

## F3161/F5061 Software v5.1 and Firmware v5.4 Release Notes

To use the following features and enhancements, firmware v5.4 must be loaded in the radio. Legacy "Message Base" roaming settings for Multi-Site Trunking applications can also be programmed into this software.

### Summary

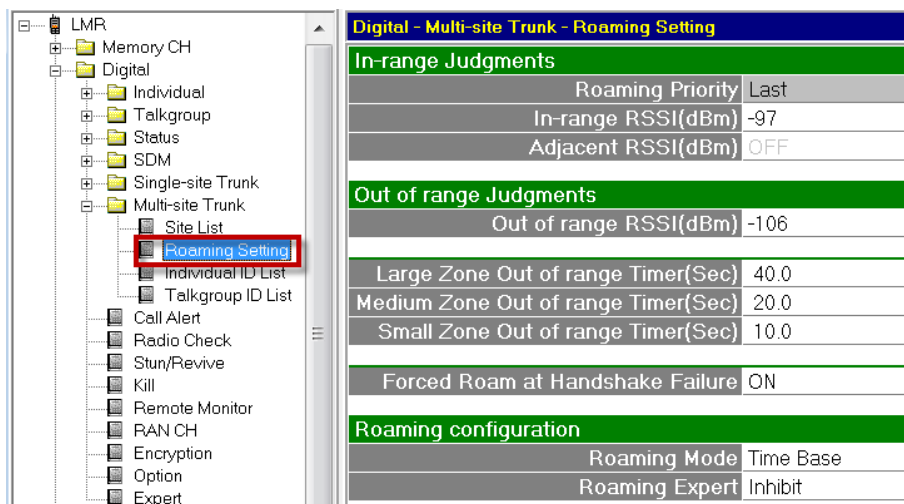
1. Enhancement Update: *New "Time Base" Roaming settings.* Alternate, easier to understand registration and de-registration settings. Time base roaming looks at RSSI levels-over-time and can be programmed for Multi-site Trunking use.
2. *Minor Update:* Busy Channel Lockout (transmit) now functions properly when the radio is used with a Kenwood Nexedge repeater in conventional mode.
3. Enhancement Update: The software COM Port field now shows only the available Com ports to enable quicker port selection.
4. Enhancement Update: The software Read/Write password (clone) has been improved by adding a confirmation field when you enter a password. This helps prevent entering an incorrect password.

### Detailed Description

#### New Roaming Settings

New roaming settings allow you program RSSI (Received Signal Strength Indicator) settings into the subscriber radios, allowing them to make de-registration and registration decisions based on the RSSI levels of signals from the repeater sites.

#### Digital/Multi-site Trunk/Roaming Setting



Digital - Multi-site Trunk - Roaming Setting	
<b>In-range Judgments</b>	
Roaming Priority	Last
In-range RSSI(dBm)	-97
Adjacent RSSI(dBm)	OFF
<b>Out of range Judgments</b>	
Out of range RSSI(dBm)	-106
Large Zone Out of range Timer(Sec)	40.0
Medium Zone Out of range Timer(Sec)	20.0
Small Zone Out of range Timer(Sec)	10.0
Forced Roam at Handshake Failure	ON
<b>Roaming configuration</b>	
Roaming Mode	Time Base
Roaming Expert	Inhibit

## Roaming Configuration

Roaming configuration	
Roaming Mode	Time Base
Roaming Expert	Inhibit

**Roaming Mode: Time Base.** This setting enables new RSSI/Time Base roaming parameters. If set to **Message Base**, the **Time Base** settings in this screen are disabled and the radio uses the legacy message errors protocol.

## In-Range Judgments

Used during the roaming process for making decisions on which sites the subscribers will attempt to register on.

In-range Judgments	
Roaming Priority	Last
In-range RSSI(dBm)	-97
Adjacent RSSI(dBm)	OFF

### **Roaming Priority:**

Set the desired roaming method as described in the Multi-site Trunking Configuration Guide.

- **Last-** During roaming, the radio first looks at last site the radio was registered on, followed by the Home Site, then Adjacent Sites. If none of these sites are available, the subscriber looks at the remaining sites.
- **Home-** During roaming, the radio first looks at its programmed “Home” site, followed by the programmed Adjacent Sites. If none of these sites are available, the subscriber looks at the remaining sites.
- **Adjacent-** This is also called “Strongest Site Search” and allows the radio to find Adjacent Site RSSI signals and choose the strongest one. This can add time to the roaming process but can result in the radio staying on that superior site longer.

**In-range RSSI:** Enter the desired minimum RSSI level for the radio to consider a new site when making roaming/registration decisions in **Last** or **Home** roaming. For example: a setting of -97 results in the subscriber, *while roaming*, attempting to register on the first site it sees that is stronger than -97dBm.

**Adjacent RSSI:** If the **Roaming Priority** is set to **Adjacent**, the radio will scan all adjacent sites (as programmed in the last registered site’s UC card *Site Management* screen) for the strongest signal that is higher than the *In-Range RSSI* setting, but will immediately stop the search and attempt to register if it sees an RSSI that is stronger than the *Adjacent RSSI* setting.

## Out of Range Judgements

While a radio is registered on a site, it decides if it should stay registered or start roaming based on the RSSI level over a specified period of time.

Out of range Judgments	
Out of range RSSI(dBm)	-106
Large Zone Out of range Timer(Sec)	40.0
Medium Zone Out of range Timer(Sec)	20.0
Small Zone Out of range Timer(Sec)	10.0
Forced Roam at Handshake Failure	ON

**Out of range RSSI:** Sets an RSSI level to begin roaming. If a received RSSI gets weaker than this value for a period equal to or greater than the **Out of range Timer** corresponding to that site “size”, the radio will begin roaming.

**Out of range Timer: Leave at Default.** This sets the time period for RSSI averaging. If the **Out of Range RSSI** value gets weaker consistently for this time period, the radio will roam. Each site in a system can be set as a large, medium or small zone; there should be a corresponding value set for each size zone.

**Note:** Each zone size is assigned in the Site Manager repeater as a Large, Medium, or Small site. The subscriber sees that assignment for its particular site, and uses the corresponding settings in the Out of Range Judgements Screen to determine the need for roaming. For example: a Small zone assignment tells the subscriber to look at the average RSSI for only 10 seconds, and if it is weaker than the **Out of Range RSSI**, it goes into roaming. A Small Zone results in radios going into roam very quickly. A Large Zone requires the subscriber to look at that RSSI for a full 40 seconds to make that decision, thus it will stay on a Large Zone longer.

**Forced roam at Handshake Failure: “On”-** A subscriber deregisters and roams if an attempted handshake fails after the number of attempts set in the *Digital-Expert-Timing-Attempt Number* settings in the software. This can occur when the site downlink power is much greater than the subscriber’s uplink power. **“Off”-** Radio stays registered even if multiple handshake attempts result in failure.

**Roaming Expert- Leave at default.**

## Update Priority Legend

Critical Update	Icom strongly recommends an immediate update.
Important Update	Icom recommends as an important update, but is performed at dealer discretion.
Minor Update	A low priority update that has minimal impact on a current system.
Enhancement Update	An added feature or improved programming setting.