

**MOBILE SUBSCRIBER  
RADIOTELEPHONE TERMINAL  
(MSRT) EQUIPMENT  
PERFORMANCE CHECKLIST**

**GENERAL PURPOSE  
USER (GPU)**

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PROBLEM	PROBLEMS INDICATION	CORRECTIVE ACTION
7. Low DC power.	7. ALARM indicator is on. DSVT rings.	7. Turn RT-1539 OFF/BLACKOUT/ON switch to OFF, start vehicle. Turn RT-1539 OFF/BLACKOUT/ON switch to ON. If vehicle takes longer than 20 seconds to start, you must reaffiliate your MSRT.
8. Problem external to RT-1539.	8. ALARM indicator is flashing DSVT may ring.	8. Check cable connections, antenna, and DSVT connections. If all connections are correct, call BSO/maintenance personnel.
9. Poor voice communications.	9. a. Voice quality is poor. b. You are on the move and your voice quality starts to fade out.	9. a. Go on hook, then off hook, and redial subscriber. b. Go on hook, stop the vehicle, and turn REMOTE POWER switch or RT-1539 OFF/BLACKOUT/ON switch to OFF. Leave RT-1539 turned off longer than 20 seconds. Turn RT-1539 on, reaffiliate the MSRT, and place the call again.

NOTE: At any time, if FREQ PLAN indicator is flashing and AFFILIATION indicator is off, you must reaffiliate your MSRT.

PROBLEM	PROBLEMS INDICATION	CORRECTIVE ACTION
4. Wrong PC entered (only after a successful disaffiliation from the system).	4. LOADED DIR PLAN indicator flashes (must have been affiliated at some time in the network). Error tone is heard in DVST.	4. Verify PC and attempt to reaffiliate. (Remember - after 4 attempts you will be blacklisted) After 3d attempt if indicator is still flashing, dial "O" for operator.
5. Blacklisted.	5. Loaded DIR NO. AFFILIATION, and TRAFFIC/SCANNING indicators are flashing. Error tone is heard in DSVT.	5. a. Refer to the phone directory for procedures or call BSO. b. Dial "O" for operator to be removed from blacklist.
6. RAU saturation.	6. AFFILIATION indicator is flashing. Dial tone is heard in DSVT.	6. Only high precedence calls (immediate and above) may be processed. If your call requires high precedence, use it (if you have that capability). Otherwise, wait until indicator stops flashing and make your call.

PROBLEM	PROBLEMS INDICATION	CORRECTIVE ACTION
1. DN refused during affiliation.	1. TRAFFIC/SCANNING indicator flashes then becomes solid while DN is being confirmed. If DN is not confirmed, the TRAFFIC/SCANNING indicator goes from solid to flashing. Error tone is heard in DSVT.	1. Ensure correct DN is used. Dial "O" for operator assistance or call BSO.
2. RT-1539 M key mismatch.	2. CRYPTO ALARM, TRAFFIC/SCANNING, and AFFILIATION indicators are flashing. Error tone is heard in DSVT.	2. Reset RT 1539 by turning the OFF/BLACKOUT/ON switch to OFF, then to ON. If M key mismatch occurs again, reload M key in RT-1539.
3. Unable to find RAU marker.	3. After 2 minutes, FREQ PLAN indicator starts to flash, AFFILIATION indicator is off, and the TRAFFIC/SCANNING indicator is flashing. Error tone is heard in the DSVT.	3. Reset RT-1539 by turning the OFF/BLACKOUT/ON switch to OFF, then to ON. Attempt to affiliate. If affiliation fails: a. RAU in your area may not be up. Seek information on network from BSO. b. You may be out of RAU coverage area. If mission allows and if directed by commander, move to a new location (preferably higher ground).

