

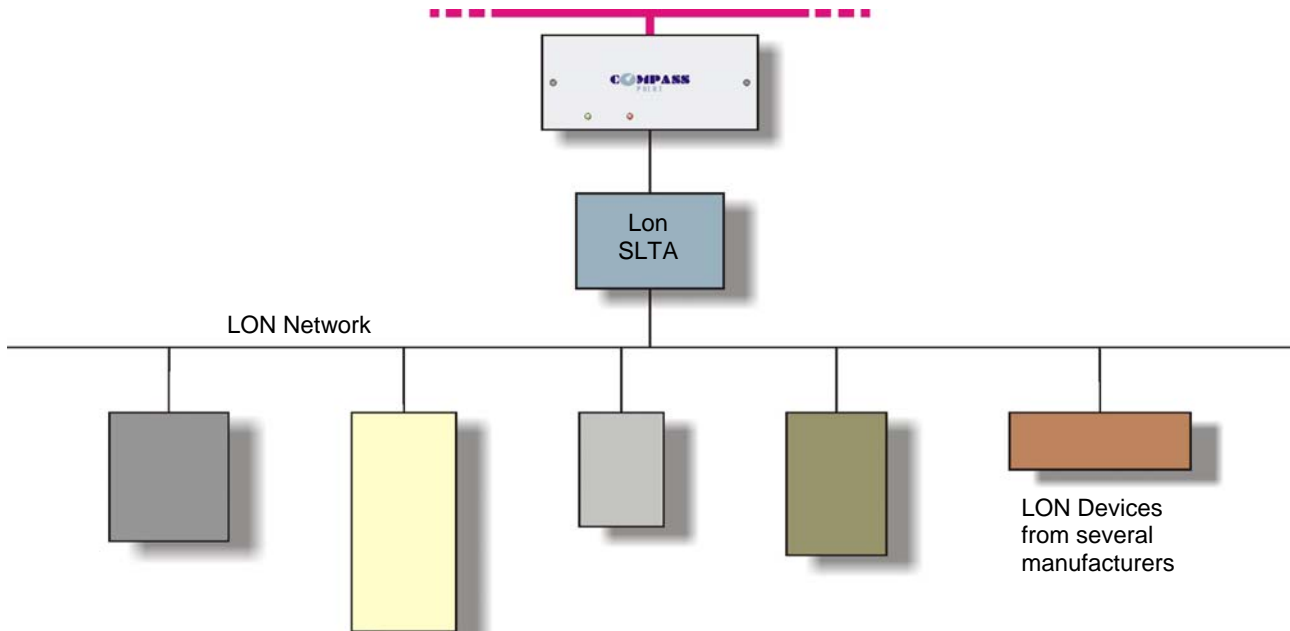
# Product Engineering Guide

## Compass v22 LonSLTA v12 RS232

---

### Introduction

The Compass v22 LonSLTA v12 Compass Point, called LonSLTA within this document, links a LON network, via Echelon Corporation's SLTA device, to the Compass Network. Network variables within each of the LON products on the LON network can be accessed from Compass, along with network variable configuration and domain tables.



### LON Addressing

Each device on the Lon network, including the SLTA, must be assigned a domain number. Only devices residing on the same domain may communicate with each other. One aspect of engineering is to determine which domain the SLTA will reside.

Within a domain, each device has a unique subnet/node number. Subnet numbers are in the range 1...255, and node numbers are in the range 1...127. Before requesting values from a device, the subnet and node number must be determined. The SLTA, being a device on the Lon network, must also have a subnet/node number assigned.

There are two ways of assigning a domain, subnet and node number to the SLTA. The first is to use Lon engineering software and assign the numbers from the Lon network. The second is to have the driver assign them from the RS232 link.

### Neuron ID Addressing

It is possible to access a Lon device using its Neuron ID rather than the domain, subnet, and node. Although this is not recommended for normal operation, it is useful when engineering. See the [Using Default ID Mode](#) section below.

### Lon External Interface File

A Lon external interface file (xif) is available for each Lon device. This file describes the network variables available and can be used to generate a North ObSys contents file. We have already generated contents files for many LonMark-Certified products, however if you have a new device then e-mail the xif file to support and we will return the contents file.

---

## **Engineering**

### **Step 1 – Mount the Compass Point**

Refer to the 'Mounting' section within the '[Compass Point RS232 Installation Guide](#)' document for details on how to mount the Compass Point securely to a wall or within a cabinet.

### **Step 2 – Connect SLTA to LON Network**

Refer to SLTA documentation on how to connect the SLTA to the LON network

### **Step 3 – Configure SLTA**

The SLTA has a set of switches that define the protocol settings for the RS232 port. Refer to the section 'SLTA Switches' below for more information.

If necessary, use your LON engineering software to assign a domain, subnet, and node number to the SLTA.

### **Step 4 – Connect Compass Point to SLTA**

Using cable, connect the 9-way female D-type connector on the LonSLTA to the RS232 port of the Compass Point. Refer to the section 'Cable' below for details of the cable.

### **Step 5 – Apply Power to the Compass Point and SLTA**

Refer to the 'Power' section within the '[Compass Point RS232 Installation Guide](#)' document. Once power is applied, the green LED should be lit continuously to show that the Compass Point is working correctly on the Compass Network. Apply power to the Lon SLTA.

### **Step 6 – Configure the LonSLTA driver within Compass Point**

The Compass Point driver can download the SLTA's domain number, subnet number, and node number to the SLTA if necessary. This is configured using objects. Use object engineering software to view and modify the object within the Compass Point.

### **Step 7 – Access Objects within the LON System**

Values from a device on the LON network are made available as objects on the Compass Network. Any object software that is connected to the Compass Network can access these objects.

