

ScaleLink
WIRELESS TRANSCEIVER

**INSTALLATION &
TECHNICAL MANUAL**



**PRELIMINARY
(G2 HARDWARE)**



WEIGHING TECHNOLOGIES

**SCALELINK (G2) WIRELESS TRANSCEIVER
TECHNICAL MANUAL**

SOFTWARE RELEASE 1-40, 04/2013

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INTRODUCTION

The ScaleLink Wireless Transceiver allows Scale Technicians with little or no knowledge of radio communications to quickly and confidently set up wireless systems. Combining trusted radio frequency technology with scale specific features, the ScaleLink can be universally connected to any device with a serial port such as indicators, remote displays, PC computers and digital summing modules. The ScaleLink can eliminate costly and time consuming installation steps like trenching, running wire, and conduit while increasing the range of the system and decreasing the risk of damage due to transient voltages and lightning.

Like all Western products, the ScaleLink is engineered for durability, functionality, and the versatility of today's weighing industry.

The following information is for the exclusive use of **WESTERN** Dealers and customers.

SAFETY

Installation, configuration, and servicing are only to be done by qualified service personnel as authorized by Western.

Power must be disconnected before servicing the unit.



Scale Service Technicians handling ScaleLink PCBs must observe proper electrostatic discharge (ESD) handling



ATTENTION! Unauthorized installation and service of this unit may void the warranty.



ATTENTION! Only approved antennas may be used with this device to ensure compliance. Contact the factory for more info.



WARNING: This equipment is approved only for mobile and base station transmitting devices. Antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

Parameter 1.6: Traffic Light Switch Default

| Value | Description |
|-----------------------|--|
| OFF RED GREEN < | <p>Sets the function of the Traffic Light Switch. In Auto Connect Mode, the ScaleLink sends a traffic light command in its output string based on this setting and the switch condition.</p> <p>OFF: No traffic light command characters are ever sent.</p> <p>RED: Switch OPEN (normal) - Sends "&" (Dec 38) Switch CLOSED (activated) - Sends "*" (Dec 42)</p> <p>GREEN: Switch OPEN (normal) - - Sends "*" (Dec 42) Switch CLOSED (activated) - Sends "&" (Dec 38)</p> <p>Ex: When set to GREEN, the command character "*" is sent when the switch is OPEN, turning the light GREEN. The command character for a RED light "&" is sent when the switch is CLOSED.</p> <p>* This function is not available in <i>Direct Connect Mode</i>. For traffic light information, please see the Aurora Series Installation & Technical Manual.</p> |



NOTE: For more information on changing the traffic light when using *Direct Connect Mode*, consult the Aurora Series Installation & Technical Manual.

Parameter 1.7: Com Port Echo Out

| Value | Description |
|---------------------------|--|
| OFF < RS-232 RS-422 | <p>The ScaleLink Com ports may be set to automatically "echo out". All data received on the main com port RX input is retransmitted out the TX output of the port selected here.</p> <p>This parameter is useful for diagnostics and for applications where the communicating device has run out of available Com ports.</p> |

Parameter 1.8: Checksum

| Value | Description |
|---------------|--|
| OFF CHEC < | Select whether or not to have a checksum to the end of the ScaleLink's output string when in Auto Connect Mode. The checksum may need to be removed for interfacing with older equipment. |

Parameter 9.3: Set-Up Lockout

| Value | Description |
|--------------|--|
| OFF < LOC | This parameter acts as a security feature to prevent accidental changes to the ScaleLink set-up. When set to LOC, no Set-Up Parameters can be changed. Set this parameter to OFF to allow changes. |


Parameter 9.8: Test Display


| Value | Description |
|-------|---|
| N/A | Cycles through display digits followed by the software version. |


Parameter 9.9: Reset Defaults

| Value | Description |
|------------------|--|
| ABORT < RESET | Resets Set-Up Parameters to factory defaults . Select "Abort" to exit this parameter without resetting. |

DIAGNOSTIC BUTTONS

 **RESET:** Cycles power to the ScaleLink
RESET

 **TEST:** In *Auto Connect Mode*, sends a test string (counting up 0 to 9) for transmission verification on the other side. Press twice for a slower transmission and a third time to exit the test.
TEST

 **STATUS:** Press to quickly display Software version, Radio Channel, Selected Com port, Baud Rate and Operating Mode.
STATUS

MOUNTING INSTRUCTIONS

1. Inspect the installation site for properly grounded power. The socket-outlet shall be installed near the equipment and shall be easily accessible.
2. Allow proper clearance for running cables up into the enclosure via the cable strain-reliefs as necessary.
3. The ScaleLink can be mounted on interior or exterior surfaces with #10 screws or 3/16ths bolts. Use proper hardware, including wall anchors where necessary. The appropriate length must be determined specifically for each application.

OPENING THE SCALELINK ENCLOSURE

1. Make sure the unit is disconnected from power.
2. Remove the 4 screws (with sealing washers) from the front of the enclosure.
3. Guide the front cover away from the enclosure. Be sure to mind the internal connections!

