



# FIELD COMMUNICATION





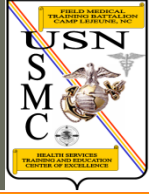
# OVERVIEW



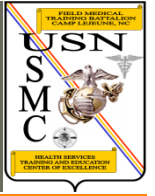
- Nomenclature
- Components
- Assembly
- Phonetic terms
- Controls
- Loading Single Channel Freq.
- Troubleshooting

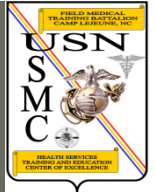


# LEARNING OBJECTIVES



Please Read Your  
Terminal Learning Objectives  
And  
Enabling Learning Objectives

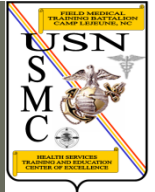




# Nomenclature of the SINCGARS

- SINgle
- Channel
- Ground and
- Airborne
- Radio
- Systems





# Nomenclature of the SINCGARS

## DEFINITION:

- VHF-FM combat radios
- Primary means of command and control for combat, and combat service support
- Operates in
  - Single Channel (SC)
  - Frequency Hopping (FH)





# Nomenclature of the SINCGARS



- Remote operations
- Retransmission  
(retrans)



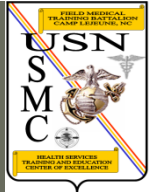
# Nomenclature of the SINCGARS

- Frequency Range
  - The SINCGARS operates in the VHF range from 30.000 to 87.975 MHz





# Nomenclature of the SINCGARS

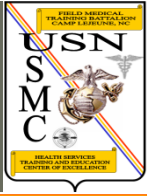


## POWER OUTPUT

- LO (low power)  
200 to 400 meters
- M (medium power)  
400 meters to 5 kilometers
- HI (high power)
  - 5 kilometers to 10 kilometers
- PA (power amplifier)
  - 10 kilometers to 40 kilometers

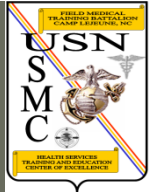
ONLY VEHICLES EQUIPPED WITH A  
POWER AMPLIFIER CAN USE THE  
“PA” SETTING







# COMPONENTS OF THE MANPACK CONFIGURATION



- Six Components
  - Receiver Transmitter (RT)
  - Handset
  - Manpack Antenna
  - Battery Box
  - Battery
  - Field Pack



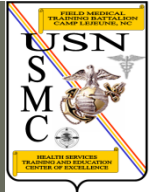


# RECEIVER-TRANSMITTER (RT)



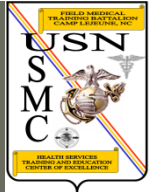


# HANDSET



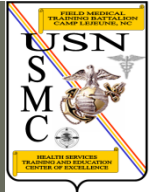


# MANPACK ANTENNA





# BATTERY BOX



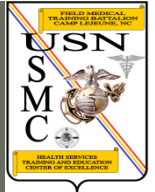


# BATTERY



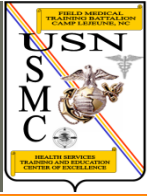


# FIELD PACK



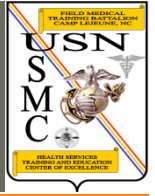
FMST 301

Field Communication





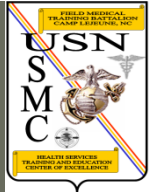
# ASSEMBLY OF THE AN/PRC-119A



- Visually inspect battery box for dirt and damage
- Stand RT on front panel guards, place battery box on RT and secure it to latches
- Place battery in battery box and mate connectors
- Close battery box cover and secure latches
- Screw whip antenna into base, only hand tighten



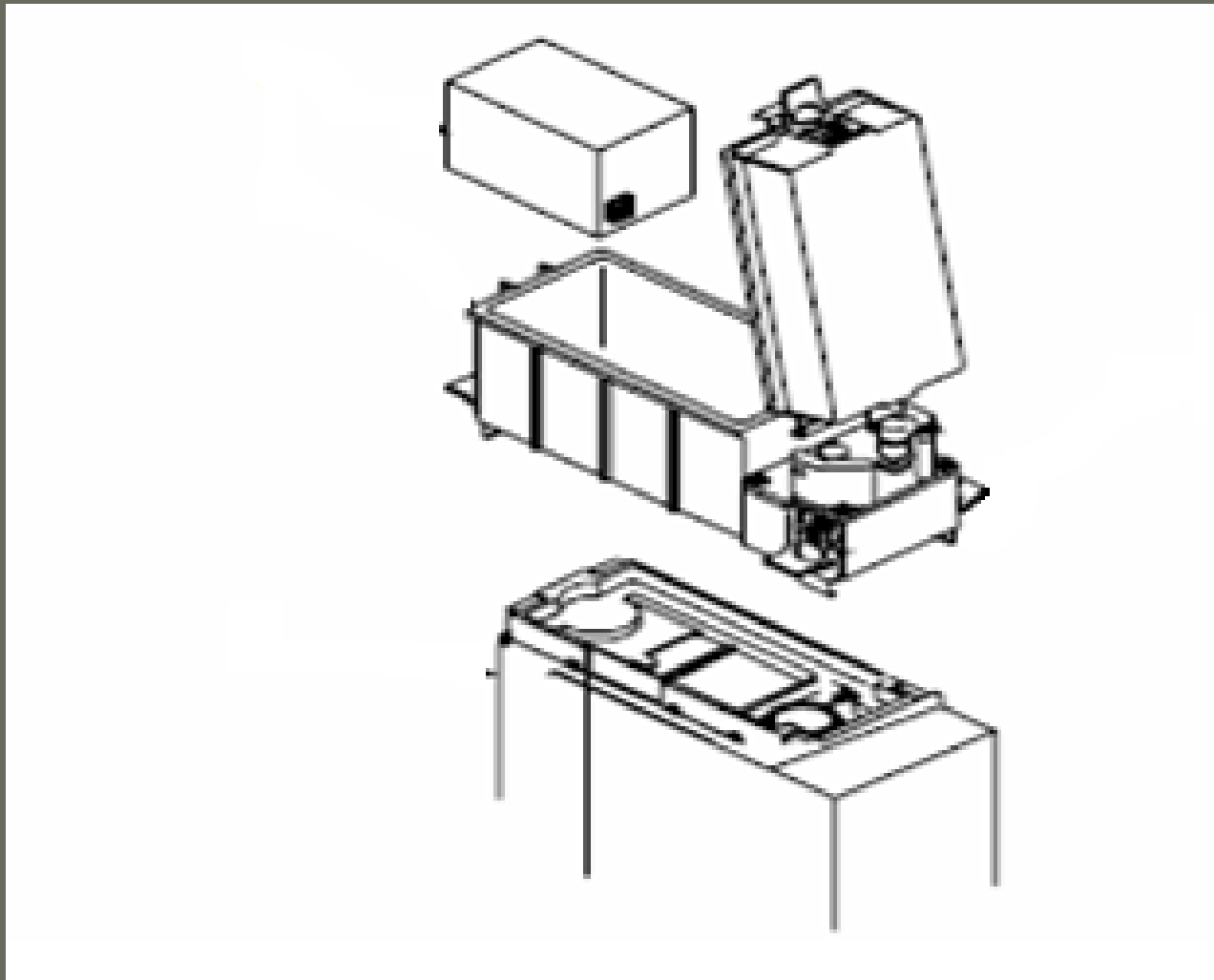
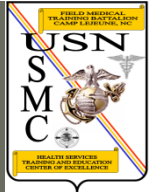
# ASSEMBLY OF THE AN/PRC-119A



- Carefully mate antenna base with RT antenna connector. Make sure you:
  - Line up the grooves and only
  - Hand tighten ONLY
- Attach handset by lining up red dots and then pressing and turning clockwise

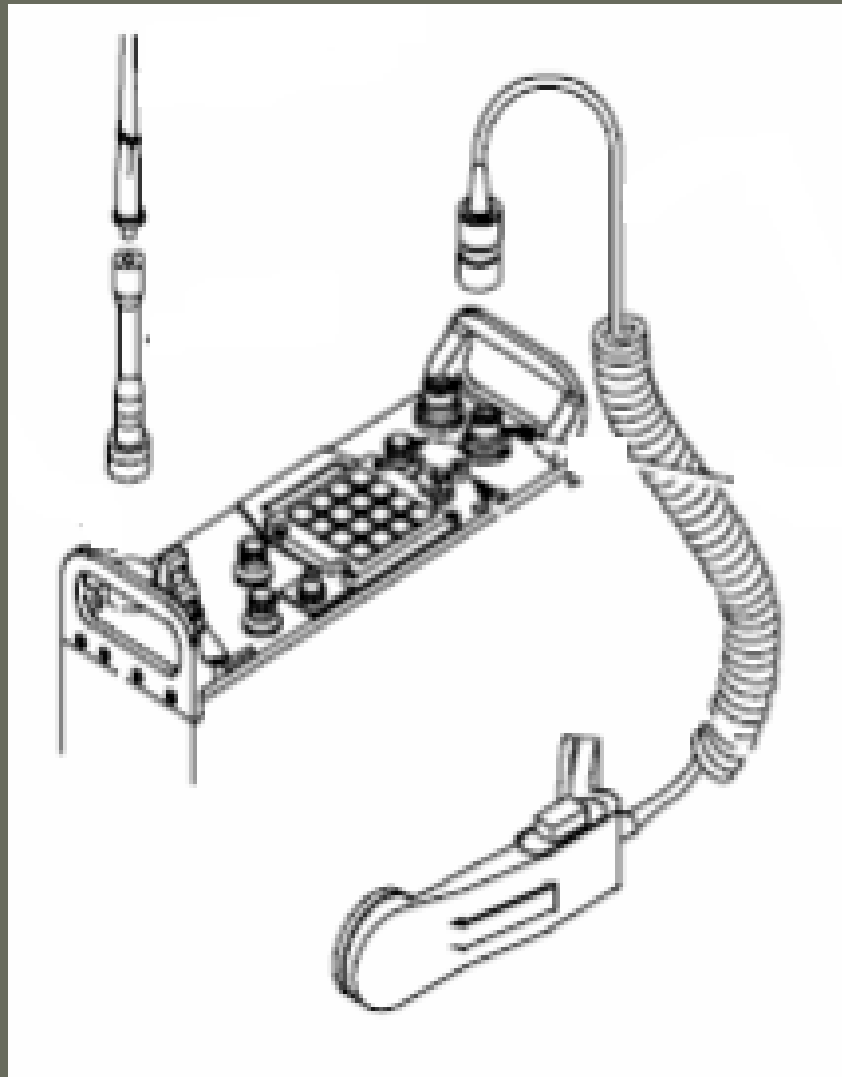
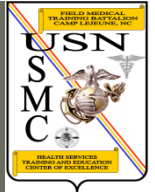