The red LED near the RS232 port of the Compass pulses when a valid message is transmitted or received by the Compass Point.

### **Step 8 – Configure the Transfers within the Compass Point**

Compass Point transfers are also configured using objects. Refer to the '[Introduction to Compass Transfers](#)' document for more details.

### **Step 9 – Configure the Alarm Handling within the Compass Point**

Compass Point alarm handling is also configured using objects. Refer to the '[Introduction to Compass Alarms](#)' document for more details.

# Engineering Reference

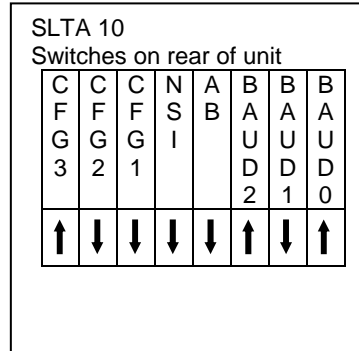
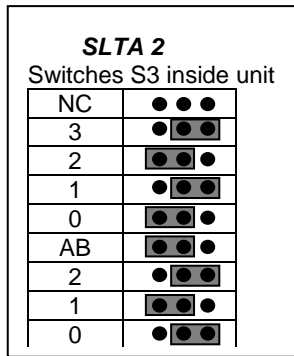
## Cable Specification

The cable between the Compass Point and the 9-way female D-type connector on the LonSLTA is as follows:

Compass end 25-male D-type		LonSLTA end 9-male D-type
2	—————	2
3	—————	3
7	—————	5
8	—————	4
Maximum Cable Lengths = 15m		

## SLTA Switches

The SLTA has switches that select how the SLTA communicates on its RS232 port. Below are tables showing the switch setting to use on different SLTA devices.



NOTE: These diagrams both show the settings for 38400 baud.

## Objects

When the Compass Point is powered-up the following objects are created on the Compass Network, use object software to access these objects.

Object	Label	R/W	Type
Dn <sup>[1]</sup>	LON System	-	[Lon\Network] <sup>[2]</sup>
Pp <sup>[3]</sup>	LON Compass Point	-	[Compass v22\ LonSLTA v12]

### Notes

- [1] The Device Number, *n*, is a number in the range 0...63.
- [2] This object has a variable content and as such requires scanning.
- [3] If the Compass Point has its device number configured the Point address, *p*, is a number in the range 1...63. If no device number is set the Point address, *p*, is the Compass Point serial number in the range 1000000...9999999

---

## Using Default ID Mode

Each device on the Lon network, including the SLTA, must be assigned a domain number. Generally, only devices residing on the same domain can communicate with each other.

If you do not know the domain ID of a group of Lon devices, then the Default ID mode may be used to find this information.

### Step 1 – Connect system

Follow the [Engineering](#) section above, up to step 6, to connect the SLTA and configure the driver.

### Step 2 – Configure SLTA Address

Using ObView, set the SLTA to a unique address by configuring the following objects within the LonSLTA driver setup: Domain ID (S.I), Subnet (S.S), Node (S.N) and Authentication Key (S.A).

Try using the following values, for example:

SLTA's Domain ID:	00
SLTA's Subnet:	127
SLTA's Node:	127
SLTA's Authentication key:	FFFFFFFFFFFF

### Step 3 – Configure SLTA Mode

Next set the following objects within the LonSLTA driver setup:

Initialise SLTA (I):	Yes
Default ID Mode (DM):	Yes

When the SLTA has been configured, the SLTA Successfully Configured object (DS) value should change to yes.

### Step 4 – Find Device

We can now start to find the domain ID of a LonMark device. If you have a network of devices, then choose one at a time.

Whilst the ObView page for the LonSLTA driver setup is shown, **press the service pin** on the Lon device. A value should now appear in the Default ID object (DID). If the ID does not appear press the service pin again. If this does still not work, then enter the 12-digit Neuron ID of the device.

### Step 5 – View Device

From ObView, navigate to the Lon Network object. Next, click the scan button and once scanning has completed click refresh. You should now see one object for the Neuron device (D). Navigate to this object.

A Lon device can reside in two domains, indicated by objects Domain 0 (D0) and Domain 1 (D1). Navigate to object Domain 0. The ObView page shows the Lon device's address settings.

If the Subnet and Node objects both have the value 0, then this is a sign that the Lon device has not yet been configured. Ask the installer of the Lon devices to address them using LonMaker, and make a note of their address parameters.

Note the address parameters of the device and continue to the next stage.



### Step 6 – Reconfigure SLTA

Now the address fields are known, the SLTA can be reconfigured with the correct domain ID. Navigate to LonSLTA driver setup object, enter the Domain ID and Authentication Key that you noted previously.

Next, set the object Default ID Mode to no, and object Initialise SLTA to yes again.

### Step 7 – Scan Lon Network

Navigate to the Lon Network object. Click the scan button again, and once scanning has finished click refresh. All the LonMark devices within the domain should now appear.

Finally, open the Lon device you wish to view. If a blank page is displayed then you require a new contents file for the device; e-mail the XIF file for this device to [support@northbt.com](mailto:support@northbt.com).



---

## Notes

### Revision History

<b>Version</b>	<b>Build Date</b>	<b>Details</b>
1.1	04/09/2004	Network variable numbers greater than 255 now supported.
1.1	03/03/2005	Documentation change to correct subnet and node number range
1.1	06/04/2006	Fixed problem when writing to object Vx.ly
1.1	21/10/2009	Added new offset object Px (this replaces Ox offset object). Added new decode types (objects L, D, Z, H, TT, etc).