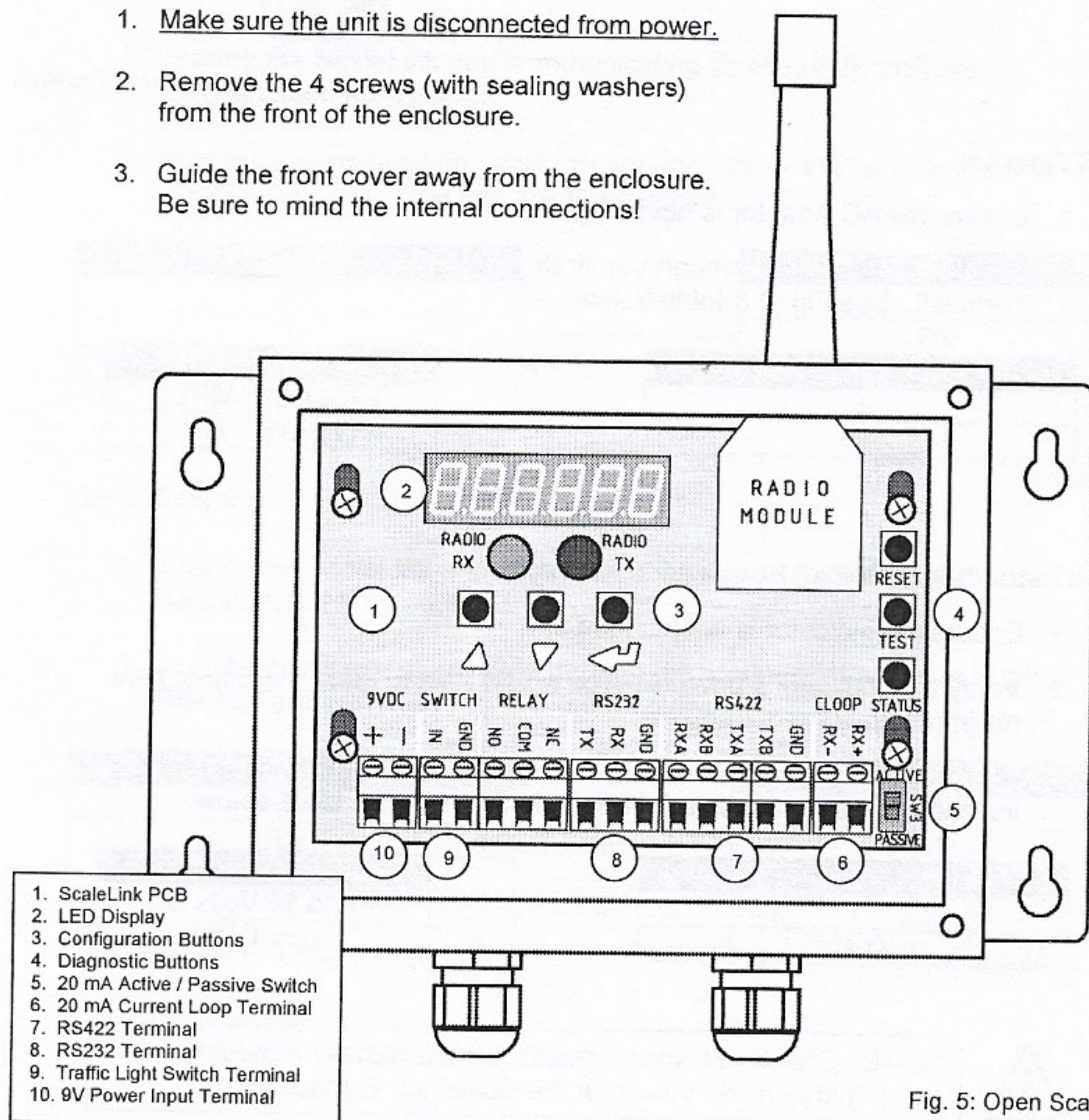


Fig. 5: Open ScaleLink

SCALELINK FEATURES

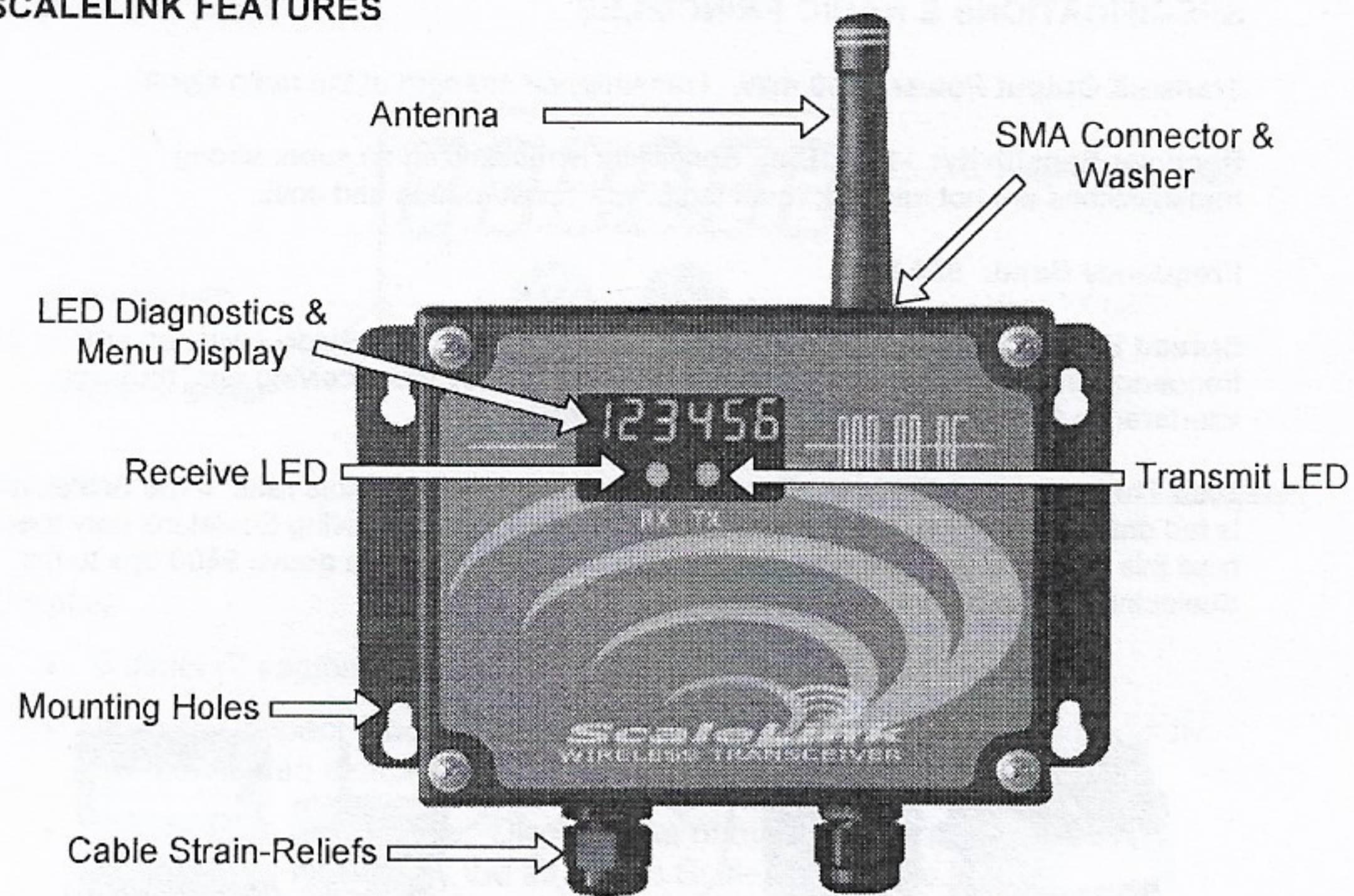


Fig. 1: ScaleLink

ROBUST & LONG RANGE

- Up to 300 ft. Indoor/Urban/Through walls
- Over 1000 ft. Outdoor/Line-of-sight
- 6 Unique Radio Channels
- Weather-proof enclosure

MULTIPLE COMMUNICATION MODES

- Supports RS 232, RS 422 & 20 mA Current Loop (Active & Passive)
- Supports different data formats (parity, stop bits, etc.)
- Continuous data stream up to 9600 kbs.
- Communicate between devices using different baud rates

EASY TO INSTALL AND USE

- ScaleLink replaces any serial cable, transmitting / receiving right out of the box.
- No software set-up required
- Technicians use a Pushbutton Menu System to adjust communication settings including baud rate, radio channel, and more
- Terminal wiring with no special cables, connectors, or soldering.

TROUBLESHOOTING & ERROR MESSAGES

| | |
|---|---|
| Unit won't power up: | <ul style="list-style-type: none"> • Verify power source (Breakers, outlets, adapters, etc.) • Check power connections to the ScaleLink board 9VDC terminal. |
| Display reads "Err 1": | <ul style="list-style-type: none"> • Baud Rate Auto-Learn has failed. • Verify the correct terminal (RS 232, 422, CLOOP) is being used. • Verify cable connection to indicator (TX to RX, etc). • Verify that data is being CONTINUOUSLY transmitted to the ScaleLink from the indicator and that the data string contains numeric characters. |
| Display reads "Err 2": | <ul style="list-style-type: none"> • Data String Auto-Learn has failed. • Verify the correct terminal (RS 232, 422, CLOOP) is being used. • Verify cable connection to indicator (TX to RX, etc). • Verify that a data string is being sent to the ScaleLink CONTINUOUSLY from the indicator and that the data string contains either an STX character (ASCII 02) or a CR character (ASCII 13). |
| Display reads "Err 3": | <ul style="list-style-type: none"> • The ScaleLink is receiving data on multiple communications ports. |
| Display reads "Err 4": | <ul style="list-style-type: none"> • The Radio Module has not been detected. |
| Dashes across the display: | <ul style="list-style-type: none"> • Communications have failed or been interrupted after Auto-Learn in <i>Auto Connect Mode</i>. • Verify cable connection to indicator. • Verify indicator serial port function. |
| Processor Status LED light NOT blinking (Consistently OFF or ON): | <ul style="list-style-type: none"> • Verify that unit has power. If so, cycle the power. If the Status light remains OFF, the processor is not running. |
| Processor Status LED blinking (3xsecond) for over 1 min in Auto Connect Mode: | <ul style="list-style-type: none"> • The ScaleLink is not able to Auto-Learn the data string or baud rate. See Error Messages "Err 1" and "Err 2". |
| TX LED doesn't flash: | <ul style="list-style-type: none"> • The ScaleLink is not receiving data from the com ports. |
| RX LED doesn't flash: | <ul style="list-style-type: none"> • The ScaleLink is not receiving data over the air from another ScaleLink. |

Parameter 1.3: Data Bits & Parity (Direct Connect Only)

| Value | Description |
|---------------------------|---|
| 8-non < 7-Evn 7-Odd | Set Data Bits and Parity to match with the communicating device. 8-non = 8 Data bits, No parity 7-Evn = 7 Data bits, Even parity 7-Odd = 7 Data bits, Odd parity * Only available in <i>Direct Connect Mode</i> . |

Parameter 1.4: Stop Bits (Direct Connect Only)

| Value | Description |
|------------------|---|
| 1 bit < 2 bit | Set Stop Bits to match with the communicating device. * Only available in <i>Direct Connect Mode</i> . |

Parameter 1.5: Radio Channel Select

| Value | Description |
|--|--|
| CH 0 < CH 1 CH 2 CH 3 CH 4 CH 5 | Sets the radio frequency channel (0-5). If there are multiple point to point wireless installations at a given site, each installation must have its own unique radio channel selected to prevent interference. This parameter functions in both <i>Auto Connect</i> and <i>Direct Connect</i> Modes. |



NOTE: All components of the wireless system must be set to the same radio channel. Example: A ScaleLink set to channel 0 will communicate with a wireless Aurora also set to channel 0.



