

# OTAR Check List

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### Initial Process

#### Step 1

Radio Registration on the System.

1. Power up the radio under test and select the correct channel.
2. The radio will attempt to register with the system.
3. The registration process is 4 events so 4 flashes of the LEDs will be seen (See Note this step).

LED: TX, RX, RX, TX – Best registration.

The following are acceptable, however; additional investigation as to why the radio under test requests for registration are repeated.

LED: TX, TX, RX, RX, TX – Acceptable registration.

LED: TX, TX, TX, RX, RX, TX – Acceptable registration.

LED: TX, TX, TX, TX, RX, RX, TX – Acceptable registration.

Note: The LED flash sequence can be the same for a rejected registration. The result is that a successful data exchange happened, however; the KMF needs to be set to accept the Unit ID registration (See Step 1 in KMF Configuration).

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### Step 2

Send Unencrypted Hello to Unit (Radio under test P25 Unit ID).

1. Select Unit ID of the radio under test in the KMF interface.
2. Select Unencrypted Hello Button.
3. View Success/Failure results on KMF unit communication status display.

#### Step 2 Success

Move on to Step 3.

#### Step 2 Failure

Check Radio registration status in KMF. The KMF should show an error message for an attempt to send a message to an un-registered unit.

#### Not Registered

Check that the Radio P25 Unit ID, Radio TGTRSI, and KMFRSI match KMF settings for the Unit.

Or

Check radio for high TX or RX distortion.

## **Re-Key Unit (Full)**

The radio under test does not have any TEK keys loaded so the radio under test can not decrypt the messages from the KMF. The KMF has a method to load an initial TEK key into the radio under test. The message that loads the initial TEK key is the "Warmstart" message which loads a Temporary TEK key to decrypt the messages. The Warmstart TEK key is encrypted with the KEK key that is loaded in the radio under test (if the KEK does not have the correct Algorithm ID, Key ID, or the correct Key then the decryption of the TEK key will fail and so will the re-key process since the radio under test can not decrypt the messages).

The KMF can determine that the radio under test does not have the TEK keys to decrypt the messages and will send a Warmstart message.



## Troubleshooting

### Registration:

For registration to operate correctly; only the TX and RX frequency, TX and RX NAC, and P25 Unit ID information need be correct and OTAR enabled for the current channel (Radio Editor).

### Hello:

For hello to work, the radio TGTRSI and KMFRSI (Keyloader) should be set. If correct, an unencrypted hello should work. Radio TGTRSI must match the P25 Unit ID.

### Rekey:

If an unencrypted hello works, and the KEK keys in the KMF match those in the radio, a rekey should work. If the unit entry in the KMF is not new (being used to match a new or zeroized unit), the Last Message Number recorded for that unit will not match the new unit and the KMF will reject messages. The simplest solution is to delete and recreate the unit entry in the KMF.

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