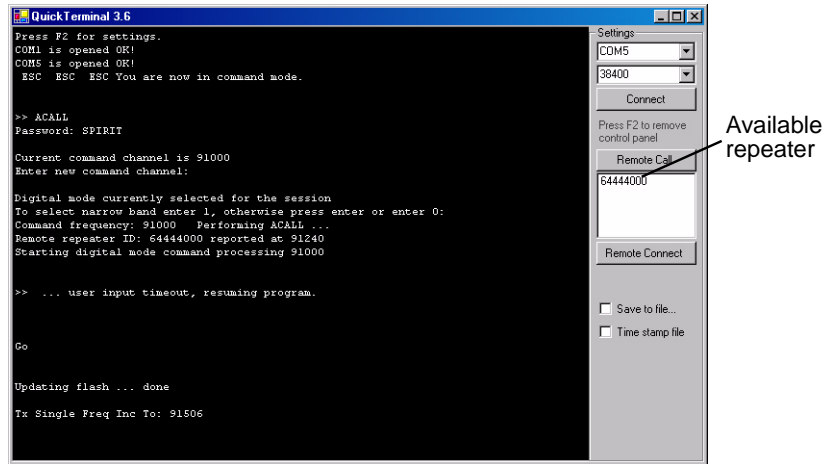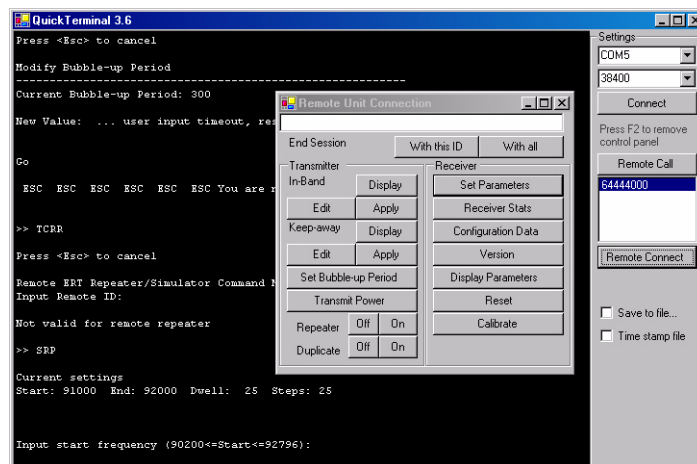| Step	Action
4	Press **Enter** to accept Digital mode. The All Call starts and available repeaters display in the Control Panel Remote Call list.

Available repeater

| **5** | Select a repeater from the list and click **Remote Connect**. The Repeater Configuration dialog appears. |

Ending a Communication Session

After a short amount of time, all of the repeaters that responded to an all call will return to their programmed frequencies and continue to operate.

To return a repeater to its normal operation prior to the timeout, do this:

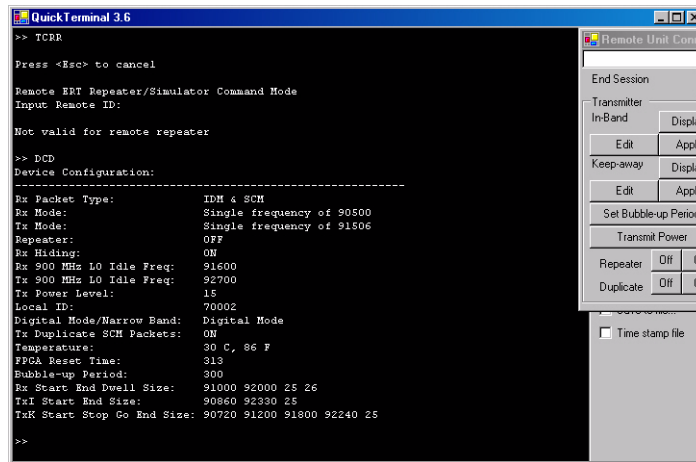- From the Remote Unit Connection dialog, click **With this ID**.