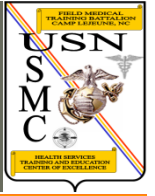
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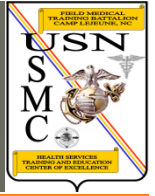
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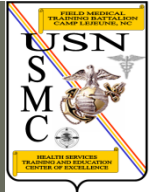
# PHONETIC TERMS



- A - ALPHA
- B - BRAVO
- C - CHARLIE
- D - DELTA
- E – ECHO
- F – FOXTROT
- G – GOLF
- H – HOTEL
- I – INDIA
- J – JULIET
- K – KILO
- L – LIMA
- M – MIKE
- N – NOVEMBER



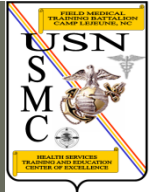
# PHONETIC TERMS



- O – OSCAR
- P – PAPA
- Q – QUEBEC
- R – ROMEO
- S – SIERRA
- T – TANGO
- U – UNIFORM
- V – VICTOR
- W – WHISKEY
- X – X-RAY
- Y – YANKEE
- Z – ZULU



# PHONETIC TERMS

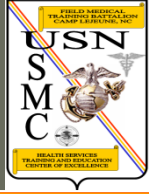


- 1 - wun
- 2 - too
- 3 - tree
- 4 - fow-er
- 5 - fife
- 6 - six
- 7 - seven
- 8 - ate
- 9 - niner
- 0 - ze-ro





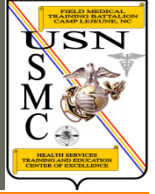
# PROCEDURE WORDS



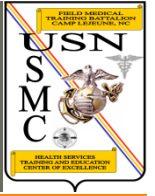
- THIS IS
- OVER
- OUT
- ROGER
- WILCO.
- SAY AGAIN
- I SAY AGAIN



# PROCEDURE WORDS



- ALL AFTER
- ALL BEFORE
- WAIT OVER
- WAIT OUT
- READ BACK
- I READ BACK
- CORRECTION
- RADIO CHECK
  - roger over*
  - roger out*



# CONTROLS

- Operating a radio consists of more than turning it “ON”
- Operation involves entering data using the keyboard, turning knobs, and following instructions from the net control station



- NOTE: Moving a switch to a setting that has a box around the letter requires the knob to be pulled out then turned.

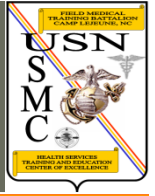
# CONTROLS

- Receiver-Transmitter (RT)
  - Most of the controls that the operator will use are placed on the face of the RT





# CONTROLS



- FCTN (function) Switch 4 operating positions
  - SQ ON (squench on)
    - Turns on the RT and the squench
  - SQ OFF (squench off)
    - Turns on the RT but not the squench
  - REM (remote)
    - Disables all RTs front panel controls and allows them to be remote accessed.
  - RXMT (retransmit)
    - Used to operate RT in retransmit mode.



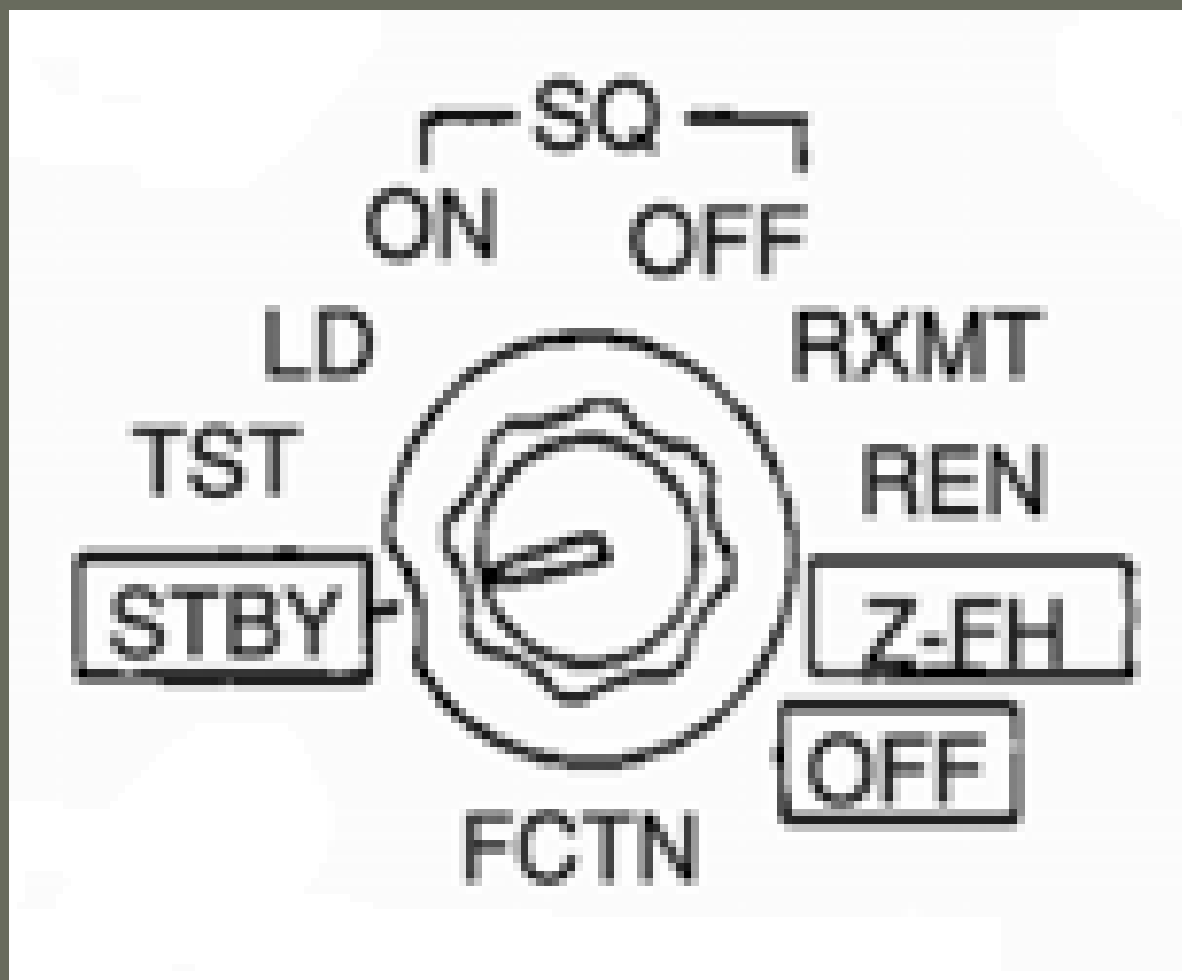
# CONTROLS



- FCTN (function) Switch
  - STBY - Will cut power to the RT.
  - TST - Conducts self test
  - LD (load) - This position allows the operator to load frequencies, data and COMSEC into the radio.
  - Z-FH (zero-FH) – This position is used to clear all frequency hopping (FH) data
  - OFF (All Power OFF) - Memory is completely cleared when OFF for 5 seconds



# FCTN SWITCH



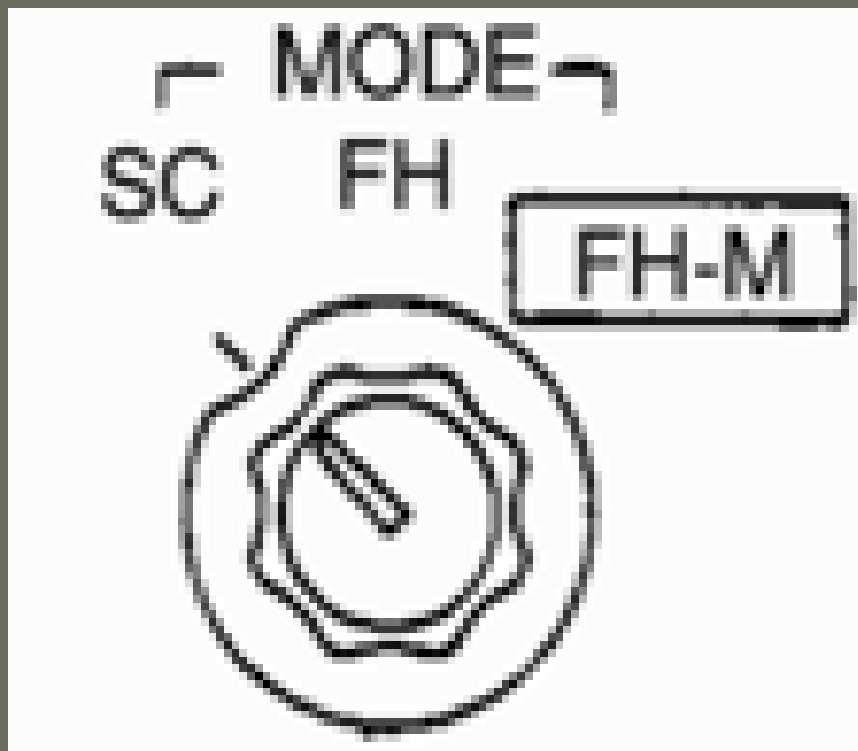
# CONTROLS

- Mode Switch
  - Sets the receiver-transmitter mode
    - SC (Single Channel)
    - FH (Freq hopping)
    - FH-M (Freq hopping master)



