CREW Systems Smartcard

"Replaces Joint Counter Radio Controlled IED Electronic Warfare Handbook)

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https://www.jcrewportal.com

CREW 101

1. When properly used, a CREW system prevents the enemy's radio frequency (RF) transmitter from communicating with the RCIED receiver. It prevents the RCIED from being detonated.
2. Four critical factors influence the effectiveness of CREW:
   FREQUENCY: CREW must be programmed with the current software.
   POWER: Conducting proper PMCS helps to ensure that nothing degrades the CREW transmission signal. CREW must function at its designed full power.
   LINE OF SIGHT (LOS): CREW must have LOS to the device being jammed. All obstacles (natural and man-made) degrade the protection that a system provides. Every reasonable effort should be made to maximize a system's effective coverage area to provide overlapping protection with adjacent CREW systems.
   DISTANCE: CREW effectiveness is inversely proportional to the distance from the device being jammed.
3. It is critical that all PMCS is properly performed and operational checks are conducted for CREW and comm systems prior to starting any mission. Ensure that mission planning allows time for these checks.
4. **LEAVE YOUR CREW SYSTEM ON. IT DOES NOT PROVIDE ANY PROTECTION IF IT IS NOT ON.**

For Additional information go to **http://www.jcrewportal.com**

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To get an electronic copy of the Smart Card or to propose changes or improvements to the Card, go to the JCREW website **http://www.jcrewportal.com** and select **CREW SmartCard** from the menu on the left side of the page.
NOTE: *Access to the JCREW website requires CAC registration and login.*

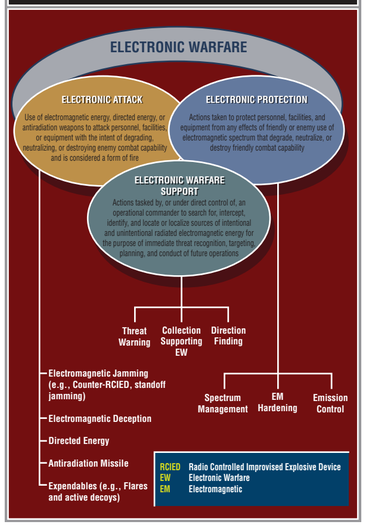
If the system is in danger of being captured or must be abandoned, ZEROIZE the system or destroy IAW unit TTPs.
Never abandon a dismount system.

DO NOT TURN OFF OR SET CREW SYSTEM INTO STANDBY MODE UNLESS DIRECTED BY HIGHER AUTHORITY OR EOD PERSONNEL ON THE SCENE.

Safety Considerations

- Maintain proper separation between antennas to prevent system interference.
- Remain clear of active antennas on mounted or fixed-site systems.
- Do not touch antennas when the system is ON.
- Do not connect or disconnect antennas when the system is ON.
- Use caution near obstacles and in limited clearance areas to prevent antenna damage.
- To prevent risk of explosion or fire, keep active CREW systems 25 feet away from unsafe ordinance and 50 feet away from fueling operations.
- Conduct through checks before going on any mission.

OVERVIEW OF ELECTRONIC WARFARE



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Pre-Combat Check/Pre-Combat Inspection (PCC/PCI):

PCC/PCI must be performed by an EWO or CREW Specialist before every mission.

- **Cables, Connections, and Antennas (CCA)**
  Examine all cables for cuts, kinks, fraying, or other damage. Ensure all connections are tight. Inspect all antennas for signs of visible damage. Verify that antennas are not tied to any other systems or support structures.
- **Operational Check**
  Turn the system ON. Verify it is operational and has no faults.
- **Spectrum Analyzer (Spec-A) or Universal Test Set (UTS) scan**
  Use Spec-A or UTS to verify the system is properly programmed.

Post-Mission Check (PMC)

1. All mounted and dismounted CREW systems require PMC after each mission.
2. Never end any mission without conducting PMC on all CREW systems.
3. Perform CCA check and identify any problems or concerns arising during the mission. Note any components that are approaching the end of their service life.
4. Report all CREW system problems or concerns to your CREW Specialist or EWO.

