

# DEPARTMENT OF THE ARMY TECHNICAL BULLETIN

## OPERATION OF LIGHTWEIGHT DIGITAL FACSIMILE AN/UXC-7 WITH SINGGARS GROUND RADIO SETS

Headquarters, Department of the Army, Washington, DC

1 APRIL 1993

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1. **Purpose.** This technical bulletin provides the information and procedures for operating the Lightweight Digital Facsimile AN/UXC-7 with the SINGGARS family of ground radios. It is necessary that the operator be properly trained in the operation of the Lightweight Digital FAX and SINGGARS. This technical bulletin is a supplement for the purpose of interoperability.
2. **Application - Radio Sets.** The radio sets covered by this technical bulletin are AN/VRC-87, AN/VRC-87A, AN/VRC-88, AN/VRC-88A, AN/VRC49, AN/VRC-89A, AN/VRC-90, AN/VRC-90A, AN/VRC-91 , AN/VRC-914 AN/VRC-92 and AN/VRC-92A.
3. **References.** Refer to the following technical publications for normal operation and maintenance of the equipment:

<u>PUBLICATION NUMBER</u>	<u>DATE</u>	<u>TITLE</u>
TM 11-5815-815-10	1 September 1987	Lightweight Digital Facimile AN/UXC-7
TM 11-5820-890-10-1	1 September 1992	SINGGARS ICOM Ground combat Net Radio
TM 11-5820-890-10-3	1 September 1992	SINGGARS NON-ICOM Ground Combat Net Radio

4. **Equipment Setup Operation.** Assemble and install the radio set and Lightweight Digital FAX individually per applicable technical manuals. Perform Preventive Maintenance Checks and Services (PMCS) and/or Built-in-Test (BIT) functions. Load all frequencies hopsets, and variables into the radio set and establish voice communication before connecting the Lightweight Digital FAX to the radio set. Once voice Communication has been established, connect the Lightweight Digital FAX as described in the following paragraph.
5. **Cabling Instructions.** The following figure illustrates the typical configuration for the connection between the radio set and the Lightweight Digital FAX

- a. When the RT is in a vehicular use the following cabling instructions:
  - Connect Lightweight Digital FAX data cable from Lightweight Digital FAX connector to RT AUD/DATA connector.
  - Connect handset H-250/U to RT AUD/FILL connector.
- b. When the RT is in a vehicular mount, use the following cabling instructions:
  - Connect Lightweight Digital FAX data cable from Lightweight Digital FAX J1 connector to RT AUD/DATA connector.
  - Connect handset H-250/U to RT AUD/FIU connector.
  - Figure shows Lightweight Digital FAX connected to lower radio (RT-A).
  - Lightweight Digital FAX may be connected to upper radio (RT-B) if desired.