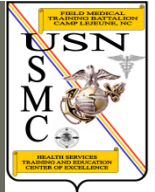


# MODE SWITCH





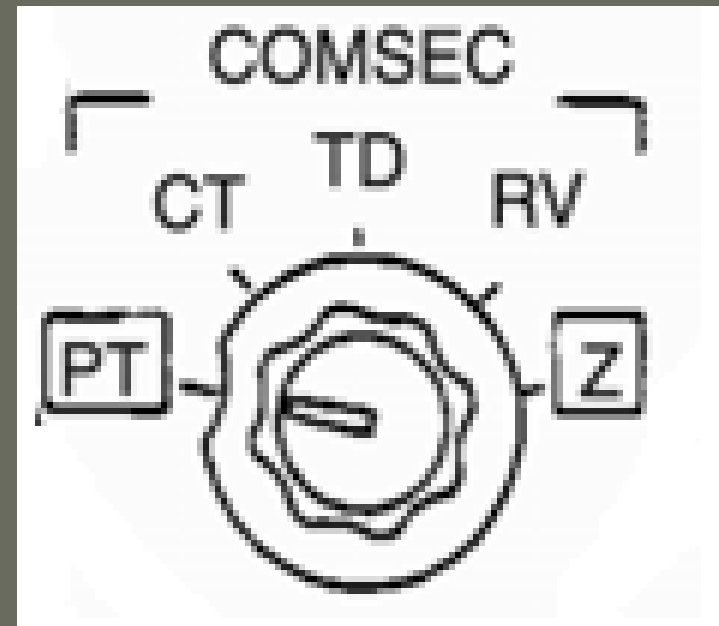
# CONTROLS AND FEATURES



- COMSEC Switch

- Sets the RT for the Communicational Security

- PT (Plain Text)
    - CT (Cipher Text)
    - TD (Time Delay)
    - RV (Receive Var)
    - Z (Zero)





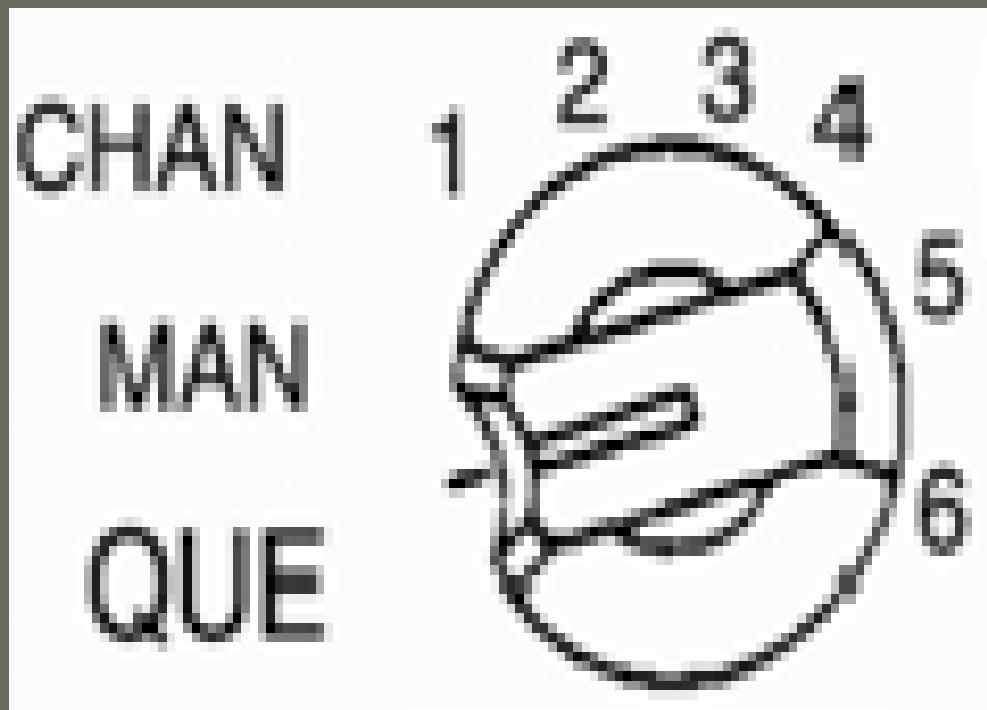
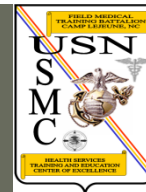
# CONTROLS



- CHAN (channel) Switch
  - Selects manual, preset and cue frequencies
    - MAN (manual) - Selects the loaded manual frequency
    - CUE - Selects the loaded CUE frequency
    - 1 through 6 - Channels that may be loaded with operating frequencies

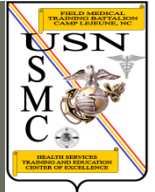


# CHANNEL SWITCH





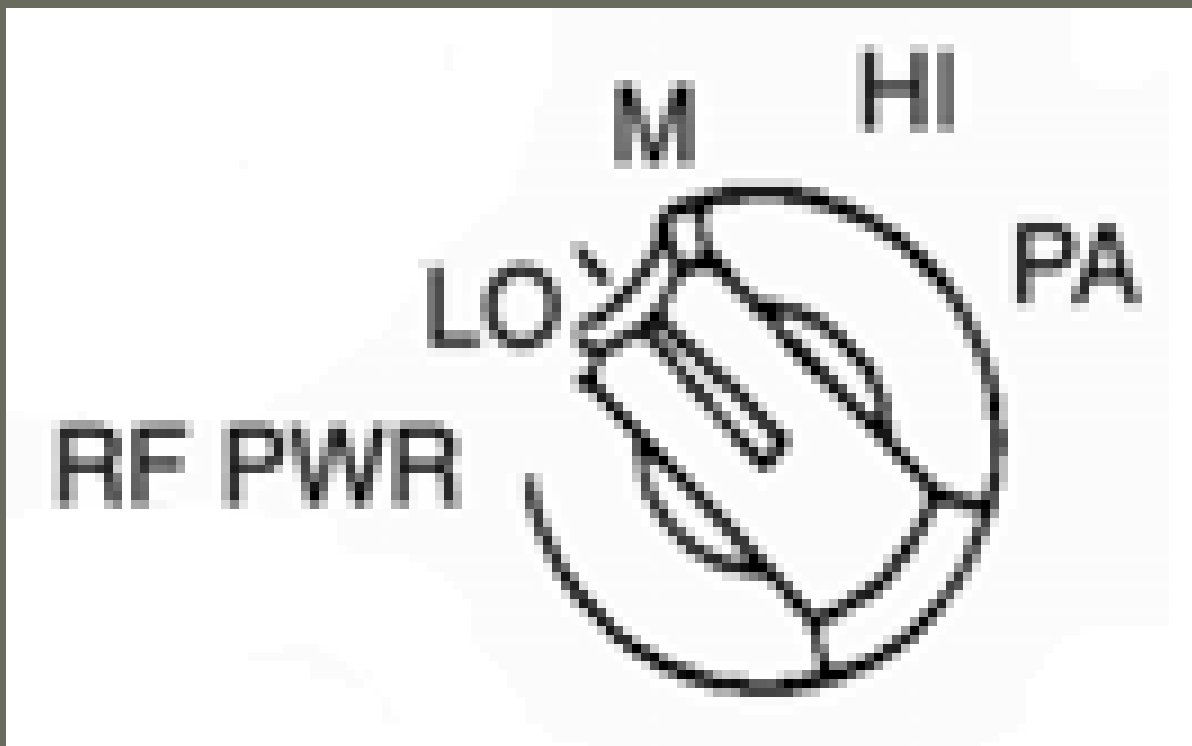
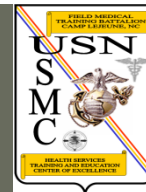
# CONTROLS



- RF PWR Switch
  - Adjusts power level of transmissions
    - LO (Low) 200 - 400 meters
    - M (Medium) 400 - 5000 meters
    - HI (High) 5 - 10 kilometers
    - PA (Power Amplifier) 10 - 40 kilos
      - (Only Vehicle mounted Radios)



# RF PWR SWITCH

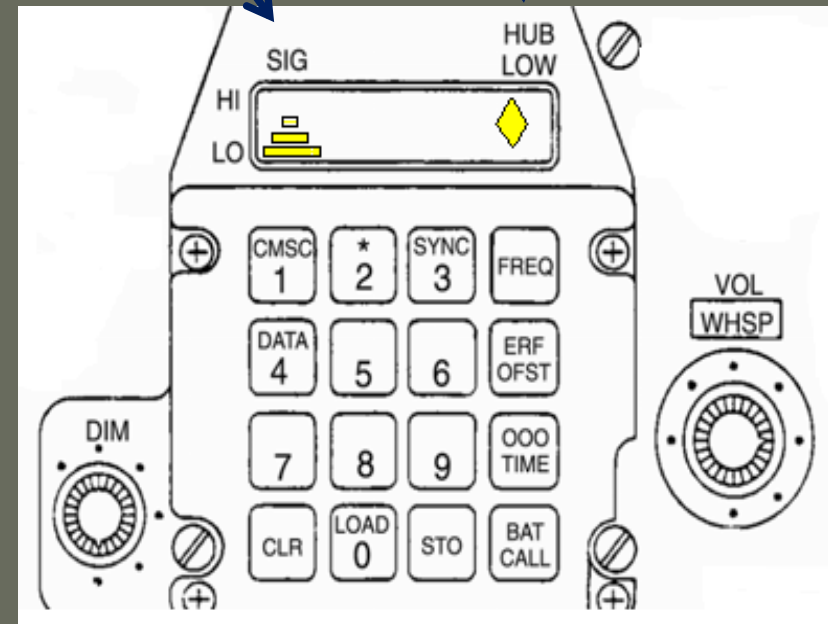


# CONTROLS

- DIM Control
  - Adjusts display brightness
- VOL/WHSP (volume/whisper) control
  - Adjusts audio volume
- Keyboard Display
- Keyboard

