Quick Start Guide
RRL Radio Telemetry

1. Antenna
2. External Power Connection
3. LED Activity Light
4. RS232 Connection
5. Serial Number
6. Datalogger Connections

RRL Station
1) Getting Started

Before you start programming your RRL Network, decide if you are going to configure and start all of your hardware in the office, or out in the field. Our recommended method is to set all hardware up in the office to ensure the RRL Stations and connected dataloggers are communicating as programmed, before installation. However, you must remember to keep a record of each RRL Station and the position and serial numbers of each connected datalogger, to ensure, when in the field, you connect all hardware as programmed.

This guide will take you through the recommended steps to set up your RRL Network.

Note: RRL Networks can bridge with an STS Edge Telemetry System. See STS Edge User Guide.

2) Install the Software

The Solinst Telemetry Software includes one main program and two utility programs:

- **STS/RRL Administrator Software**: used to set up new RRL (or STS) Networks, edit existing networks (remote updates), and view data sent from each RRL Station.
- **STS/RRL Communication Agent**: used to view network activity. Communication from each Remote and Relay RRL Station to the Home Station is logged.
- **RRL Remote Utility**: provides a convenient way to communicate with programmed RRL Stations in your office or in the field, as well as perform diagnostic checks and firmware upgrades.

Note: The Communication Agent must remain open at all times during RRL Network operation.

Web Download

Download the newest version of Solinst Telemetry Software and the RRL Remote Utility by visiting https://www.solinst.com/downloads/

The STS/RRL Communication Agent automatically installs with the STS/RRL Administrator.

CD Installation

1. Insert the software CD provided.
2. If the installer does not automatically start, to activate the software install click on the ‘setup.exe’ file located on the software CD.
3. The Software Installation Wizard will guide you through the remaining installation process. The STS/RRL Administrator, STS/RRL Communication Agent, and RRL Remote Utility are all automatically installed.

3) Install RRL Station Batteries

(units are shipped with batteries not installed)

1. Use a Phillips screwdriver to undo the four screws from the back of the RRL unit.
2. Carefully remove the back of the RRL unit.
3. Install the batteries in the battery holder. Ensure proper polarity.
4. Replace the back of the RRL unit ensuring all wires are inside. Reinstall the four screws.
4) Connect Dataloggers to RRL

1. Ensure the pins are lined up, and connect the Reader Cable to the RRL Station.

2. Connect the Reader Cable to a Direct Read Cable with a Levelogger or Barologger connected, or to a LevelVent Wellhead or AquaVent Wellhead Connector Cable.

3. Record the serial number of each unit, as well as the reference position connection to the RRL.

**Note:** Each RRL Station has connections for two dataloggers. These connections can also be used to connect Splitters. One or two Splitters can be used, each allowing the connection of two dataloggers.

Position the Splitter as shown in the photo above to accommodate two Splitters on the RRL Station.

**Note**

The connections for dataloggers on the RRL Stations are identified as Right and Left in the RRL Software. This assumes the RRL Station is facing with the black label towards you. When using a Splitter, the number 1 or 2 will identify the dataloggers. The numbers 1 and 2 are labeled directly on the Splitter.
5) Program RRL Stations

All RRL Stations use the same hardware, and are programmed using a software wizard as a Home Station, Relay Station, or Remote Station. Therefore, stations can be programmed and are interchangeable as required.

1. Connect the RRL Station to be programmed as the Home Station to the PC with an RS232 cable, and start the software.

   **Important**
   A higher Radio Power setting will increase communication distance between 900 MHz radios, but it will use up the battery power more quickly. (See “Connect Power Supply”).

   **Remember**
   As you are prompted through the software wizard, remember to connect each RRL Station to the PC before entering the settings.

2. Select an RRL Site, and click Next to start the software wizard.

4. The software wizard will prompt you through programming each of your RRL Stations. You will enter the number of dataloggers connected to each Station. You will also be given the option to program the dataloggers to record internally on their own schedule.

5. After applying settings to each Station, there will be the option to start your RRL Station with the Network Start Time entered in Step 2 of the Wizard, or use the Remote Utility (See “Start RRL Stations”). After applying all settings, Step 7 of the wizard will provide a network summary.

6. The RRL Network will be added to the STS/RRL Administrator window, where you can view all the site information and edit as required.
6) Start RRL Stations

Once all Stations have been programmed, it is recommended you start each RRL Station logging as a test.