NOTE: If the wireless connection experiences interference problems from another radio site, switching radio channels will most likely correct the problem.

SET-UP PARAMETERS

Parameter 1.0: Functional Mode

| Value | Description |
|------------------|---|
| AUTO < DIRECT | Selects the ScaleLink's operating mode. Auto = Auto Connect Mode Direct = Direct Connect Mode For information on these 2 operating modes, see page 11. |

Parameter 1.1: Com Port (Direct Connect Only)

| Value | Description |
|------------------------------|---|
| RS-232 < RS-422 C-LOOP | Select the Com port for connection to the communicating device. NOTE: If 20 mA Current Loop (CLOOP) is selected, be sure to set the SW3 switch on the PCB to ACTIVE or PASSIVE as required. For more information, see page 10. * Only available in <i>Direct Connect Mode</i> . |

Parameter 1.2: Baud Rate (Direct Connect Only)

| Value | Description |
|--|--|
| 300 600 1200 2400 4800 9600 < 19200 38400 | Set the Com port baud rate to match with the communicating device. * Only available in <i>Direct Connect Mode</i> . |

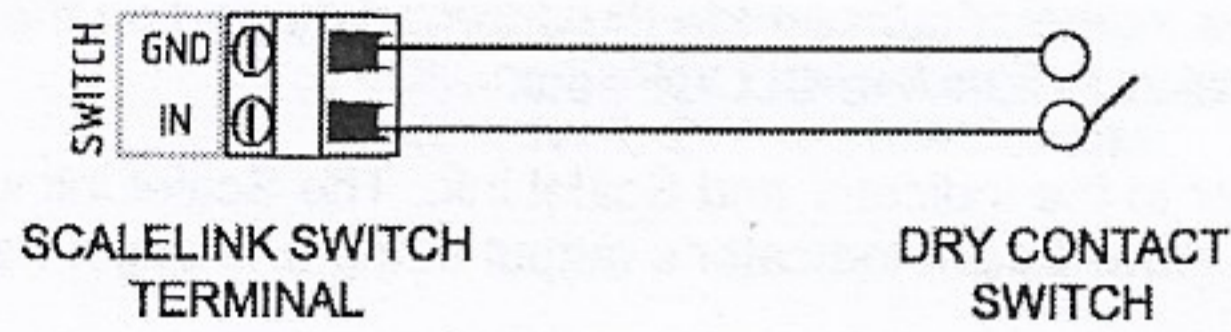


NOTE: The maximum data throughput of the radio transmission is **10kbs**. If the Com port baud rate is set over 9600, some loss of data may occur.

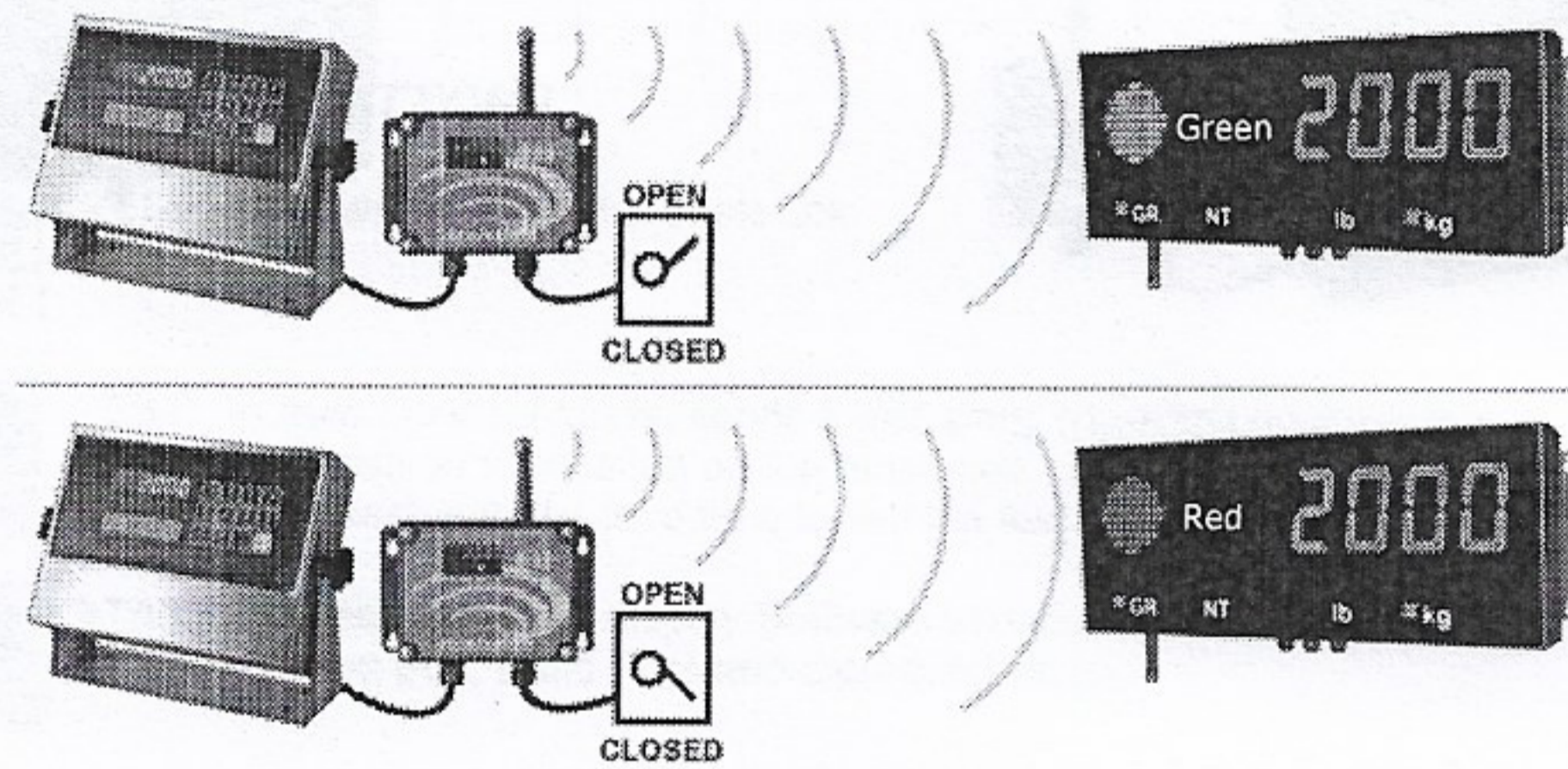
EXAMPLE 2: INDICATOR TO AURORA 45 SL (TRAFFIC LIGHT CONTROL)

- Equipment:
- Scale Indicator
 - Aurora 45 SL Display with integrated wireless option
 - ScaleLink Wireless Transceiver
 - Dry contact, Push-to-make switch

1. Ensure power is disconnected from the indicator and ScaleLink.
2. Connect the indicator com port to the appropriate port on the ScaleLink. RS232 to RS232, 20mA to CLOOP, etc.
3. Connect a dry contact, push-to make switch to the SWITCH terminal on the ScaleLink. **DO NOT** supply any external power to this terminal!