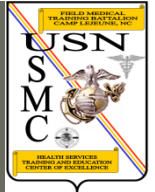
SIG Display

HUB/LOW Display



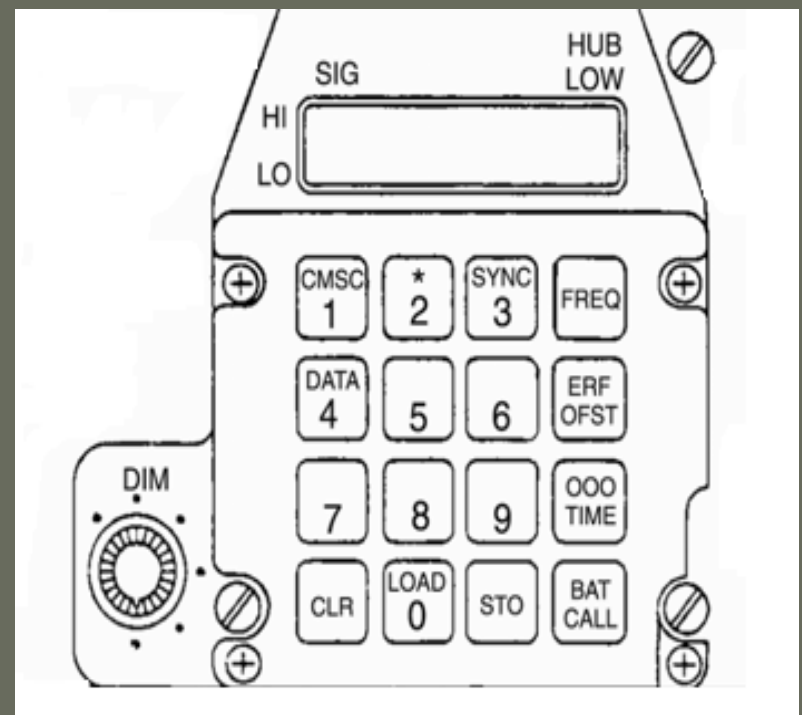


# KEYPAD



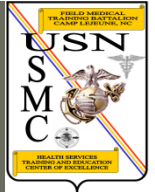
- FREQ (frequency)
- ERF (electronic remote fill)
  - Used by net control station
- OFST (offset)
  - Used in SC to offset frequency
- TIME
  - Used by NCS to set time for all net stations

- Keyboard and Display



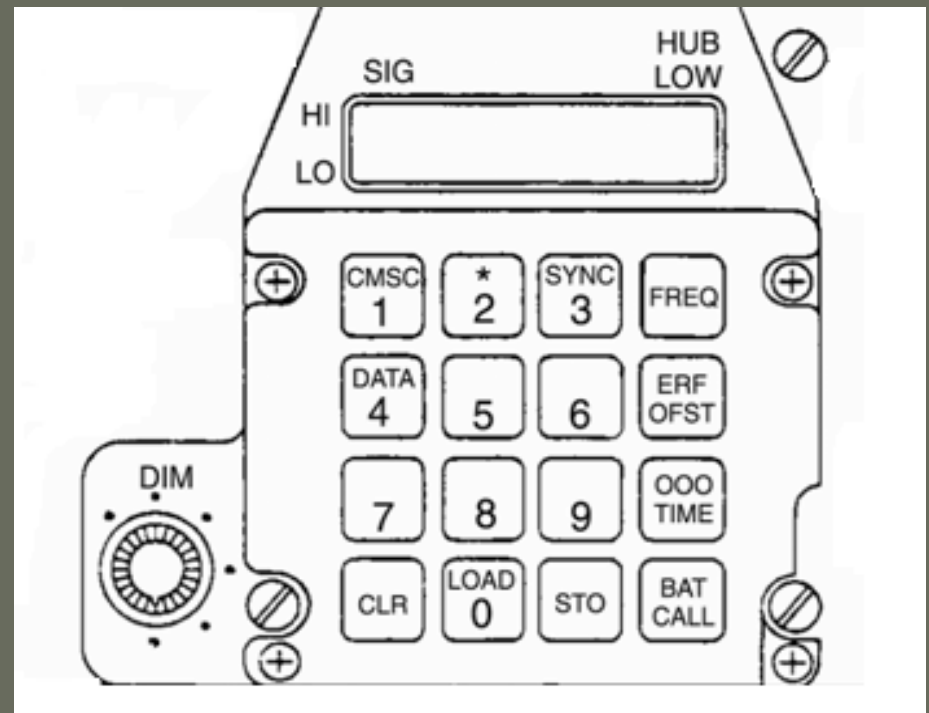


# KEYPAD



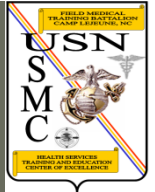
- BATT (battery)
  - Used to check battery life
- CALL
  - Used to communicate with a remote
- STO (store)
  - Transfers data from temp. to permanent memory

- Keyboard and Display

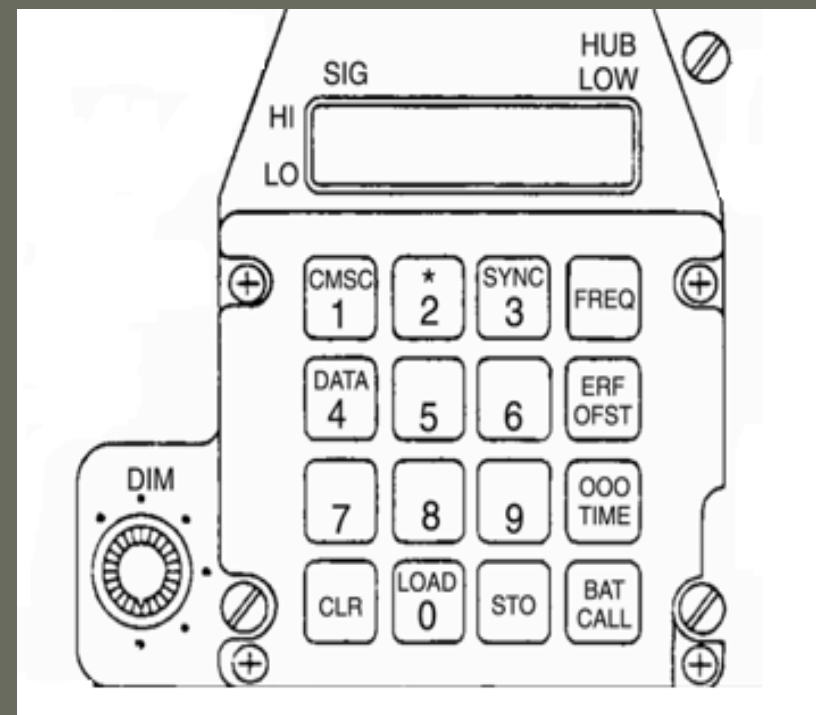




# KEYPAD

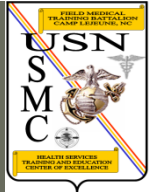


- LOAD
  - This button will load information into the holding memory
- CLR (clear)
  - Clears data from the keyboard display if a mistake was made
- SYNC
  - Used for late entry procedures
- DATA
  - Used to operate in data mode

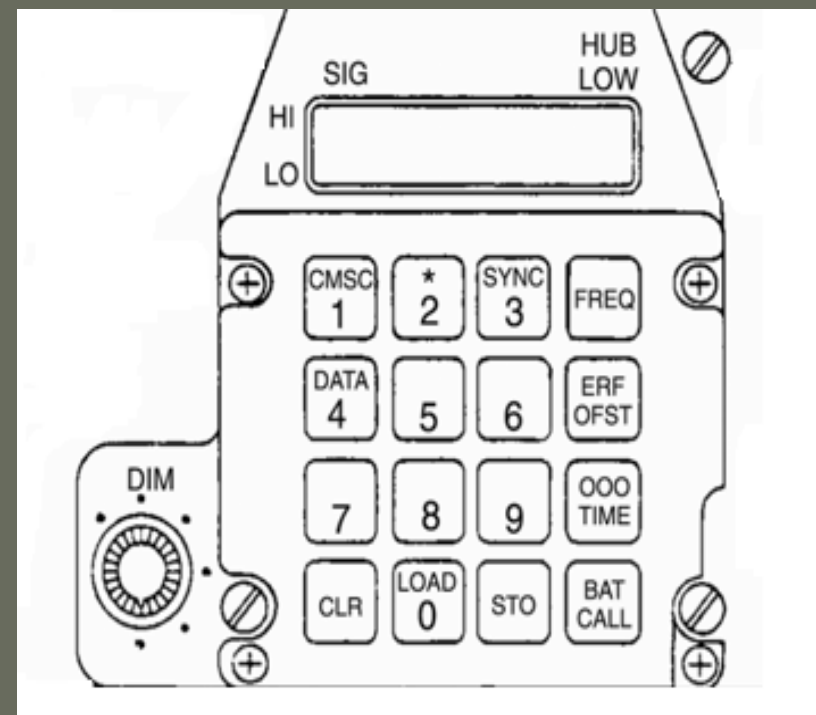




# KEYPAD



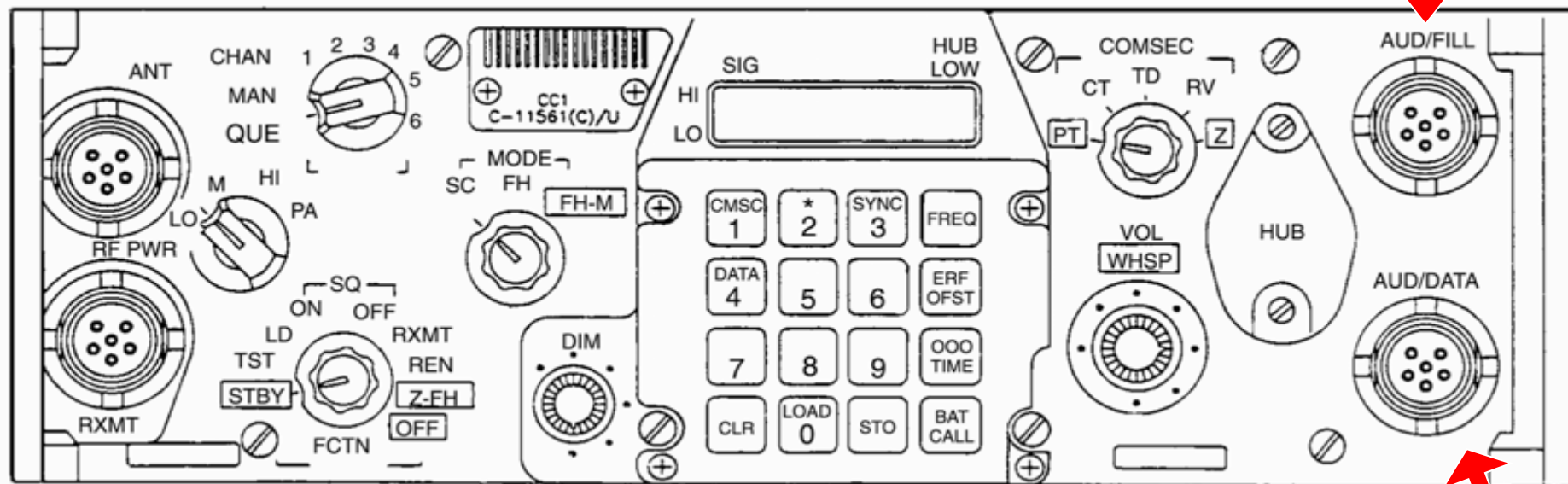
- CMCS (COMSEC)
  - Pressing this button allows COMSEC key to be displayed
- Numbers
  - Used to enter numerical data such as SC frequencies