To return all of the repeaters that responded to normal operation, do this:
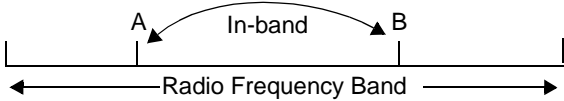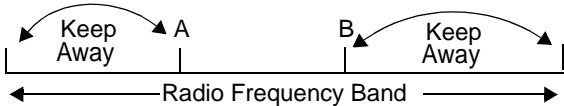
- From the Remote Unit Connection dialog, click **With All**.
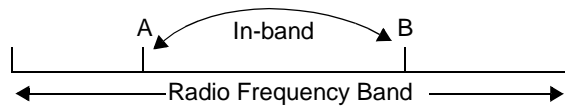
Display Current Configuration

To display the current configuration of the repeater, do this.

- From the Repeater Display group, click **Configuration Data**. The configuration of the selected remote unit displays.

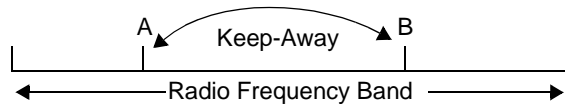| Parameter	Description
RX Packet Type	Indicates the message type that the repeater is listening for: SCM, IDM or both.
RX Mode	Mode in which the repeater is receiving messages. Hop mode (random, sequence, or interleaved). Default is interleaved
Tx Mode	Transmit mode determines the range of frequencies that the transmitter will use to communicate. • **In-Band** Communication happens between two specific frequencies. See TxI for more information. • **Keep Away** Communication happens anywhere but between the specified frequency points. See TxK for more information.
Repeater	Indicates whether the repeater is forwarding raw messages. If set to off, the repeater is receiving ERT data but not forwarding that data on to a collector.
Tx Power Level	Amount of power that the repeater uses to forward messages. Default is 20
Local ID	The repeater identification number.

Parameter	Description
Digital Mode/Narrow Band	Indicates the Band mode that repeater is connected in. Digital mode is used for configuration. Narrow band is used during general repeater operation.
FPGA Reset Time	Prevents radio frequency from wandering over time by resetting it periodically. Multiplied by 10, the number of seconds between receiver resets.
Bubble-up Period	The frequency of diagnostic message bubble-up. Multiply by 10 to get number of milliseconds. This parameter is used for Itron diagnostic purposes.
Rx Start End Dwell Size	Starting frequency, ending frequency, dwell length of time, and size (see *Display Receiver Parameters* on page 24 for more information).
TxI Start End Size	Trasmit in-band settings. • **Start** - Point A frequency • **End** - Point B Frequency • **Size** - The number of hops or steps between point a and point b. The higher the number of steps, the more granular the data.
TxK Start Stop Go End Size	Transmit keep away settings. • **Start** - Indicates the start of the band • **Stop** - The beginning of the keep away. Point A in the example. • **Go** - The amount of band to skip. Point B in the example. • **End** - End of the band • **Size** - Number of hops or steps in the entire band. The higher the number of steps, the more granular the data.

Setting Communication Mode

Overview

When communicating with the ERT endpoint, the repeater transmits and receives using a 900 MHz radio. The repeater transmitter and receiver can each be configured to operate on a single receive frequency or to periodically switch, or hop, to a different frequency that is defined in a hop table.

For each entry in a hop table, the repeater will transmit or receive at the defined frequency, dwell at the frequency for the specified time (in milliseconds), and then hop to the next table entry frequency. Hopping can be either sequential or random.

Using In-Band Transmitter Mode

In-band transmitter mode narrows the frequency band by specifying two points in the band and limiting transmission to frequencies between those two points.

To display the current settings for in-band mode, do this:

- Click **Display**. The settings display in the Data view.

To edit the In-Band settings, do this:

- Click **Edit**. Change the settings as desired.

