hang up timer.)

Configuration Screen For GF_BUILDING_MNGR

Alarms | DLC | **General Dialing Information**

Dial Out Parameters

Maximum Connect Time Min

DialOut Time Min

Site Dialout Time Min

Number Of Redials

Number Of Loops

Dialup Initiator

Dialout Sites

Report Status Every Days

Dial In Parameters

Maximum Connect Time Min

Telephone Directory Dialout Sites

OK Cancel Apply Help

Fig. 6. General Dialing Information.

Definitions

DIAL OUT PARAMETERS

Maximum Transfer Time

This timer starts when the Excel 15A starts the dial out operation for the file transfer and gets decremented every minute. Decrementing stops when the count reaches zero. If the file transfer is completed and a logical disconnection is not made by the workstation, then the Excel 15A uses this timer to disconnect it. The Maximum Connect Time is provided as a way to save the telephone bill from long connect times. If users are concerned about the telephone bill, they can pick a number. The best way to limit the connect time is through the hang up timer in the SLTA-10 that is explained later in this document.

Time Between Redials

Time between the redials: If a user calls a number and is not able to get through, the redialing takes place after this amount of time. Minimum time is three minutes.

Time to Switch Between Workstations

This is the wait time to switch from one site to another.

Number of Redials

The maximum number of times the Excel 15A will attempt to successfully connect to the Primary telephone number to deliver the Alarm History Log file before switching to the Backup telephone number. If there is no Backup telephone specified, then the Excel 15A will continue to connect to the primary telephone number.

Number of Loops

The user can select the number of loops that the Excel 15A will attempt to successfully delivery the alarm history log file. That is if the Excel 15A is unsuccessful in connecting to the primary and then the backup telephone numbers, the Excel 15A will loop back through the primary and backup phone numbers (for the number of loops) until the alarm history log is successfully transferred. If the number of loops is set to "0", the number of loops is considered to be infinite.

DIAL IN PARAMETERS

Maximum Connect Time

When a workstation dials in to an Excel 15A, it is possible to limit the connection time. It is best to let the workstation break the connection, leaving it at (0) means the Excel 15A never disconnects it.

DIAL UP INITIATOR

Dial Out Workstations

The user can select up to three dial out workstations known as Primary, Backup 1 and Backup 2. When the remote site receives a DIALOUT alarm, it dials to the Primary workstation. If it fails to connect with the Primary workstation (after the configured number of retries) it attempts to connect with the Backup 1 workstation. If it fails to connect with the Backup 1 workstation (after the configured number of retries) it attempts to connect with the Backup 2 workstation. If it fails to connect with the Backup 2 workstation (after the configured number of retries), it will attempt to dial the Primary workstation. It will continue this process to successfully transfer the alarm history log until it reaches the configured number of Loops.

Report Status

Report status lets the user select the interval (number of days) that the Excel 15A uses to initiate a status dial out at midnight. This is used to indicate that the Excel 15A is alive. If there is a valid transfer of an alarm before the status dial out, then the interval is restarted. This functionality is not supported by the workstation in the current release.

Telephone Directory

The user can enter up to ten telephone numbers into the telephone directory. The Dial Out sites shown in the following sections use these telephone numbers. The password is reserved for future use. See Fig. 7.

Fig. 7. Telephone Directory.

Step 4. Selecting the SLTA-10, Schedule, etc. in the Dial Out Sites Under the DIAL Tab.

1. Under Work Station, select alarm reporting and a Work Station Type of Remote.
2. Select the SLTA used for the remote dial up. Dialing occurs in two methods:
 - a. No Dialing Schedule; Dial out to a maximum of three workstations (Primary, Backup 1 and Backup 2). This is the default available through LONSPEC.
 - b. Dialing Schedule 1; In the selection box, the user chooses up to three time periods in which to make the telephone call. The user can enter up to three telephone numbers for each period.
3. If the user chooses the Work Station Type of Local for ALARM, none of these applies. LONSPEC automatically places the correct configuration in to the Excel 15A.

NOTE: Whenever a local LONSTATION is connected to the network, it is detected by the Excel 15A for alarm delivery.

On the top left corner for Work Station, the user can choose STATUS_1 through STATUS_3 (ALARM is the default) in the list box. The user can pick up to three telephone numbers for each site. There is no schedule associated with it. The Status is always reported at midnight at the interval (in days) defined in the very first DIAL screen. See Fig. 8 and 9.

This functionality is not supported by the workstation in the current release.