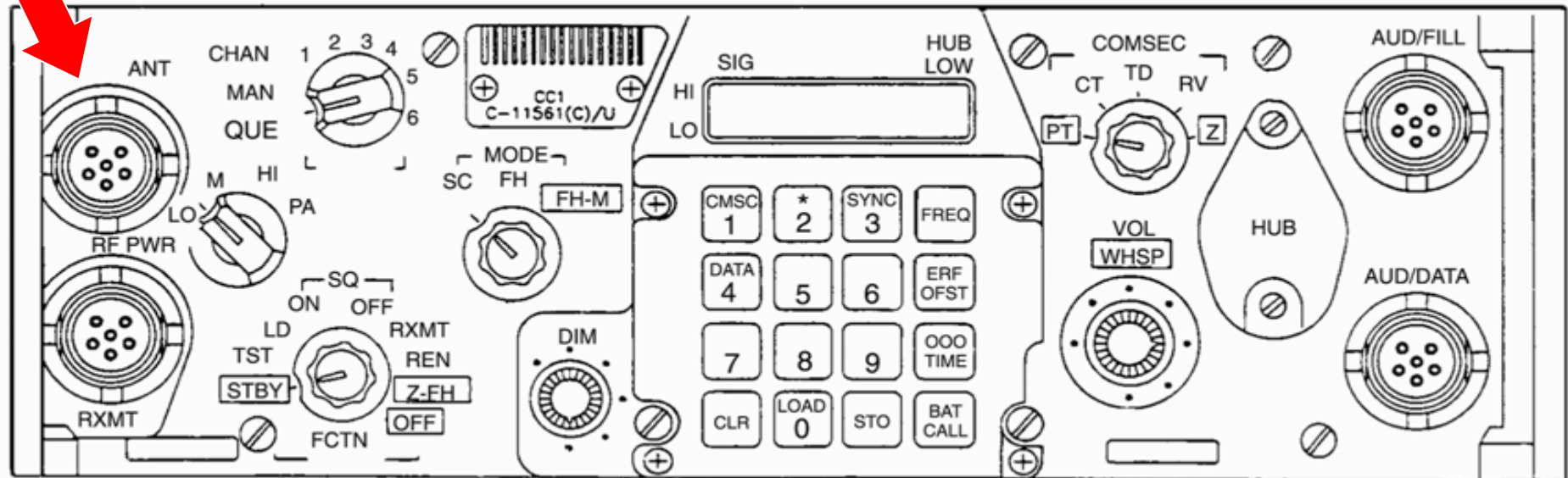
# CONNECTORS

AUD/FILL (audio/fill) Connector  
Connects to fill devices or handsets

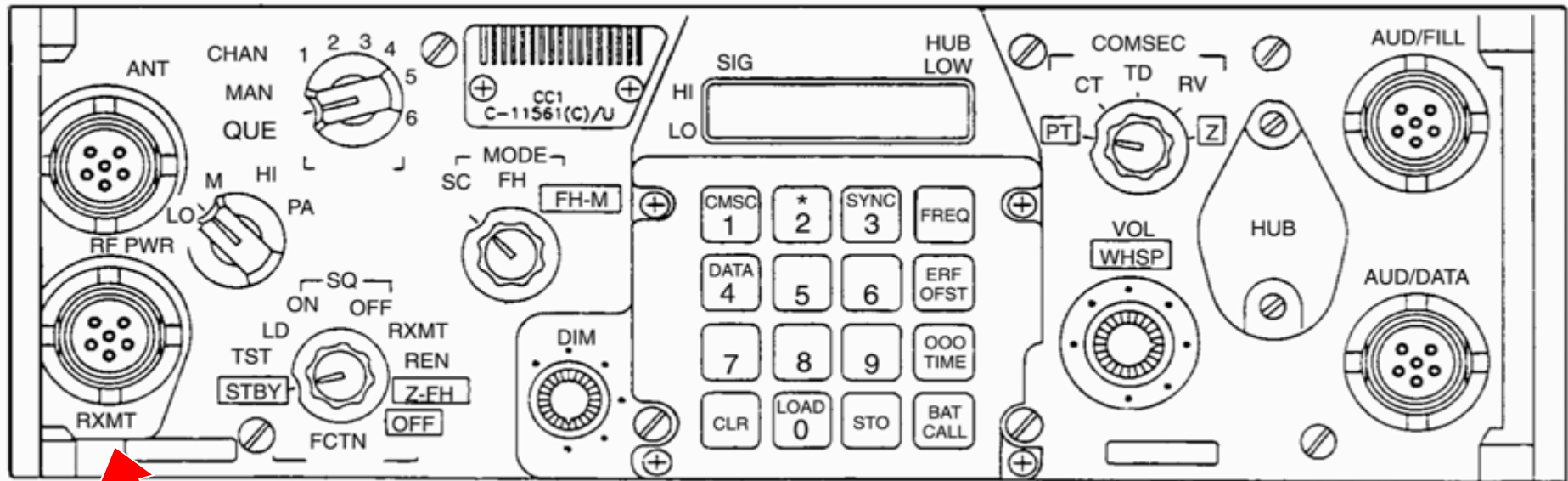


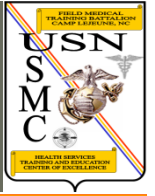
AUD/DATA (audio/data) Connector Connects to external data devices during data operations and handsets during normal operations

## ANT (antenna) Connector- Connects to the manpack antenna or vehicle antenna cable



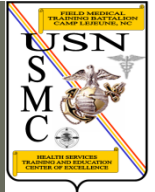
# RXMT (retransmit) Connector- Connects to another RT during retransmit operations





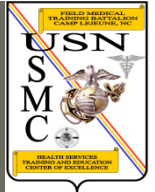


# LOADING A FREQUENCY

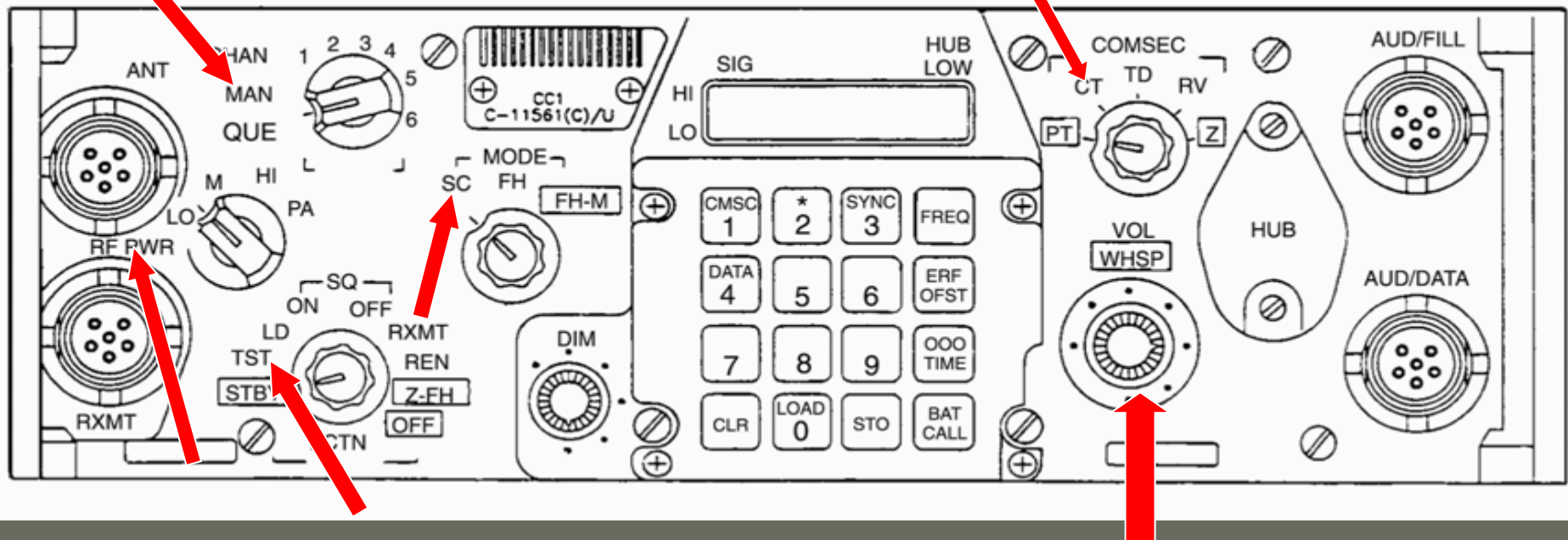




# LOADING A FREQUENCY



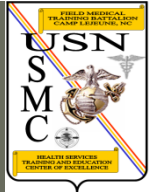
Turn on the RT (cont.)