ADENDUM	PERFORM BUILT-IN TEST (BIT)	
STEP	ACTION	CORRECTIVE ACTION
	<b>NORMAL INDICATION</b>	<b>ABNORMAL INDICATION</b>
1.	All RT-1539 are on.	1. One or more indicators are off.
2.	DSVT rings Answer on 1st ring (will ring 3 times and time out)	2. DSVT does not ring.
3.	Error tone is heard if not affiliated. Dual tone is heard if affiliated.	3. No tone heard.
a.	Wait tone is heard, then nonsecure indicator tone.	1. Call BSO/maintenance personnel.
b.	Nomenclature warning tone and sade tone are heard.	2. Call BSO/maintenance personnel.
c.	End of BIT test.	3. Attempt BIT test again. If same abnormal condition exists, call BSO/maintenance personnel.
	<b>FREQUENCY PLAN INTERROGATION (Used to Verify Frequency Plan)</b>	
1.	Error tone is heard.	1. Error tone is not heard.
2.	FREQ PLAN indicator will have one of the following conditions.	1. Ensure hook switch on DSVT is not in the locked position.
a.	OFF - Plan not loaded, (busy tone).	
b.	Flashing - Current plan loaded, activated (dial or error tone.)	
c.	ON - Plan loaded but not active (dial or error tone).	

ACTION	INDICATIONS	CORRECTIVE ACTION
	b. TRAFFIC/SCANN indicator on RADIO flashes--searching for RAU marker.	b. Same as 3 above.
	c. When RAU marker is found, TRAFFIC/SCANN indicator is on solid.	
	d. When Node Center verifies numbers, MARKER/AFFILIATION on RADIO is on solid.	
<b>MAKE A CALL</b>		
1. Lift handset on TELEPHONE.	1. Dial tone is heard in handset.	1. Check status of network. Check alarm indicator on RADIO; if flashing or on, call BSO/Maintenance.
2. On TELEPHONE, enter 7 digit number of desired party.	a. Call is completed. (Waiting tone is heard while network searches for number--may take several seconds). b. Busy tone is heard (Subscriber called is busy or network is saturated).	a. If dial tone is heard while trying to place call, hang up and redial. If problem still exists call BSO/Maintenance. b. If busy tone is heard while trying to place call, hang up and redial. If problem still exists call BSO/Maintenance.

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GENERAL PURPOSE USER (GPU)

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COMPONENTS OF THE MSRT ..... P. 2

PROCEDURE 1: POWER UP ..... P. 3

**\*NOTE:** Steps 2 & 3 apply to MSRTs not previously loaded with crypto keys, or when changing crypto keys. Perform these steps only when the CRYPTO ALARM indicator is ON, or when you have been instructed to change a key.

PROCEDURE 2: LOAD CRYPTO M KEY IN RADIO ..... P. 3

PROCEDURE 3: LOAD CRYPTO KEYS IN TELEPHONE ... P. 4

**\*NOTE:** Step 4 applies to MSRTs that have not been loaded with frequency plans. Perform this step only if LOADED FREQUENCY PLAN indicator is OFF.

PROCEDURE 4: LOAD FREQUENCY PLAN (MANUAL) ... P. 6

**\*NOTE:** Step 5 applies to MSRTs that are not affiliated with the network. Perform this step only if the MARKER/AFFILIATED indicator is OFF.

PROCEDURE 5: AFFILIATION ..... P. 6

PROCEDURE 6: MAKE A CALL ..... P. 7

MSRT PERFORMANCE CHECKLIST  
(GPU)

INSTRUCTIONS

1. This Job Aid covers 6 common operating procedures for the Mobile Subscriber Radio- Telephone Terminal (MSRT). The name of each procedure is presented in all capitals and is underlined.

2. Page i contains the INDEX. You should check the INDEX before performing a procedure for its page number and any other important information.

3. Page 2 contains pictorial representations of the components of the MSRT. Refer to this page when you are uncertain which component is the "RADIO", etc., and to locate dials and switches on the components.

4. When you locate the Procedure that you wish to perform, you will see that it is divided into 3 columns: ACTION, INDICATIONS, and CORRECTIVE ACTION.