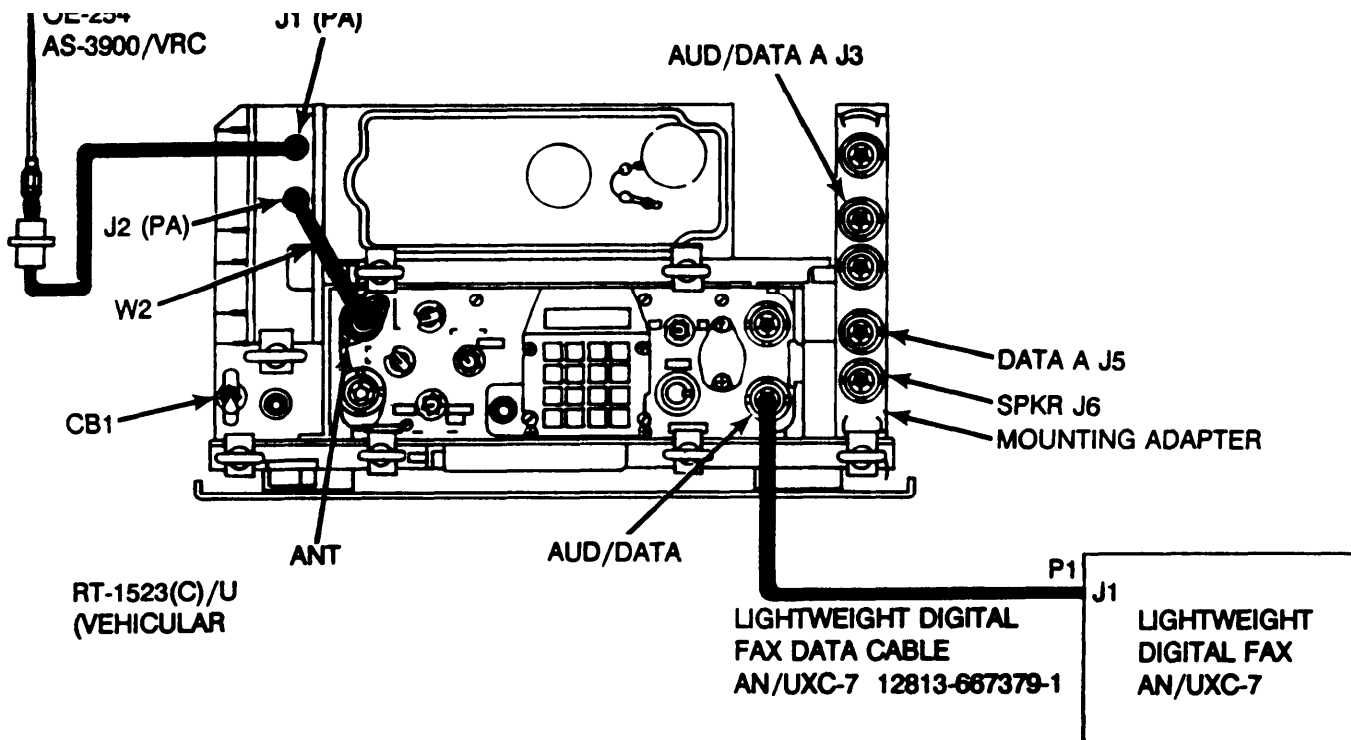


Figure 1. Cabling for Lightweight Digital FAX TO SINGARS Radio Set

**6. Switch Settings and Initialization.** The following tables provide the necessary switch settings and communication parameters for interoperability. Initialize the Lightweight Digital FAX for communication as shown in Table 6-2. Verify the switch settings for both the radio and the Lightweight Digital FAX; then establish communication on the net.

<b>SWITCH</b>	<b>ICOM RADIO</b>	<b>NON-ICOM RADIO</b>
<b>FUNCTION</b>	<b>SQ ON</b>	<b>SQ ON</b>
<b>MODE</b>	<b>SC or FH</b>	<b>SC or FH</b>
<b>DATA</b>	<b>4800 (high speed) 1200 (extended range/ jamming environment)</b>	<b>4.8 (high speed) 1.2 (extended range/jamming environment)</b>
<b>COMSEC</b>	<b>CT</b>	<b>(TSEC/KY-57) ON CT</b>
<b>*</b>	<b>OFF</b>	<b>N/A</b>

Table 6-1. SINGARS Radio Set

<b>ANGL SWITCH</b>	<b>DIGITAL</b>
<b>RESOLUTION - SPEED SWITCH</b>	<b>HI SP LOW RES</b>
<b>GRAY - B/W SWITCH</b>	<b>B/W</b>
<b>SELF TEST SWITCH</b>	<b>OFF</b>
<b>DATA COMPRESSION SWITCH</b>	<b>COMP</b>
<b>DATA FORMAT SWITCH</b>	<b>LDF</b>

Table 6-2. Lightweight Digital FAX AN/UXC-7

The following steps serve as a guide to the operation of the Lightweight Digital FAX with the RT-1523(C)/U or RT-1439/VRC:

- a. Load paper to be faxed.
  - b. Press MEMORY LOAD.
  - c. Checks RT setup.
  - d. Press Establish contact.
  - e. Receiver presses RCV switch.
  - f. When tone is heard, sender presses RCV switch
  - g. When RCV light goes out, receiver presses RCV switch
  - h. On the TRT-1523(C)/U system, If the copy received is not good, or if working at extending range change the RT data rate to 1200
7. **System Trouble** Procedures. These steps will assist you in isolating fault system components when you have a problem communicating in a not using data transmission. These Procedures assume that the net and secure FH voice communicating has been established. If you are unable to communicate using data transmission, do the following troubleshooting steps in the order provided:
- **CHECK LOCAL RADIO.** Use the data on the FH voice net to determine that the radio net is operating
  - **CHECK WITH OTHER NET MEMBERS.** Do you have data communication with some stations but not others? The other stations may be out of range, temporarily off the air or has not checked into the net. If data communication can be established with another station, your system is probably OK and the problem may be at the distant net station
  - **CHECK SYSTEM CONFIGURATION.** Verify proper cabling, initialization and subscriber parameter radio set and Lightweight DIGITAL fax switch setting etc.
  - **NOTIFY MAINTENANCE.** If the problem cannot be isolated, notify unit maintenance personnel and inform your NCS of your communication problem.
8. **Remote Control Operations.** The Remote Control Unit (RCU) C-11561 may be used in place of the RT IN a SINCGAR radio system to allow the radio set and antenna to be placed at distances up to 4km from the local system. Interoperability between the Lightweight Digital FAX and the RCU is the same when the Lightweight Digital FAX is connected to an RT. Table 8-1. provides the switch settings for the radio set and the RCU remote control operation

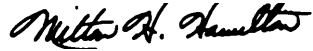
SWITCH	RCU	RADIO SET
FUNCTION	SQ ON	REM
MODE	scowl-i	N/A
DATA	4800 (high speed) 1200 (extended range)	N/A
CoMSEC	CT	PT
*	OFF	N/A

Table 8-1. RCU Settings for Remote Operation

By Order of the Secretary of the Army:

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