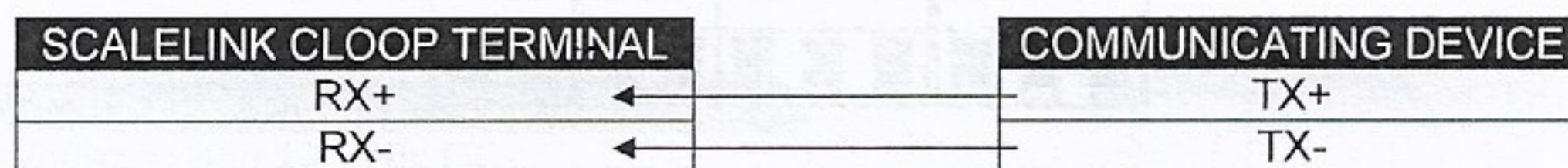


4. Apply power to the indicator and ScaleLink. The ScaleLink will take a moment to **Auto-Learn** indicator's output string and begin transmitting.
5. The scale weight will be displayed on the ScaleLink's display and the TX light (red LED) will blink to indicate the radio is transmitting. If the TX light does not come on, verify that the indicator is outputting **CONTINUOUSLY**.
6. Power up the wireless Aurora display. Verify that the ScaleLink to Aurora connection the same way as in Example 1.
7. Test the switch. The default condition for the switch (contact open) is a GREEN light. When the switch contact is closed, the light turns RED.



20 mA Current Loop Wiring (Passive Only)

1. Ensure the ScaleLink and communicating device (indicator) are disconnected from power.
2. Run the communication cable through the strain-relief and wire to the **CLOOP** Terminal. See Fig. 7 & table below:



20 mA Current Loop Mode Switch

- After the current loop is wired, ACTIVE or PASSIVE mode must be selected via the switch on the ScaleLink board (SW 3).
- Select ACTIVE if the ScaleLink is required to supply the 20 mA current to the communicating device (indicator).
- Select PASSIVE if the communicating device (indicator) supplies the current to the ScaleLink. If unsure of these requirements, check the device's manual.

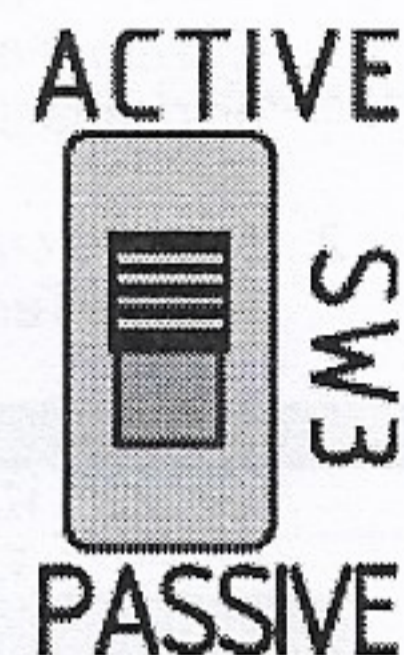


Fig. 8: 20 mA Mode Switch



NOTE: The ScaleLink converts **20 mA Current Loop** transmissions to RS 232 before transmitting them. This is a **one-way** operation. The ScaleLink will **NOT** convert received RS 232 signals to 20 mA.

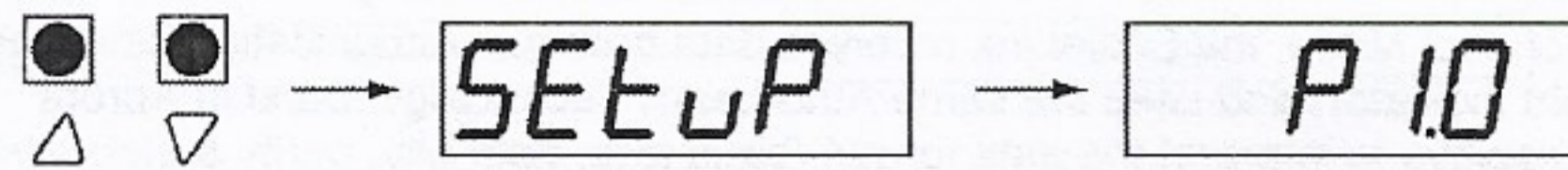
RE-ASSEMBLY

1. Tighten the strain-reliefs to ensure a moisture tight seal.
2. Verify the all cables and wires are secure and that the radio module is seated properly in the terminals.
3. Place the front cover on the unit and secure with the 4 screws and sealing washers.
4. Ensure the rubber washer on the radio module's SMA connector is creating a seal against the main enclosure and screw on the antenna.

SET-UP MODE

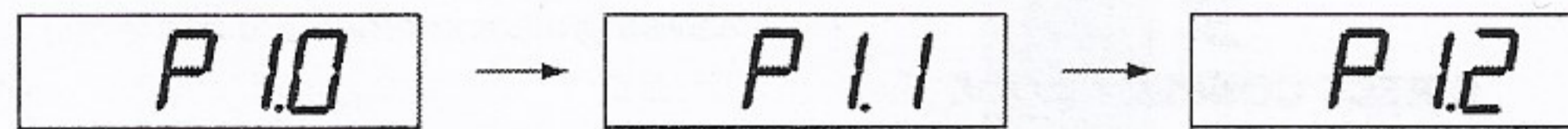
ENTERING SET-UP MODE

1. Press & hold the **UP** and **DOWN ARROW** keys together.
2. "SEtUP" is flashed on the display.
3. The first *Set-Up Mode* parameter (P1.0) is displayed.



NAVIGATING SET-UP PARAMETERS

1. Use the **UP** & **DOWN ARROW** keys to find the parameter. Set-Up Parameters are displayed by the letter "P" preceding the parameter number (Ex. "P1.0, P1.1, P1.2 ...").



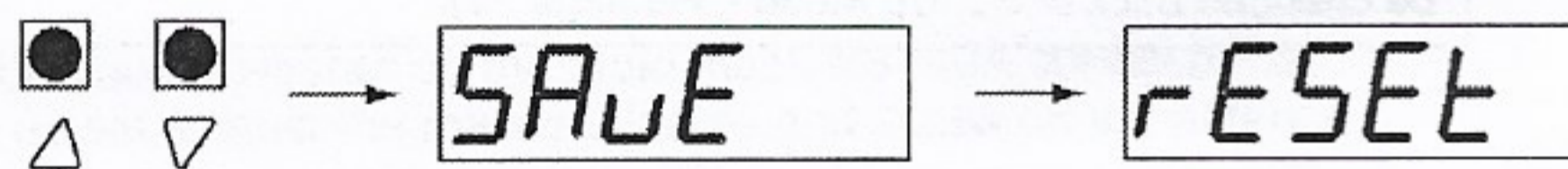
EDITING SET-UP PARAMETERS

1. Navigate to the parameter and press **ENTER** to display the parameter value.
2. Use the **UP** and **DOWN ARROW** keys to edit the parameter value.
3. Press **ENTER** to confirm the parameter value.



EXIT & SAVE SET-UP

1. Press the **UP** and **DOWN ARROW** keys together.
2. The display flashes "SAvE" and "rESEt" before exiting *Set-Up Mode*. All set-up information is saved and the display resets itself for normal operation.



EXAMPLE 3: INDICATOR TO PC (2 WAY COMMUNICATION)

- Equipment:
- Scale Indicator
 - PC
 - 2 ScaleLink Wireless Transceivers

Indicator Side

1. Ensure power is disconnected from the indicator and ScaleLink.
2. Connect the indicator com port to the appropriate port on the ScaleLink. RS232 to RS232, 20mA to CLOOP, etc.
3. Apply power to the indicator and ScaleLink. Enter the ScaleLink's Set-Up Mode and select **Direct Connect** from P1.0.
4. Ensure the following parameters match those of the indicator:
 P1.1 Com Port P1.2 Baud Rate P1.3 Parity P1.4 Stop Bits
5. Exit Set-Up Mode.

PC Side

1. Ensure power is disconnected from the PC and ScaleLink.
2. Connect the PC com port to the appropriate port on the ScaleLink. This will usually be RS232 and a 9 pin connector may be required.

| SCALELINK RS232 TERMINAL | PC SERIAL PORT |
|--------------------------|-----------------|
| TX | PIN 2 (RX) |
| RX | PIN 3 (TX) |
| COM | PIN 5 (SIG GND) |

3. Apply power to the ScaleLink and boot the PC. Enter the ScaleLink's Set-Up Mode and select **Direct Connect** from P1.0.
4. Ensure the following parameters match those of the indicator:
 P1.1 Com Port P1.2 Baud Rate P1.3 Parity P1.4 Stop Bits
5. Exit Set-Up Mode. Verify TX and RX LEDs are blinking as expected. For example, if the indicator is transmitting weight continuously, its ScaleLink TX LED should be much more active than the other. In this case, the PC ScaleLink RX LED will be blinking rapidly with its TX LED only blinking when the occasional command is sent.