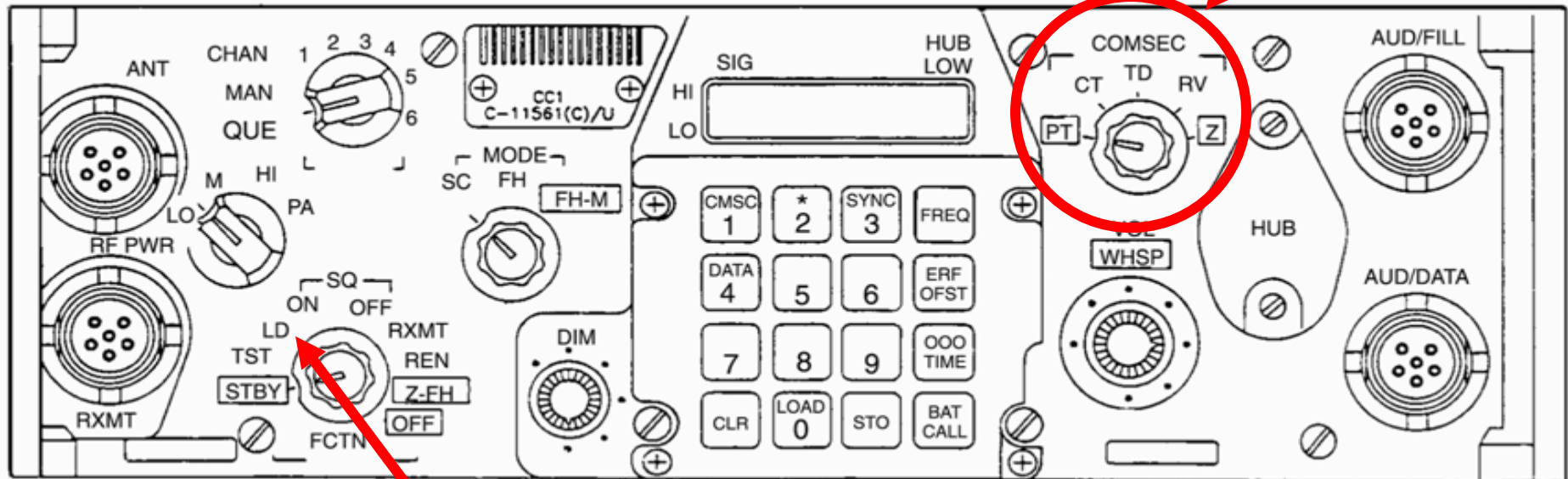
Turn FCTN switch to TST allow the test to run.



# LOADING A FREQUENCY FIRST STEP



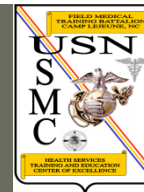
Set COMSEC to PT



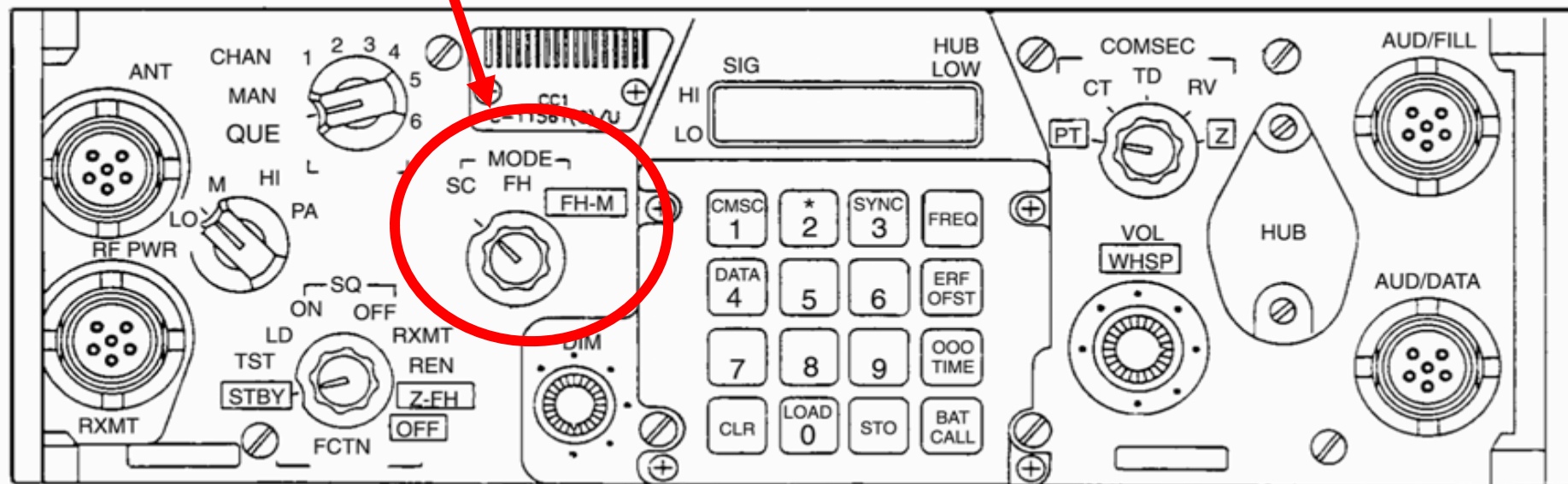
Set function switch to LD



# NEXT STEP



Mode to SC

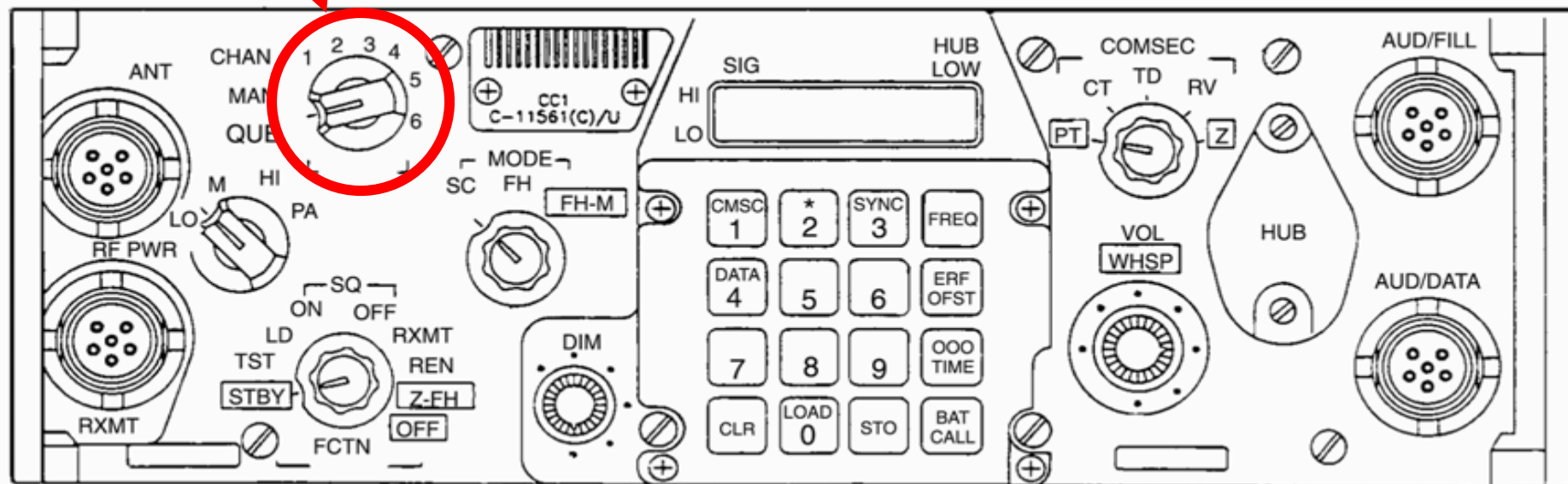




# NEXT STEP



Chan to MAN

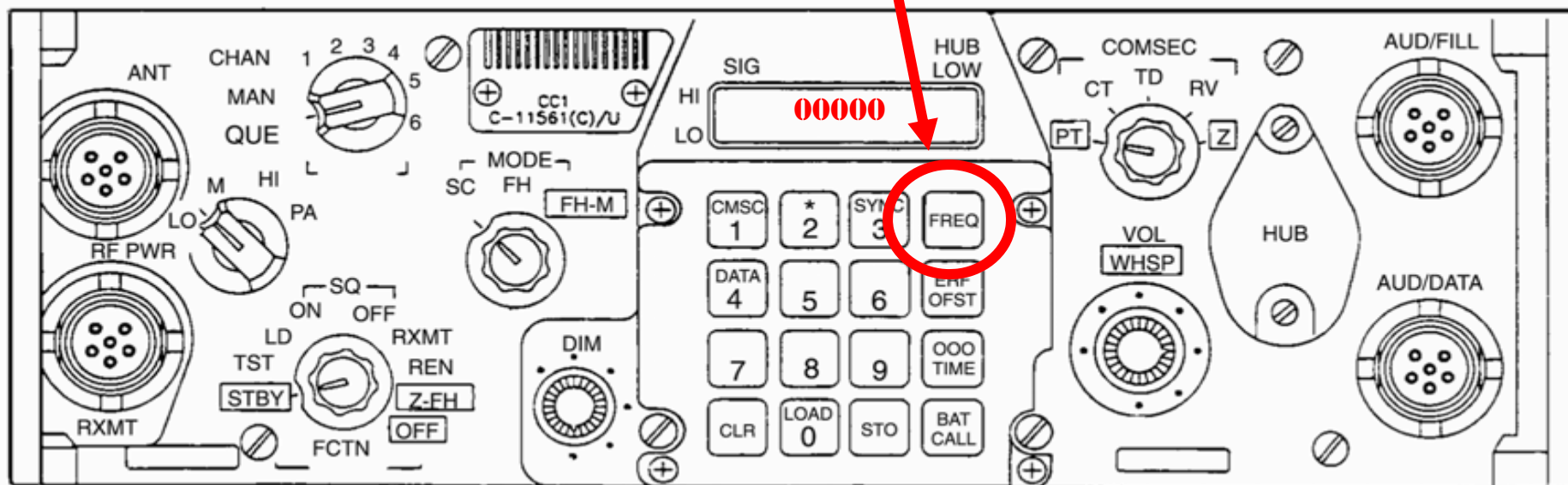




## NEXT STEP

Press **FREQ** (frequency) button on keypad

The freq window will show 00000.