CREW Operational

1. Only the unit commander can authorize operations without CREW.
2. Every member of the mission team is responsible for CREW situational awareness during the mission and taking appropriate action or notifying leadership, as applicable.
3. Know (1) CREW system identification (mounted or dismounted), (2) how to tell CREW is ON and JAMMING, and (3) how to recognize a CREW system fault (see this SmartCard).
4. Observe antenna safe stand-off distances: FRF 105D and FRF 115: 29 inches. FRF 119: 13 feet to the front.
5. For proper cooling, maintain a minimum 4-inch clearance around all vehicular CREW systems.
6. Verify CREW is ON and JAMMING after going OTW and confirm to the mission commander.
7. If a CREW system develops a fault when OTW never turn the system OFF. Report it through appropriate channels to the mission commander.
8. Remember that only the mission commander can authorize placing a CREW system in STANDBY or turning it OFF when OTW.
9. Maintain awareness of proper CREW spacing interval and notify mission leadership of any conflicts.

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EM Fratricide Prevention

- Know, understand and follow the Communications Plan.
- Know, understand and follow TTPs.
- Update/Validate JRFL.
- Validate current loadsets/firmware have been programmed for CREW.
- Coordinate, synchronize, and deconflict operations with the EW Officer and Spectrum Manager.

EMS Coordination

Requirements for friendly communications, GPS-enabled navigation systems, and radar should be considered with respect to the anticipated operations, expected tactical threat, electronic attack requests, and anticipated EM interference considerations based on trend analysis. Once identified, provide these requirements to the Spectrum Manager and EWO for incorporation into the Joint Restricted Frequency List (JRFL) and communications plans.

Development of the JRFL and communications plans are critical preliminary steps to ensuring deconfliction. Proper planning of EM Spectrum activities minimizes the chances of EMI/Fratricide.

In The Event of Fratricide

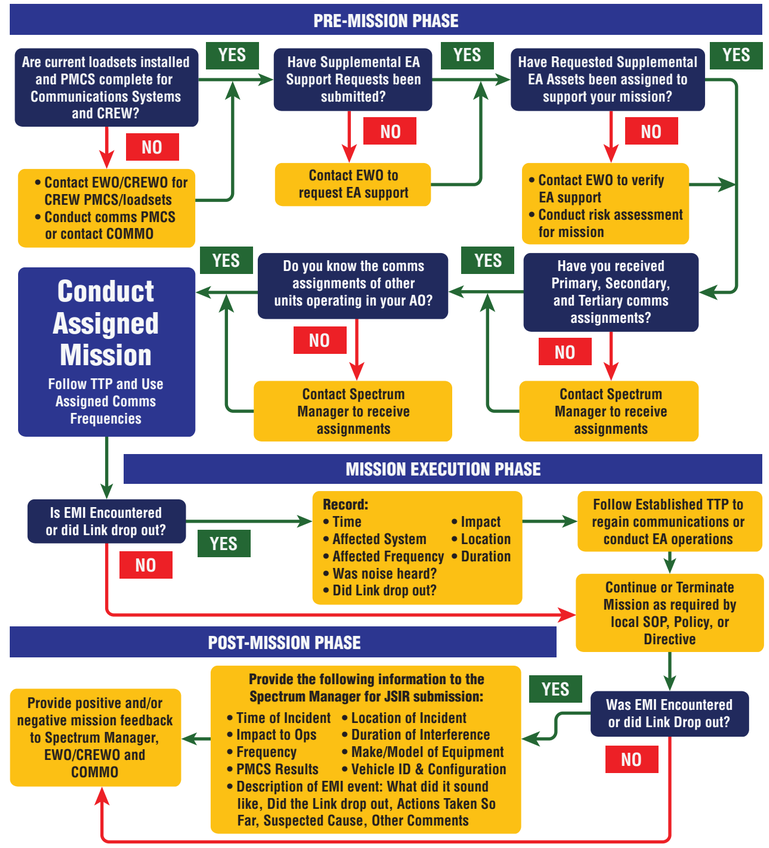
- Follow TTPs and record basic interference event data such as time, location, frequency, duration, and impact.
- Report this information plus make and model of the system, vehicle ID and configuration, and PMCS results to Spectrum Manager. If a Spectrum Manager cannot be found, report interference to the S-6. Fixing the problem begins with reporting.