SCALELINK OPERATING MODES

The ScaleLink has 2 modes of operation, *Auto Connect* and *Direct Connect*.

AUTO CONNECT MODE

Auto Connect is the default operation mode. ScaleLink functions are simplified and optimized for connecting to Aurora Remote Displays and other weighing devices.

In Auto Connect Mode, the ScaleLink receives data from a communicating device (such as a weight indicator) and uses the same Auto-Learn Technology found in Aurora Remote Displays to interpret the data format (baud rate, data bits, parity & stop bits) and output string.

Once the data is received and learned, the ScaleLink re-organizes the data in real-time and wirelessly transmits an enhanced output string complete with the scale weight, status data, traffic light control characters and other diagnostic information.

As a diagnostic aid, the Auto-Learned weight is displayed on the ScaleLink's display.

DIRECT CONNECT MODE

Direct Connect Mode is most often used for 2 way radio communications and advanced networking applications. The ScaleLink performs no Auto-Learn so the communication port and settings must be entered manually.

Input Data from the ScaleLink Com port RECEIVE terminal is transmitted via the radio exactly as it is received. Also, any data picked up by the radio is transmitted via the ScaleLink Com port TRANSMIT terminal exactly as it was received.

Direct Connect mode must be enabled in Set-Up Mode (P1.0) and has the following default communications settings:

- RS-232 Communications
- 9600 Baud
- No Parity
- 8 Data Bits
- 1 Stop Bit



NOTE: The ScaleLink is set to *Auto Connect* by default. If the communicating device is transmitting to the ScaleLink at power up, the communication settings may be "learned" and will automatically change the *Direct Connect* mode default settings. These settings can be changed back in Set-Up Mode (See page 12).

SPECIFICATIONS & RADIO PRINCIPLES

Transmit Output Power: 250 mW. Transmission strength of the radio signal.

Receiver Sensitivity: -109 dBm. Sensitivity is maximized so super strong transmissions are not needed, reducing power consumption and cost.

Frequency Band: 900 MHz.

Spread Spectrum Frequency Hopping: Transmissions are rapidly switched among 25 frequency channels within the band and re-organized by the receiving unit, reducing interference from other signals on the same band.

Data Throughput: 9600 bps. Transmissions always occur at this rate. If the ScaleLink is fed data at 1200 bps, it is transmitted at 9600 bps. The receiving ScaleLink may then feed this data at a different rate to its device. Transmitting data above 9600 bps to the ScaleLink may cause some data loss.

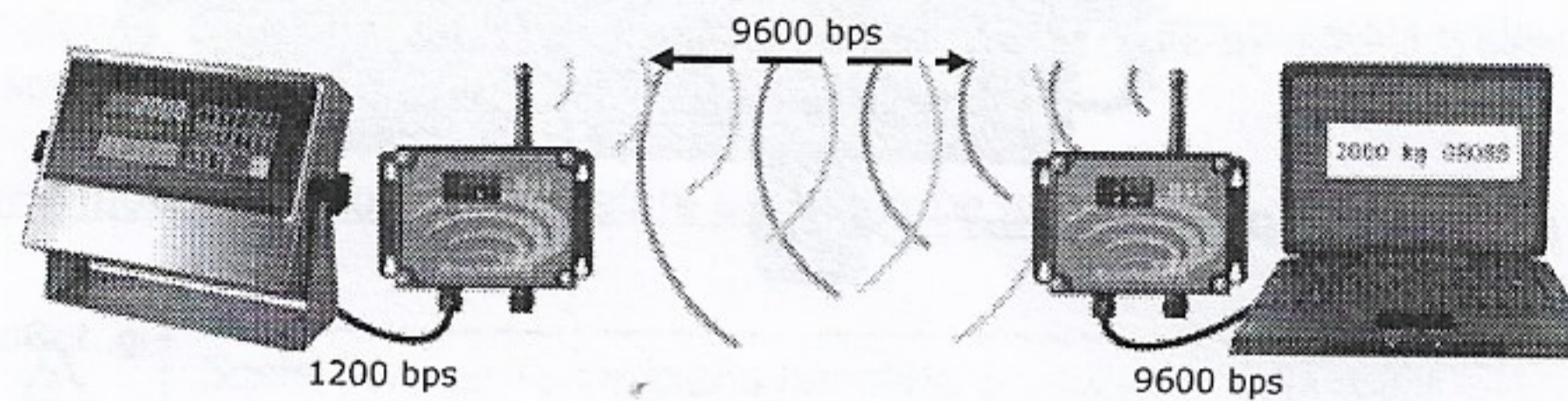


Fig. 2: Data Throughput

Approvals:

FCC: Contains FCC ID: MCQ-XBPS3B
The enclosed device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (i.) this device may not cause harmful interference and (ii.) this device must accept any interference received, including interference that may cause undesired operation.

IC: Contains IC: 1846A-XBPS3B

INSTALLATION

PRE-INSTALLATION

- It is always good practice to verify that the ScaleLink is complete and undamaged upon receipt.
- Check over packaging for any signs of damage.
- Remove the ScaleLink from its protective packaging and check for damage.
- Verify that the shipment includes:
 - ScaleLink Wireless Transceiver
 - Screw-on Antenna
 - Power Adaptor