For each numbered ACTION (1,2,3...) or subACTION (a,b,c...):

a. Read the ACTION column first.

b. Then read the INDICATIONS column that corresponds to it.

c. Next, perform the ACTION

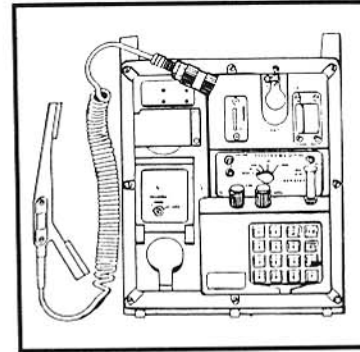
d. Check for the INDICATIONS. If you observe the proper INDICATION, then you are ready to read and perform the next numbered ACTION.

e. Whenever the proper INDICATION is not observed, or an improper indication is observed, the CORRECTIVE ACTION must be taken. When CORRECTIVE ACTION is taken, proper INDICATION should appear, and you can go on to the next ACTION.

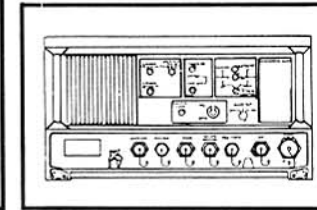
f. If you run into a problem, read the CORRECTIVE ACTIONS carefully and perform them thoroughly. Some CORRECTIVE ACTIONS require that you repeat several ACTIONS in sequence.

g. Some ACTIONS do not have INDICATIONS corresponding to them. Simply go on to the next ACTION.

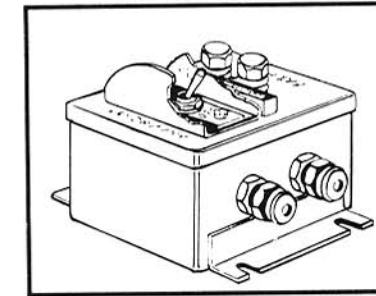
DSVT TELEPHONE



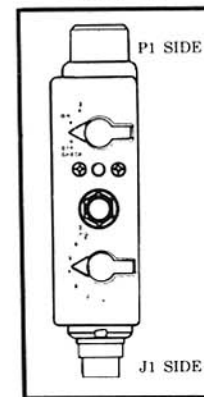
RT-1539 RADIO



Remote Power Switch  
(in Vehicle)



KYK-13



ACTION

POWER UP

1. Ensure FREQ PLAN dial on RADIO is in NETWORK position.

2. Ensure RAU/MSRT/Remote Control Dial is in upright (12 o'clock) position.

3. Turn POWER switch to ON (located above TELEPHONE in vehicle, or below RADIO in standalone).

4. Turn RADIO Dial labeled OFF/BLACKOUT/ON to ON.

INDICATIONS

1. Dial is in NETWORK position.

2. Dial is in upright position.

3. Switch stays on.

a. If cryptovariables have not been loaded, indicators are off, except for the RADIO's CRYPTO ALARM, which is on.

b. If cryptovariables have been loaded, all indicators are off.

c. If CRYPTO ALARM is flashing, take corrective action.

LOAD CRYPTO M KEY IN RADIO

1. Ensure FILL/ZERO Switch on RADIO is in center position (To change position, pull switch out to move).

2. Turn KYK13 Z/ON/OFF Dial to OFF.

3. Set KYK13 Z/ALL/654321 Dial to number of M key (number of M key is written on side of KYK13).

4. Push gray button on KYK13 to check that key is inside.

4. Parity indicator above gray button will flash (red light).

CORRECTIVE ACTION

1. If not in position, **DO NOT ATTEMPT TO CHANGE POSITION.** Call BSO/Maintenance.

2. If not in an upright position, change position with flathead screwdriver.

3. If switch trips off, call BSO/Maintenance.

a. Zero RADIO by moving ZERO/FILL Switch to ZERO, then return to center position.

b. Same corrective action as 4a above.

c. If cables are connected call BSO/Maintenance.

4. If parity indicator does not flash, notify supervisor that KYK13 is not loaded.

ACTION

5. Connect KYK13 to J3 fill connector on RADIO (push KYK13 in and to the right).

6. Turn KYK13 Z/ON/OFF Dial to ON.

7. To load M Key:

Push FILL/ZERO Switch on RADIO up 4 times.