Dialout Site Properties

Work Station: **ALARM**

Work Station Type:
☒ Remote
☐ Local
☐ No Guaranteed Receptor

SLTA/PCLTA:
BGT_REMOTE_SLT

Dialing Schedule:
No Dialing Schedule

Time Period	Directory Entry	Primary	Backup 1	Backup 2	Work Station ID
Time Period 1 [0][][0][]	Directory_Entry0				255
	Directory_Entry2				100
	Directory_Entry3				75
Time Period 2 [0][][0][]	NO_CALL				
	NO_CALL				
	NO_CALL				
Time Period 3 [0][][0][]	NO_CALL				
	NO_CALL				
	NO_CALL				

OK Cancel Help

Fig. 8. Dial out sites without schedule.

Fig. 9. Dialing Schedule.

DIAL SCHEDULE

Site	Phone Numbers
Primary (First)	1-415-555-1234
Backup 1 (Second)	1-415-555-2345
Backup 2 (Third)	1-415-555-3456

A configuration that uses No Dialing Schedule (see Fig. 8) only uses telephone numbers found in time period 1 and anytime in a 24 hour period uses those telephone numbers.

Dialing Schedule 1 (Fig. 9) can have up to 9 telephone numbers. This has an exception, if the time is between 0800 and 1700 (8 am and 5 pm) the Excel 15A dials only the first 3 numbers. From 1700 and 2000 (5 pm and 8 pm) it dials the telephone numbers found in time period 2. Likewise, from 2000 until 0800 (8 pm to 8 am) the following day it only dials to the numbers found in time period 3.

The Dialing Schedule uses the Telephone directory entries found in Fig. 7. This is found on the General Dialing Information tab of the Excel 15A. Workstation ID must match the Workstation ID entered in LonStation (Workstation ID can be changed on LonStation through the menu option File/Option).

Dialing starts with the Primary Telephone Number. If connection fails, it redials four times (see Fig. 5 Number of Redials.) In between each redial it waits three minutes (Dial Out Time.) Then it proceeds to Backup 1 and repeats the process and finally it proceeds to Backup 2 and repeats the process.

If connection was still not successful, the Number of Loops configuration sends it back to the Primary telephone number and repeats the full cycle.

Step 5. Configure and Commission the SLTA-10 for Remote Dialing

CONFIGURING THE SLTA-10 FOR REMOTE DIALING

Enter the Application Selection screen, see Fig. 10, and set the Hang-up Timer. This is the amount of time of inactivity between the workstation and the controller before disconnection. LONSPEC supports writing the Hang-up Timer into the SLTA-10. The default value of the Hang-up Timer is 15 minutes with no password chosen. The user can change the Hang-up Timer value from 1 to 255 minutes. Choosing a value of zero is equivalent to infinite value.

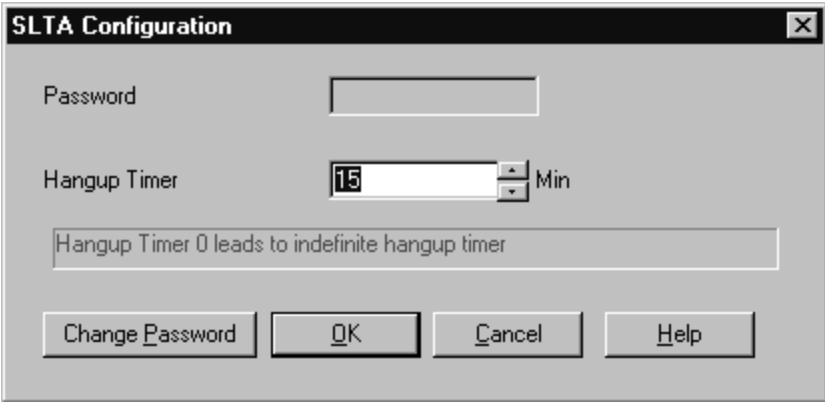


Fig. 10. Configure SLTA-10.

COMMISSIONING THE SLTA-10

When Commissioning an SLTA-10, the selection is separate from normal commissioning (see Fig. 11 and 12). Perform a modem checkout test by dialing the site from a computer with either LONSPEC or LONSTATION installed and test the modem

and the SLTA-10 settings and configuration. If the connection does not succeed then recheck all of the settings, connections and cycle power on the SLTA-10 (disconnect the power for a minimum of 30 seconds). Then retry to make the connection. If a connection cannot be made, contact the local distributor.