DIMENSIONS

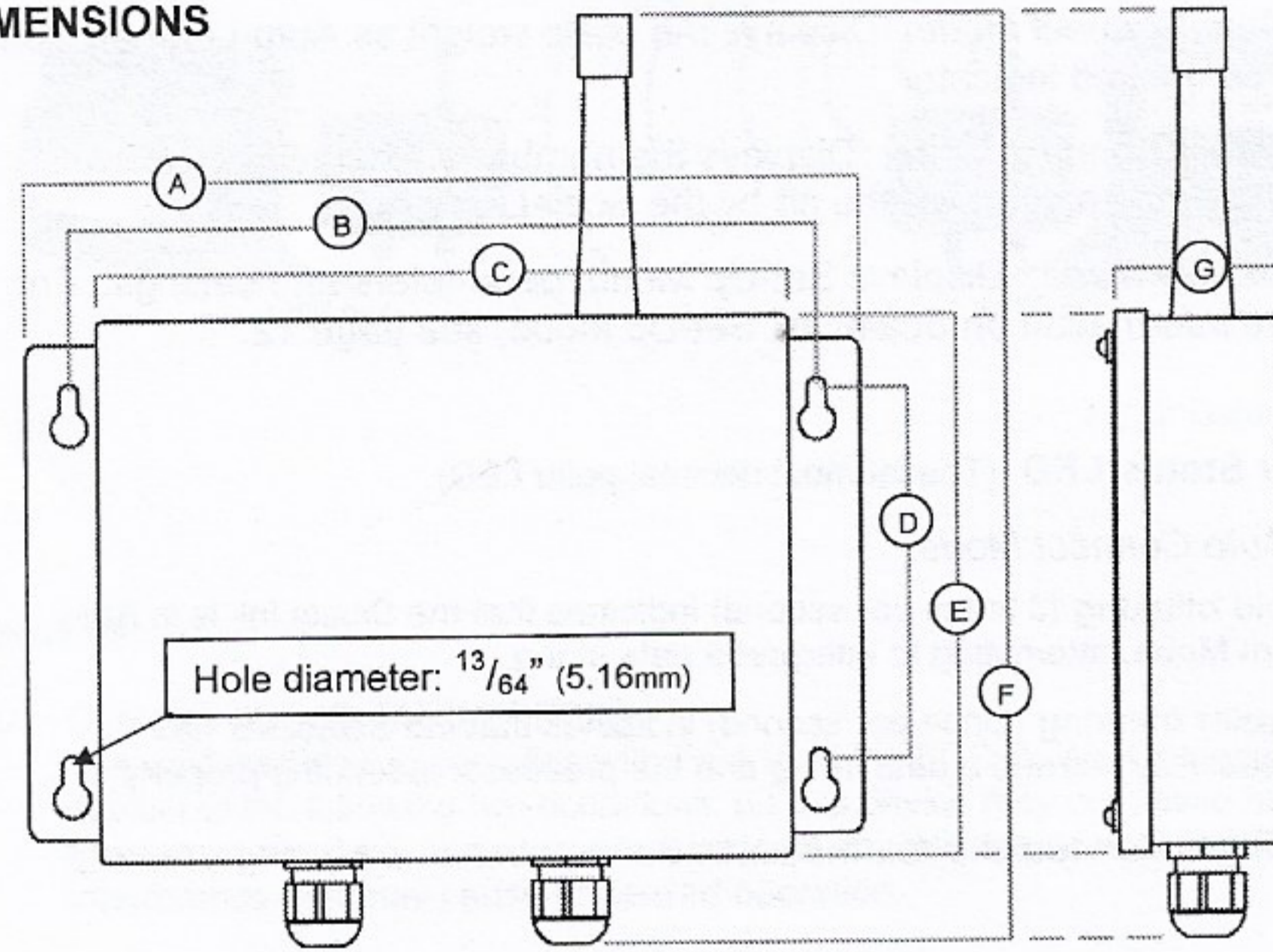


Fig. 4: ScaleLink Dimensions

| Model | A | B | C | D | E | F | G | Weight |
|----------------|----------------------------|-------------|----------------------------|------------|----------------------------|----------------------------|---------------------------|-------------------|
| ScaleLink (G2) | 6 $\frac{3}{4}$ " 171mm | 6" 152mm | 5 $\frac{3}{8}$ " 137mm | 3" 76mm | 4 $\frac{1}{4}$ " 108mm | 7 $\frac{3}{4}$ " 197mm | 1 $\frac{5}{8}$ " 43mm | 1.7 lb 0.75 kg |

POWER WIRING

Power Requirements

The ScaleLink requires **8 Volts DC at 250 mA at minimum**. The ScaleLink may be powered by the optional AC Adaptor or via "piggy-back" power from the indicator or other communicating device.

| SCALELINK POWER REQUIREMENTS |
|------------------------------|
| Voltage: 8 to 12 Volts DC |
| Current: 250 mA (minimum) |

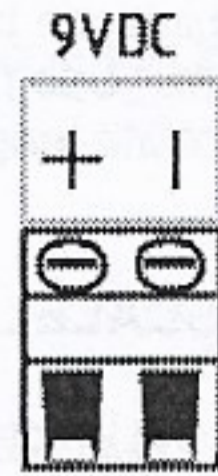


Fig. 6: Power Terminal

AC Adaptor

1. Ensure the AC Adaptor is not plugged in.
2. Run the power cable through the strain-relief and wire to the **9VDC** Terminal. See Fig. 6 & table below:

| SCALELINK 9VDC TERMINAL |
|-------------------------|
| + |
| - |

| AC ADAPTOR |
|----------------|
| + (BLACK WIRE) |
| - (WHITE WIRE) |

Indicator "Piggy-back" Power

1. Ensure the indicator is not plugged in.
2. Verify that indicator's power source will be able to meet the ScaleLink's minimum power requirements.
3. Run an appropriate power cable through the strain-relief and wire the indicator power to the **9VDC** Terminal. See Fig. 6 & table below:

| SCALELINK 9VDC TERMINAL |
|-------------------------|
| + |
| - |

| INDICATOR POWER |
|--------------------|
| + 8 to 12 Volts DC |
| - , or COM |



NOTE: Check with your indicator's manufacturer regarding using "piggy-back" power for the ScaleLink Transceiver.

COMMUNICATIONS WIRING

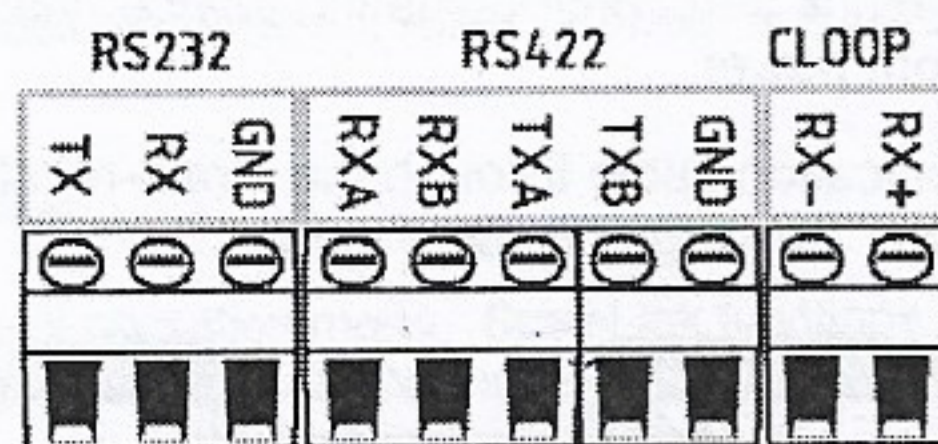
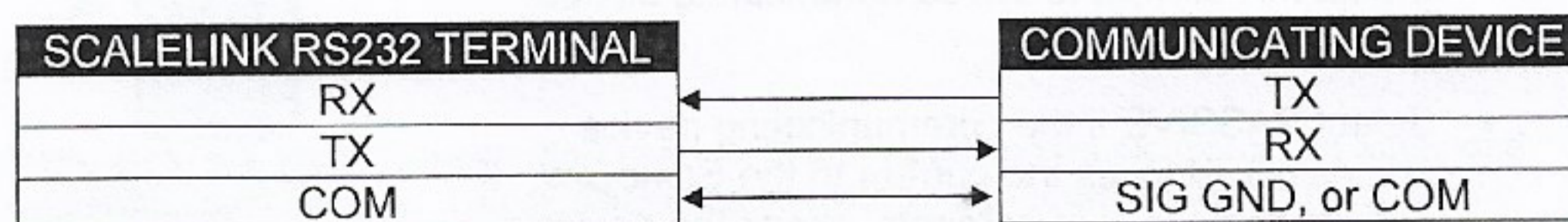


Fig. 7: Communication Terminals

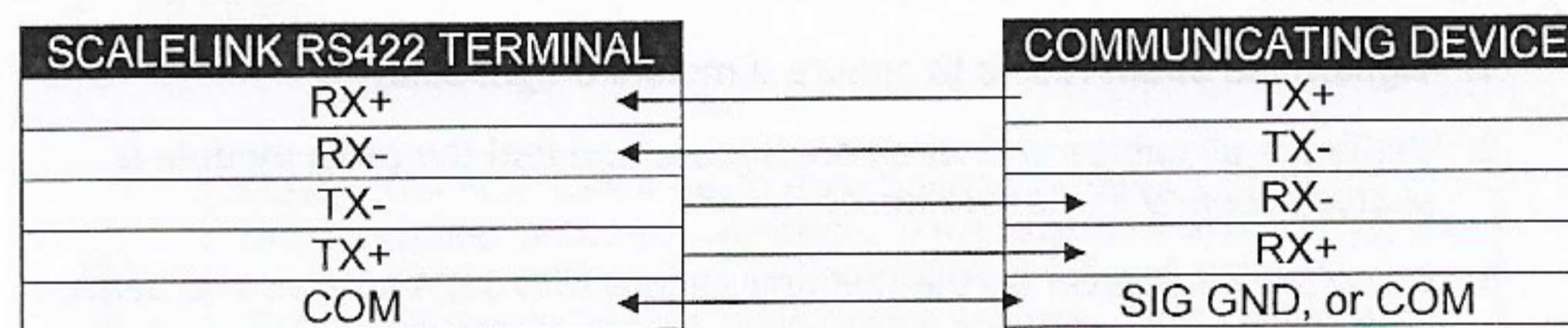
RS 232 Wiring

1. Ensure the ScaleLink and communicating device (indicator) are disconnected from power.
2. Run the communication cable through the strain-relief and wire to the **RS232** Terminal. See Fig. 7 & table below:



RS 422 Wiring

1. Ensure the ScaleLink and communicating device (indicator) are disconnected from power.
2. Run the communication cable through the strain-relief and wire to the **RS422** Terminal. See Fig. 7 & table below:



DISPLAY & LEDS

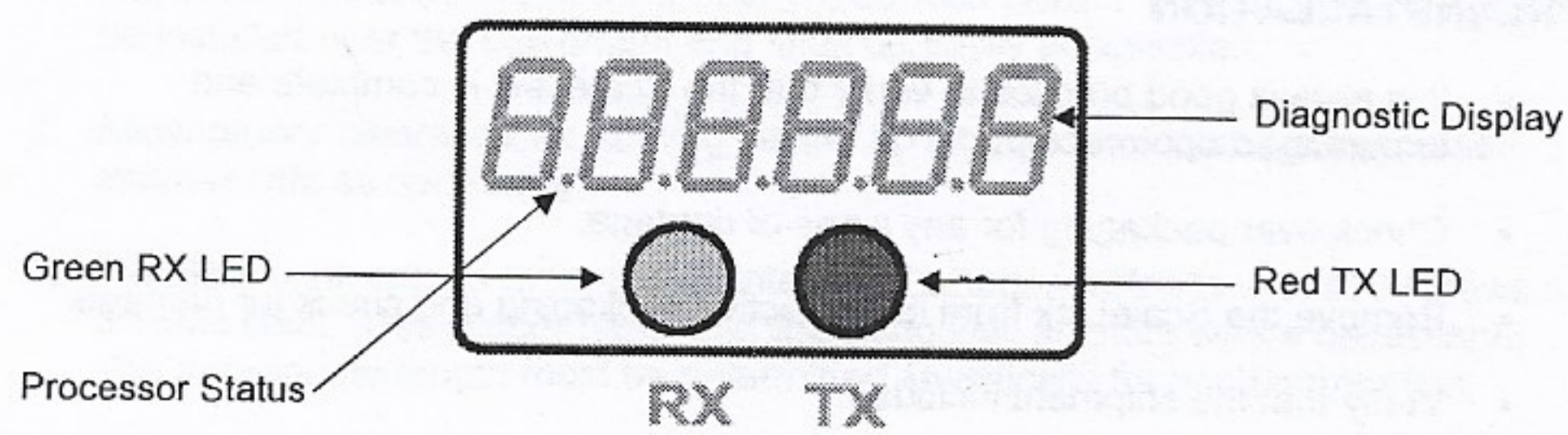


Fig. 3: ScaleLink Display

Display

- 6 digits (7 segments each).
- In *Auto Connect Mode*: Displays the scale weight as Auto-Learned from the connected indicator.
- In *Direct Connect Mode*: Displays the number of characters received and/or transmitted over the air by the ScaleLink's radio.
- In *Set-Up Mode*: Displays Set-Up Menu, parameters and settings. For more information on ScaleLink Set-Up Mode, see page 12.

Processor Status LED (The leftmost decimal point LED)

- In *Auto Connect Mode*:
 - **Rapid blinking** (3 times per second) indicates that the ScaleLink is in Auto-Learn Mode, attempting to interpret a data string.
 - **Regular blinking** (Once per second) indicates that the ScaleLink has successfully learned a data string and the processor is running properly.
- In *Direct Connect Mode*: Indicates the processor is running properly.

Red TX LED

- Flashes each time a character is received from the ScaleLink com ports and transmitted over the air by the radio.

Green RX LED

- Flashes each time a character is received over the air by the radio and transmitted out the ScaleLink com ports.

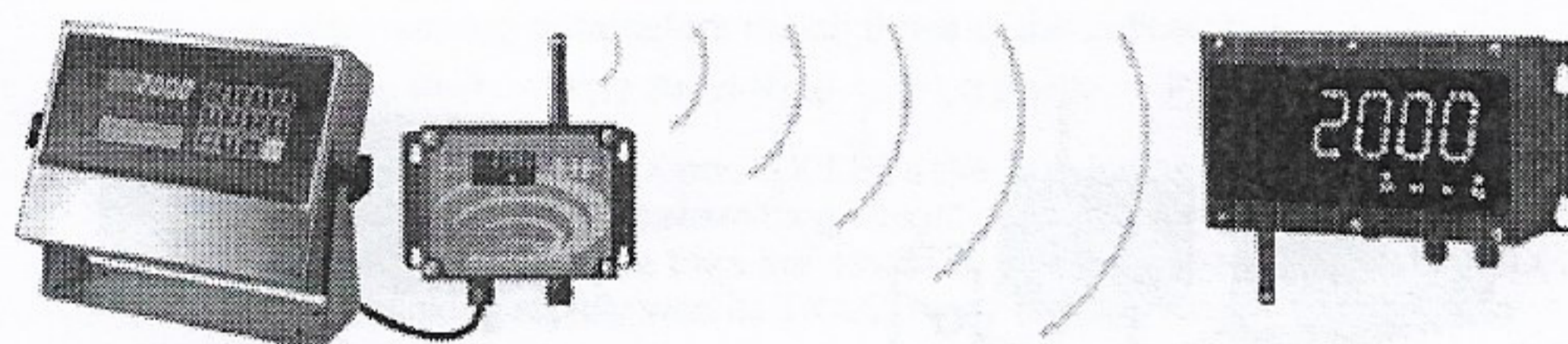
SCALELINK EXAMPLES

Follow these examples of common ScaleLink applications. Remember, the ScaleLink can be used to replace any serial communication cable!

EXAMPLE 1: SCALE INDICATOR TO AURORA REMOTE DISPLAY

- Equipment:
- Scale Indicator
 - Aurora Remote Display with integrated wireless option
 - ScaleLink Wireless Transceiver

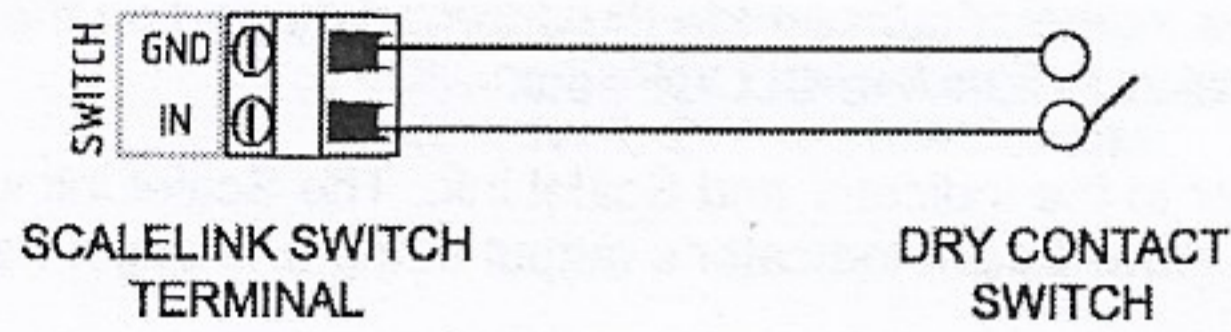
1. Ensure power is disconnected from the indicator and ScaleLink.
2. Connect the indicator com port to the appropriate port on the ScaleLink. RS232 to RS232, 20mA to CLOOP, etc.
3. Apply power to the indicator and ScaleLink. The ScaleLink will take a moment to **Auto-Learn** indicator's output string and begin transmitting.
4. The scale weight will be displayed on the ScaleLink's display and the TX light (red LED) will blink to indicate the radio is transmitting. If the TX light does not come on, verify that the indicator is outputting **CONTINUOUSLY**.
5. Power up the wireless Aurora display. Verify that the Aurora is correctly displaying Weight, Measurement Units (kg, lb), and Weighing Mode (GR, NT) as shown on the scale indicator.
6. Aurora displays do not transmit any data. If the ScaleLink's RX light (green LED) flashes, or if the Aurora's readings are incorrect, erratic, or very slow, a different radio channel may need to be selected.