8. Turn KYK13 Z/ON/OFF Dial to OFF.

9. Remove KYK13 from fill connector.

LOAD CRYPTO KEYS IN TELEPHONE

1. Ensure VAR STOR Switch on TELEPHONE is in center position (to change position, pull up to move).

2. To Load U Key:  
a. Turn KYK13 Z/ON/OFF Dial to OFF.

b. Set KYK13 Z/ALL/654321 Dial to number of U key.

c. Push gray button on KYK13 to check that key is inside.

d. Connect KYK13 to fill connector on TELEPHONE (KYK13 upside down, but facing back seat).

e. Turn KYK13 Z/ON/OFF CHECK Dial to ON.

INDICATIONS

7. CRYPTO ALARM indicator goes off.

b. Number of U and M keys are written on back of KYK13, or ask supervisor.

c. Parity indicator above gray button will flash (red light).

c. If parity indicator does not flash, notify supervisor that KYK13 is not loaded.

CORRECTIVE ACTION

7. If indicator stays on, call BSO/Maintenance.

b. Parity indicator does not flash, notify supervisor that KYK13 is not loaded.

c. If parity indicator does not flash, notify supervisor that KYK13 is not loaded.

ACTION

f. Set FUNCTION SEL switch on TELEPHONE to LDU.

g. Move VAR STOR Switch on TELEPHONE to LOAD and release it.

3. To Load M Key:

a. Set KYK13 Z/ALL/654321 Dial to number of M key.

b. Set FUNCTION SEL Switch on TELEPHONE to LDX.

c. Move VAR STOR Switch on TELEPHONE to LOAD and release it.

d. Move FUNCTION SEL Switch on TELEPHONE to OP.

e. Turn KYK13 Z/ON/OFF Dial to OFF.

f. Remove KYK13 from fill connector

INDICATIONS

f. RING/BUSY indicator is on and NSW is flashing.

g. Two tones will be heard; one at the LOAD position and one at the center position.

b. RING/BUSY and NSW indicators on TELEPHONE are both on.

c. Two tones will be heard; one at the LOAD position and one at the center position.

d. RING/BUSY indicator is on and NSW indicator is flashing.

CORRECTIVE ACTION

f. If indicators are off, move FUNCTION SEL dial (on TELEPHONE) to DSBL, move VAR STOR Switch to ZERO, then back to center. Repeat action 2f; if problem still exists, call BSO/Maintenance.

g. If two tones are not heard, take same corrective action as 2f above.

c. If two tones are not heard, Zero DSVT by moving FUNCTION SEL Switch to DSBL. Move VAR STOR Switch to ZERO and then back to center. Repeat Action 3.

d. If both indicators are off, take corrective action 3c above.

ACTION

LOAD FREQUENCY PLAN (MANUAL)

1. Lift handset of TELEPHONE.

2. On TELEPHONE, enter: 8F + Freq Plan No. (2 digit no.) + R

3. Hang Up

4. Inspect LOADED FREQ PLAN indicator on RADIO.

AFFILIATION

1. Lift handset on TELEPHONE.

2. Enter on TELEPHONE: 8R + Personal Code + 7 digit number of MSRT you are operating

3. Listen for error tone.

4. HANG UP IMMEDIATELY

INDICATION

a. LOADED FREQ PLAN indicator is on.

b. LOADED FREQ PLAN indicator is off.

1. Error tone is heard.

a. LOADED DIR NO indicator on RADIO is on.

CORRECTIVE ACTION

2. If misdial occurs, hang up and redial.

a. Repeat actions 1 & 2.

b. Notify supervisor, or call BSO/Maintenance.

1. Check phone connections. If wires are connected correctly, check hook switch. Make sure it is unlocked--if so, call

3. Go on, then off hook. Reenter 8R + PC + 7 digit number. If the problem still exists call BSO/Maintenance.

a. Same as 3 above.