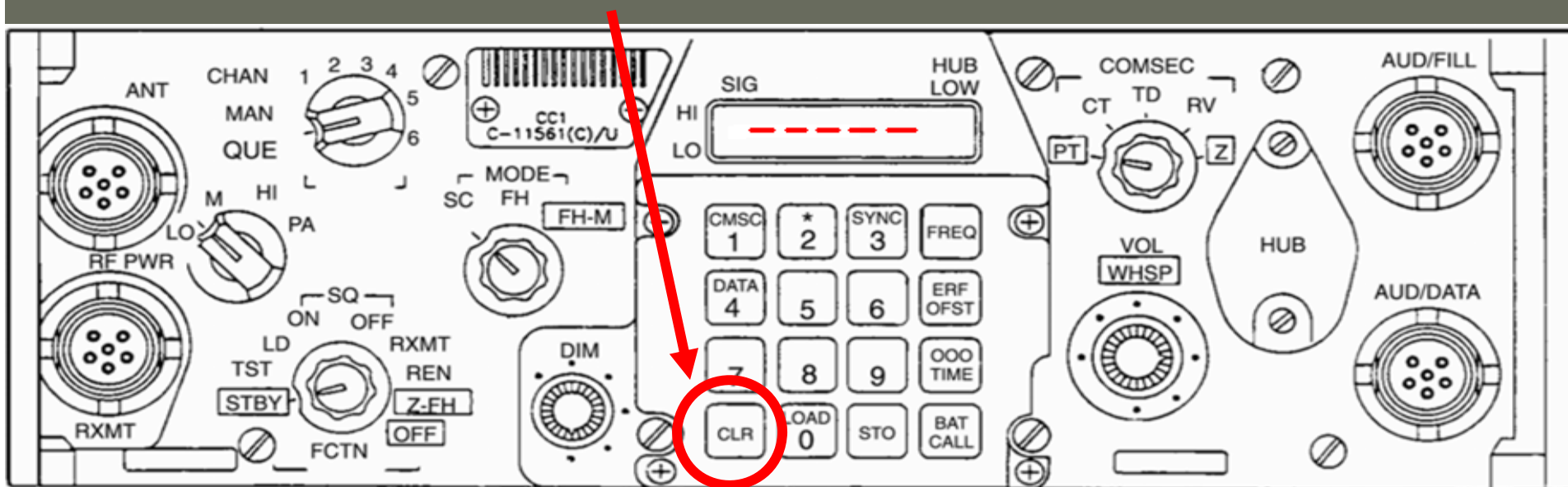




## NEXT STEP

### Press the CLR (clear) button

The freq window will show \_ \_ \_ \_ \_ (Five blank lines)