There are two options for starting your RRL Stations:

**Start Stations with the Programmed Network Start Time**
RRL Stations will begin logging at the date and time entered in Step 2 of the Software Wizard.

**Start the Station with the Remote Utility**
RRL Stations will stay in stop mode until they are started with the RRL Remote Utility.

After each Station is started, and the first set of data sent, the serial numbers and types of dataloggers connected to the Station will be shown in the STS/RRL Administrator Window. You can print a copy of this screen for each Station, as a record to refer to when installing the Station in the field.
7) Connect Power Supply

RRL Home Stations and Relay Stations require an external power supply. External power cables are connected to the RRL Station beside the antenna connection. An AC Power Adaptor comes with a battery charger and cables for connection to an AC power source. A 12 Volt External Power Cable is available for connection to a user-supplied 12 Volt battery or solar panel.

Each RRL Station comes standard with six (6) 3.6V AA replaceable lithium batteries. To help determine if an external power supply is required at a Remote Station, the following are estimates based on the standard lithium batteries with the Radio Power setting at 1 Watt. With the Radio Power set at 100 mW, the battery life increases by about 10% of the estimates below. With six (6) 1.5V AA alkaline batteries, the battery life will be about 40% of the estimates.

<table>
<thead>
<tr>
<th>Sample Rate</th>
<th>Report Rate</th>
<th>Battery Life</th>
</tr>
</thead>
<tbody>
<tr>
<td>Every 5 Minutes</td>
<td>Every Hour</td>
<td>114 Days</td>
</tr>
<tr>
<td>Every 15 Minutes</td>
<td>Every 6 Hours</td>
<td>425 Days</td>
</tr>
<tr>
<td>Every Hour</td>
<td>Every 12 Hours</td>
<td>680 Days</td>
</tr>
<tr>
<td>Every 12 Hours</td>
<td>Every Day</td>
<td>895 Days</td>
</tr>
<tr>
<td>Every 15 Minutes</td>
<td>Every 3 Days</td>
<td>810 days</td>
</tr>
<tr>
<td>Every Hour</td>
<td>Every 7 Days</td>
<td>1078 Days</td>
</tr>
<tr>
<td>Every 12 Hours</td>
<td>Every 14 Days</td>
<td>1200 Days</td>
</tr>
</tbody>
</table>

*Battery Life Estimates (6 3.6V AA lithium batteries at 1 Watt)*

**Note:** It is recommended to replace the batteries when the Remote Station Battery indicator reaches 30%.

8) Install in the Field

RRL Stations are designed to fit inside 4.5” (115 mm) diameter wells for discrete placement.

RRL radios communicate with each other via line-of-sight. They must be able to “see” each other in order to have effective communication. Each Station is site specific, and will require testing and planning to determine ideal placement and settings.

A communication range test can be performed prior to installation between the Home Station and the Remote or Relay Station. Using the RRL Remote Utility, tests can be done using different Radio Power settings to determine the ideal setup for your site. Always start with the lowest Radio Power setting, as this will conserve battery power.

Field tests will allow you to determine if you need an additional power source due to a higher Radio Power setting, or the addition of a higher gain antenna or Relay Station to increase communication distances.

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RRL Remote Utility

To use the Remote Utility, connect a RRL Station to the PC with a RS232 cable, select the COM port to which the station is connected, and click “Retrieve Info” to display the settings from the RRL Station.

To start the RRL Station logging, click “Start”. To stop the RRL Station, click “Stop”.

Click “Radio Test” to determine if communication between the Remote Station (or Relay Station) is successful.

Click “Test” beside any of the datalogger icons, to determine if communication between the RRL Station and the logger is successful.

View Site Data

Data received in each report from a RRL Station is placed in a Microsoft® Access® database on the Home Station computer. New data is appended to the existing database. The program will save data downloaded to the following default directory:

```
<C:\Program Files\Solinst\STS_Gold\db>
```

Data can be barometrically compensated, and exported using the software as .lev, .xle or .csv files for use in other programs.

To view data from a specific site, open the Administrator Window and select an RRL Network or Station from the list. Click “Display Data”.

Select the RRL Station from the list that opens and click OK.

Communication Agent

The Communication Agent must be opened before the RRL Network can start sending data to the Home Station PC. The window displays all communication activity occurring in the network. Log files are automatically saved to:

```
<C:\Program Files\Solinst\STS_Gold\log>
```