To set repeater to use in-band mode, do this:

- Click **Apply**. The repeater will use the in-band mode settings.

Using Keep-Away Transmitter Mode

Keep-Away transmitter mode narrows the frequency band by specifying two points in the band and limiting transmission to frequencies outside those two points.

To display the current settings for Keep-Away mode, do this:

- Click **Display**. The settings display in the Data view.

To edit the keep-away settings, do this:

- Click **Edit**. Change the settings as desired.

To set repeater to use keep-away mode, do this:

- Click **Apply**. The repeater will use the in-band mode settings.

Set Bubble-Up Period

You may change the diagnostic bubble-up message frequency, if desired. To set the bubble-up period, do this:

- Click **Set Bubble-up Period**. Enter the new bubble-up rate.

Change Transmitter Power Setting

The radio transmission power setting may be altered according to the needs of your deployment. For example, you may wish to reduce radio power for a repeater that is close to a collector to minimize radio "noise." To change the transmitter power setting, do this:

- Click **Transmit Power**. Enter a new transmission power.

Enable/Disable Message Forwarding

For diagnostic purposes, you may wish to prevent a repeater from forwarding, or repeating, the messages it receives from an ERT endpoint. To enable or disable message repeating, click Repeater **Off** or **On**.

DRAFT

Enable Duplicate Filter

By default, a repeater does not filter duplicate readings and repeats all readings. To enable the duplicate filter, click Duplicate **On**. Only new readings will be forwarded.

Configuring Receiver Radio

Set Receiver Parameters

The Set Receiver Parameters option displays the current receiver settings and allows you to adjust those settings as needed. To set the receiver parameters, do this:

- From the Receiver group, click **Set Parameters**. The current parameters display in the data window. Enter the new parameters, as needed.

Receiver Parameter	Description
Start	The starting frequency for the receiver.
End	The ending frequency for the receiver.
Dwell	The number of milliseconds the repeater receiver will remain at this frequency. Multiply this value by 10 for the number of milliseconds.
Steps	The total number of steps between Rx Start and Rx End.

View Receiver Statistics

Use Receiver Statistics to view the current state of receiver settings.

Receiver Parameter	Description
Seconds since clear	Indicates the number of seconds that have passed since the last reboot. To avoid data corruption, the repeater periodically reboots to its initial state.
RX Packet Type	Indicates the type of packets that are repeated: SCM or IDM message packets, or both types.
SCM Good/Bad RX	Indicates the number of normal and corrupted SCM message packets received since the last reboot.
IDM Good/Bad RX	Indicates the number of normal and corrupted IDM message packets received since the last reboot.
CMD Good/Bad RX	Indicates the number of successful and unsuccessful commands issued since the last reboot.

Display Current Version

To display the current version of the repeater firmware, do the following steps.

• From the Repeater group, click **Version**. The version of the selected remote unit displays.

Parameter	Description
Application Version	Firmware version of the repeater
Build Date and Time	Save date and time of the firmware version
Repeater Type	Type of repeater - pole-mount or sleeve-mount
Configuration	Current configuration of the firmware

Display Receiver Parameters

The Display Receiver Parameters option displays the current receiver settings. To view the receiver parameters, do this:

• From the Receiver group, click **Display Parameters**. The current parameters display in the data window.

Receiver Parameter	Description
Start	Starting frequency for the receiver
End	Ending frequency for the receiver
Dwell	Number of milliseconds the repeater receiver will remain at this frequency. Multiply this value by 10 for the number of milliseconds.
Steps	Total number of steps between Rx Start and Rx End.

Reset Receiver

If needed, you may manually reboot the repeater. The reset command reboots the repeater and radio. To reset the receiver, do this:

• Click **Reset**. The repeater will reboot.

Calibrate Receiver

Calibration returns a repeater to its default configuration. To calibrate a repeater, do this:

• Click **Calibrate**. The repeater returns to original factory settings and reboots.