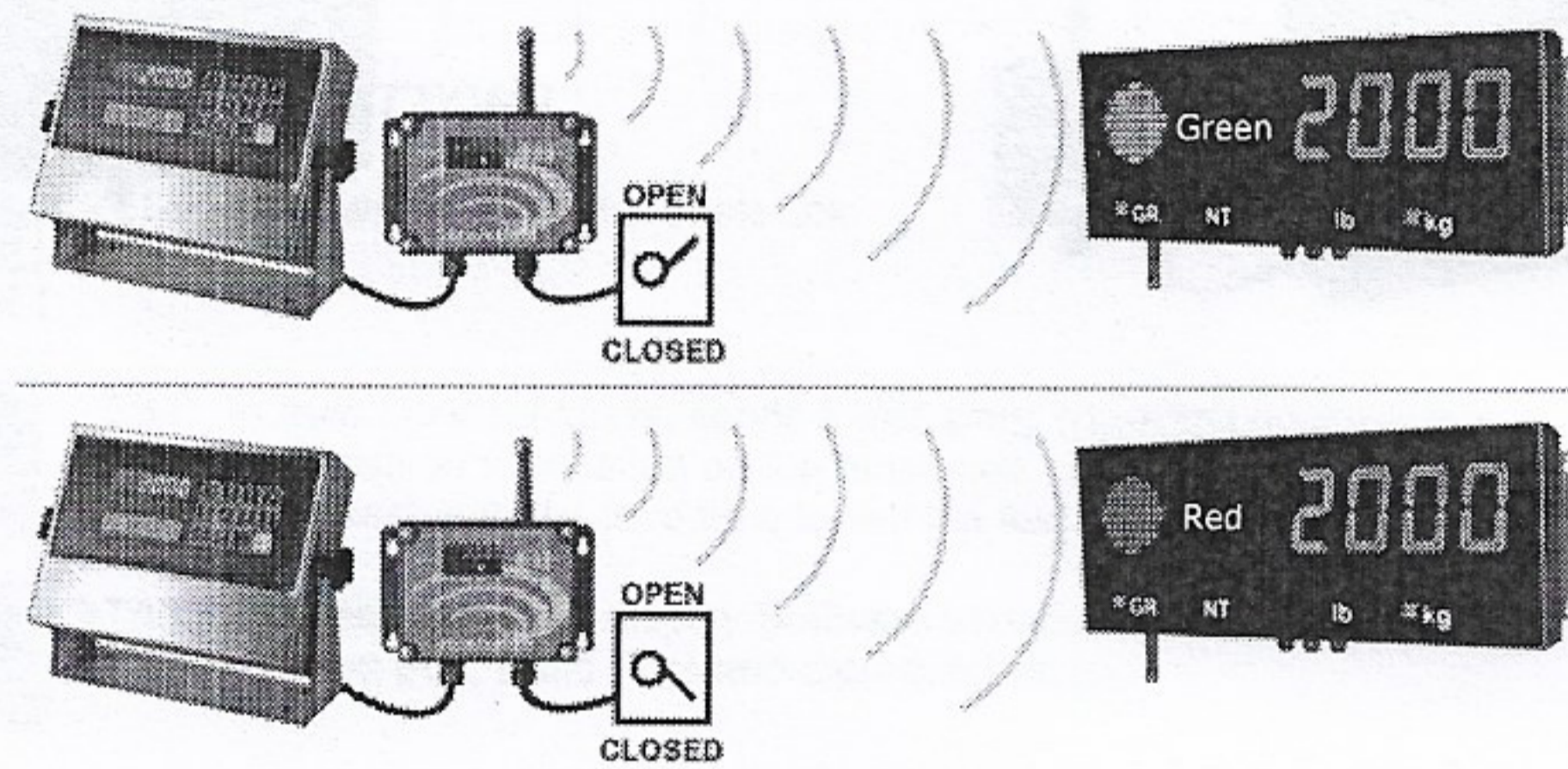
EXAMPLE 2: INDICATOR TO AURORA 45 SL (TRAFFIC LIGHT CONTROL)

- Equipment:
- Scale Indicator
 - Aurora 45 SL Display with integrated wireless option
 - ScaleLink Wireless Transceiver
 - Dry contact, Push-to-make switch

1. Ensure power is disconnected from the indicator and ScaleLink.
2. Connect the indicator com port to the appropriate port on the ScaleLink. RS232 to RS232, 20mA to CLOOP, etc.
3. Connect a dry contact, push-to make switch to the SWITCH terminal on the ScaleLink. **DO NOT** supply any external power to this terminal!



4. Apply power to the indicator and ScaleLink. The ScaleLink will take a moment to **Auto-Learn** indicator's output string and begin transmitting.
5. The scale weight will be displayed on the ScaleLink's display and the TX light (red LED) will blink to indicate the radio is transmitting. If the TX light does not come on, verify that the indicator is outputting **CONTINUOUSLY**.
6. Power up the wireless Aurora display. Verify that the ScaleLink to Aurora connection the same way as in Example 1.
7. Test the switch. The default condition for the switch (contact open) is a GREEN light. When the switch contact is closed, the light turns RED.



EXAMPLE 3: INDICATOR TO PC (2 WAY COMMUNICATION)

- Equipment:
- Scale Indicator
 - PC
 - 2 ScaleLink Wireless Transceivers

Indicator Side

1. Ensure power is disconnected from the indicator and ScaleLink.
2. Connect the indicator com port to the appropriate port on the ScaleLink. RS232 to RS232, 20mA to CLOOP, etc.
3. Apply power to the indicator and ScaleLink. Enter the ScaleLink's Set-Up Mode and select **Direct Connect** from P1.0.
4. Ensure the following parameters match those of the indicator:
 P1.1 Com Port P1.2 Baud Rate P1.3 Parity P1.4 Stop Bits
5. Exit Set-Up Mode.

PC Side

1. Ensure power is disconnected from the PC and ScaleLink.
2. Connect the PC com port to the appropriate port on the ScaleLink. This will usually be RS232 and a 9 pin connector may be required.

| SCALELINK RS232 TERMINAL | PC SERIAL PORT |
|--------------------------|-----------------|
| TX | PIN 2 (RX) |
| RX | PIN 3 (TX) |
| COM | PIN 5 (SIG GND) |

3. Apply power to the ScaleLink and boot the PC. Enter the ScaleLink's Set-Up Mode and select **Direct Connect** from P1.0.
4. Ensure the following parameters match those of the indicator:
 P1.1 Com Port P1.2 Baud Rate P1.3 Parity P1.4 Stop Bits
5. Exit Set-Up Mode. Verify TX and RX LEDs are blinking as expected. For example, if the indicator is transmitting weight continuously, its ScaleLink TX LED should be much more active than the other. In this case, the PC ScaleLink RX LED will be blinking rapidly with its TX LED only blinking when the occasional command is sent.



TROUBLESHOOTING & ERROR MESSAGES

| | |
|---|---|
| Unit won't power up: | <ul style="list-style-type: none"> • Verify power source (Breakers, outlets, adapters, etc.) • Check power connections to the ScaleLink board 9VDC terminal. |
| Display reads "Err 1": | <ul style="list-style-type: none"> • Baud Rate Auto-Learn has failed. • Verify the correct terminal (RS 232, 422, CLOOP) is being used. • Verify cable connection to indicator (TX to RX, etc). • Verify that data is being CONTINUOUSLY transmitted to the ScaleLink from the indicator and that the data string contains numeric characters. |
| Display reads "Err 2": | <ul style="list-style-type: none"> • Data String Auto-Learn has failed. • Verify the correct terminal (RS 232, 422, CLOOP) is being used. • Verify cable connection to indicator (TX to RX, etc). • Verify that a data string is being sent to the ScaleLink CONTINUOUSLY from the indicator and that the data string contains either an STX character (ASCII 02) or a CR character (ASCII 13). |
| Display reads "Err 3": | <ul style="list-style-type: none"> • The ScaleLink is receiving data on multiple communications ports. |
| Display reads "Err 4": | <ul style="list-style-type: none"> • The Radio Module has not been detected. |
| Dashes across the display: | <ul style="list-style-type: none"> • Communications have failed or been interrupted after Auto-Learn in <i>Auto Connect Mode</i>. • Verify cable connection to indicator. • Verify indicator serial port function. |
| Processor Status LED light NOT blinking (Consistently OFF or ON): | <ul style="list-style-type: none"> • Verify that unit has power. If so, cycle the power. If the Status light remains OFF, the processor is not running. |
| Processor Status LED blinking (3xsecond) for over 1 min in Auto Connect Mode: | <ul style="list-style-type: none"> • The ScaleLink is not able to Auto-Learn the data string or baud rate. See Error Messages "Err 1" and "Err 2". |
| TX LED doesn't flash: | <ul style="list-style-type: none"> • The ScaleLink is not receiving data from the com ports. |
| RX LED doesn't flash: | <ul style="list-style-type: none"> • The ScaleLink is not receiving data over the air from another ScaleLink. |