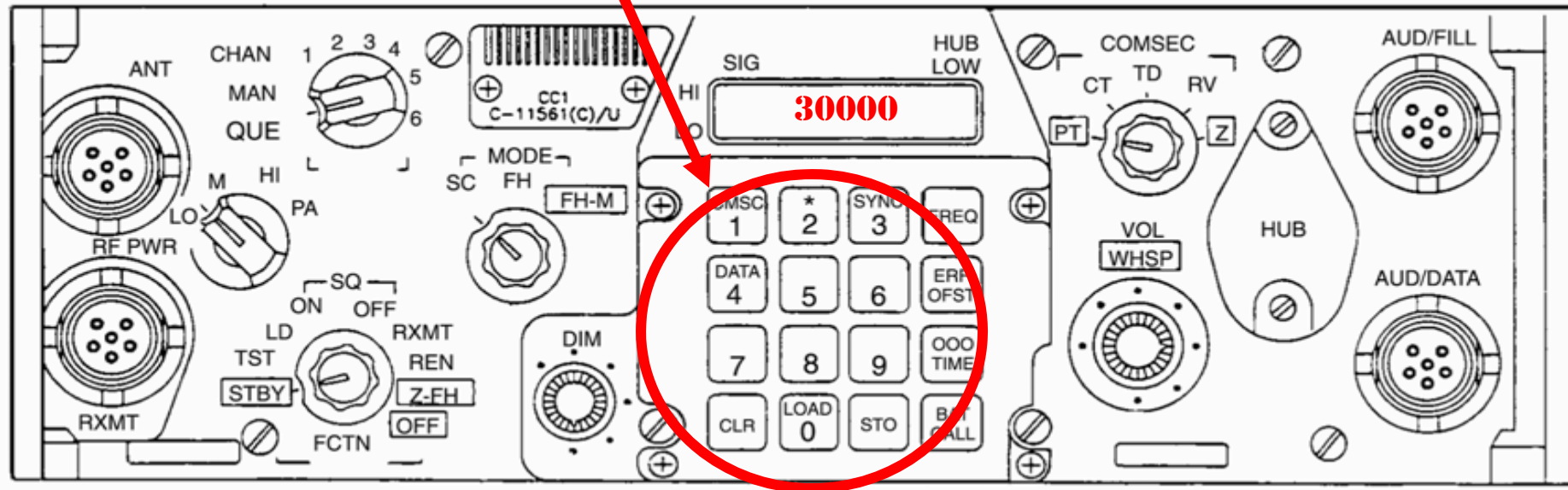




# NEXT STEP



Enter the numbers of the new (desired) frequency

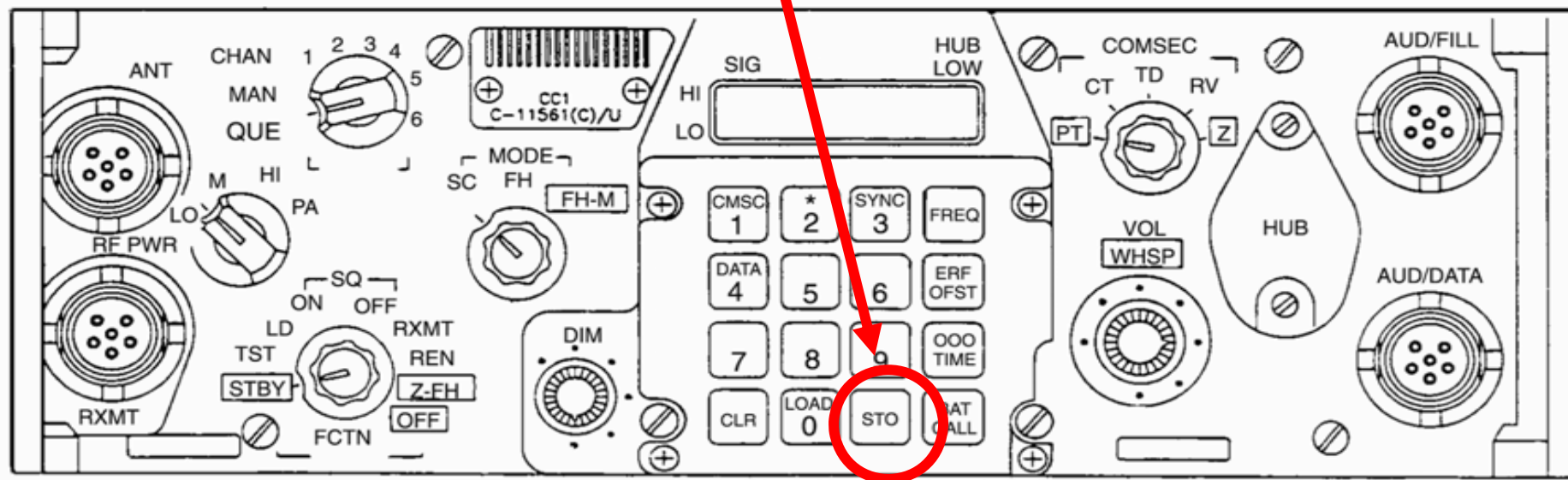




# NEXT STEP



Press the STO (store) button

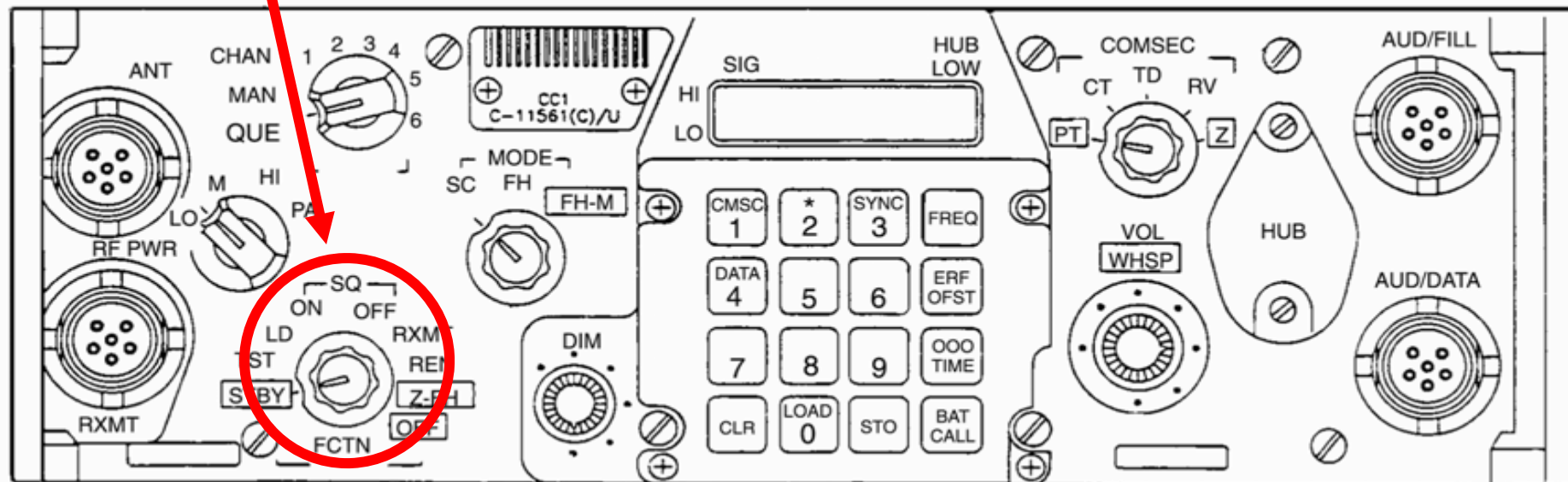




# LAST STEP



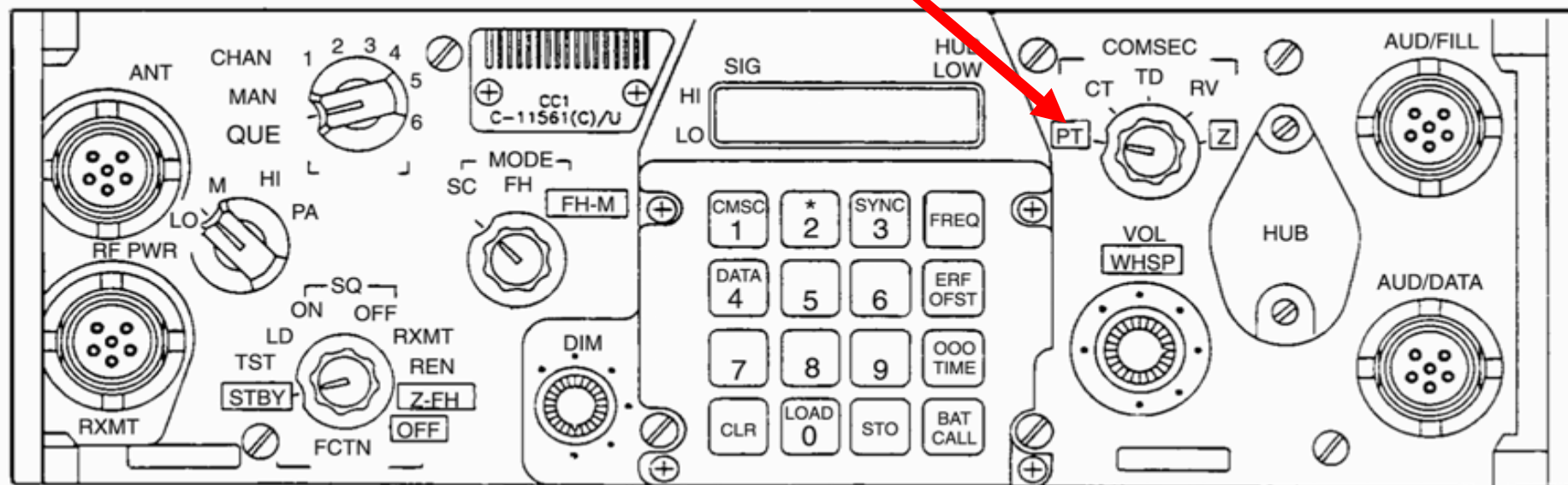
Set function switch to SQ ON or OFF (squelch on)



# TRANSMITTING

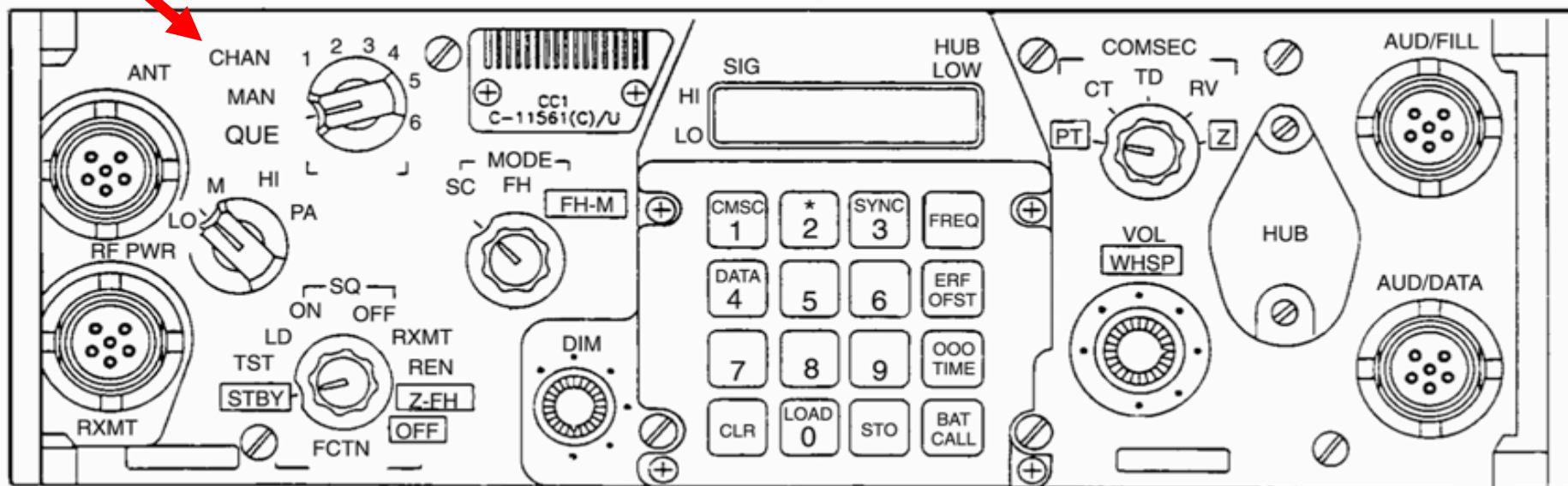
- Push-to-Talk

- When the push-to-talk mode is activated (handset or helmet), the operator talks, and the radio transmit in the voice mode.



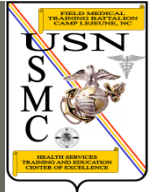
# TRANSMITTING

- Changing Channels.
  - To transmit on a different frequency, simply move the channel switch to the channel containing the desired frequency.





# CLEARING SINGLE CHANNELS

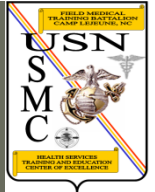


- Set the
  - mode switch to SC (single channel)
  - switch to CHANNEL TO BE CLEARED
- Press
  - FREQ button
  - CLR button
  - 5 blank lines
  - STO





# CLEARING SINGLE CHANNELS



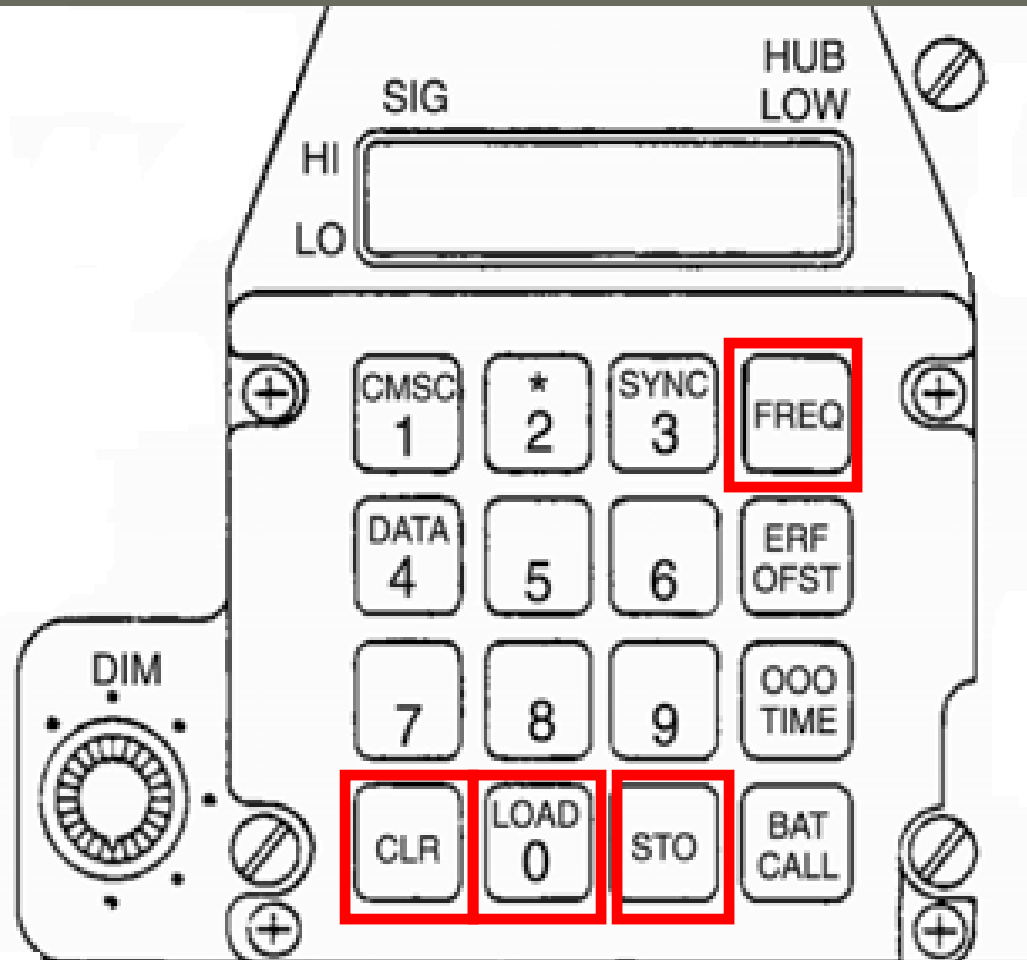
## KEYPAD SEQUENCE for single channel freq CLEARING

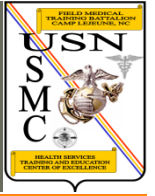
*-FREQ*

*-CLR*

*-LOAD*

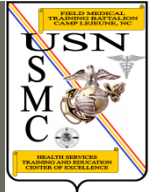
*-STO*







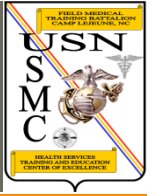
# TROUBLESHOOTING



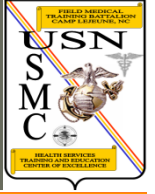
The troubleshooting tables found in TM11-5820-890-10-6 Pg's. 58-74 allow you to check out common malfunctions of your equipment.

The table lists the common malfunctions which you may find during the operation or maintenance of the radio, or its components.

*NOTE:* If a malfunction is not listed, or is not corrected by listed corrective actions, notify your supervisor.



# DEMONSTRATION



# PRACTICAL APPLICATION



# FIELD COMMUNICATION