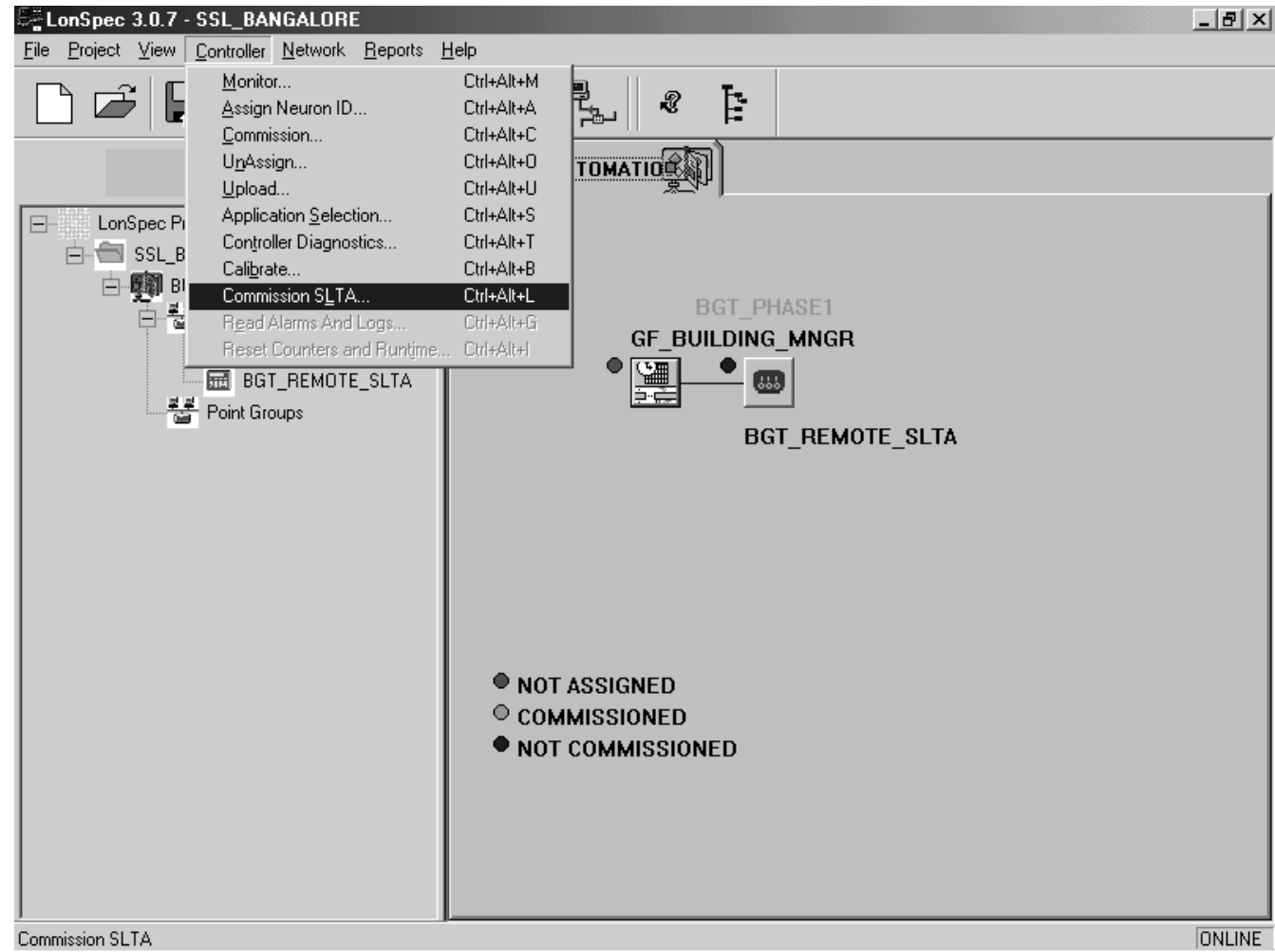


Fig. 11. Commissioning an SLTA-10 for Remote Dialing.

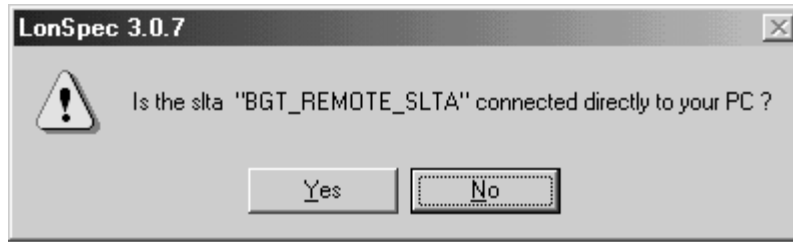


Fig. 12. Commissioning an SLTA-10.

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