Fratricide Resolution

The Joint Spectrum Interference Report (JSIR) program is used to report, track, archive, analyze, and resolve persistent, recurring, electromagnetic interference incidents affecting US military systems. It is an automated database of interference incidents, resolutions, and lessons learned from past interference reports. This database is used to resolve incidents and support trend analysis for future interference mitigation planning by Spectrum Managers and EWOs.

The interference resolution process was designed to overcome future occurrences and provide lessons learned. Report incidents of EMI/Fratricide to your Spectrum Manager.

Electromagnetic Interference (EMI) Prevention & Reporting Flowchart



Interference mitigation begins with reporting. This flowchart is designed to help **YOU** provide the proper information to the correct personnel for further action.

Electronic Warfare

The Electronic Warfare Officer:

- Plans, coordinates, and assesses EW offensive, defensive, and support requirements (to include CREW updates and downloads).
- Deconflicts EW operations with the Spectrum Manager and Intelligence Officer.
- Prioritizes EW effects and targets with the Fire Support Coordinator.
- Plans and coordinates EW operations across functional and integration cells to include submission of EA Requests to higher echelons.

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Spectrum Management

The Spectrum Manager:

- Coordinates frequency allotment, assignment, and use.
- Coordinates measures to reduce electromagnetic interference/fratricide.
- Assists the EW officer in issuing guidance to the unit (including subordinate elements) regarding deconfliction and resolution of interference problems
- Coordinates spectrum usage with higher echelon J-6, G-6, or S-6 and applicable host-nation and international agencies as necessary.
- Coordinates the preparation of the restricted frequency list and issuance of emissions control guidance.

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Duke V2 / V3

Duke V2
Primary Unit

Duke V3
Primary Unit and Secondary Unit

Duke V3
Remote Control Unit (RCU)

TURN ON PROCEDURE WITH RCU

1. Start the vehicle and let it run for 3-5 minutes.
2. On the RCU, set the Run/Standby switch to **STANDBY**, and set the Power switch to **OFF**.
3. At the Primary Unit and Secondary Unit (for V3 only), set the Power switch to **REMOTE**, and set the Run/Standby switch on the Primary Unit to **RUN**.
4. Return to the RCU and set the Power switch to **ON**.
   NOTE: *The unit performs a diagnostic test. When finished, if lights show green blinking, amber off, and red off, go to step 5. If not, see the Duke Indicator Lights charts on this card to determine what is wrong. For V3 only, on the Secondary Unit, there is also a blue indicator light for the GPS. If lit, there is GPS lock, if unlit, there is a lost signal or no GPS lock.*

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5. On the RCU, set the Run/Standby switch on the RCU to **RUN**. The green light is ON, indicating that the system is actively jamming. The amber light blinks when the unit is reactively jamming.

TURN ON PROCEDURE WITHOUT RCU

1. Start the vehicle.
2. At the Primary Unit, set the Power switch to **OFF**, and set the Run/Standby switch to **STANDBY**.
3. For V3 only, at the Secondary Unit, set the Power switch to **ON**.
4. At the Primary Unit, set the Power switch to **ON**.
   NOTE: *The unit performs a diagnostic test. When finished, if lights show green blinking, amber off, and red off, go to step 5. If not, see the Duke Indicator Lights charts on this card to determine what is wrong. For V3 only, on the Secondary Unit, there is also a blue indicator light for the GPS. If lit, there is a GPS lock, if unlit there is a lost signal or no GPS lock.*
5. Set the Run/Standby switch to **RUN**. The green light is ON when the system is active jamming. The amber light blinks when the unit is reactive jamming.

STANDBY MODE

1. To enter Standby mode, set the Run/Standby switch to **STANDBY.** On V3 only, the green LED blinks.
2. To return to active jamming, set the Run/Standby switch to **RUN**.

WARNING: There is NO JAMMING when in Standby mode.

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TURN OFF PROCEDURE WITH RCU

1. On the RCU, set the Run/Standby switch to **STANDBY**.
2. The RCU Run/Standby switch is set to **STANDBY**. Then the Power On/Off switch is set to **OFF**. The V3 Primary and Secondary units will power down. The green LED turns OFF.

TURN OFF PROCEDURE WITHOUT RCU

1. On the Primary Unit, set the Run/Standby switch to **STANDBY**.
2. On the Primary Unit, set the Power switch to **OFF**.

ZEROIZE / EMERGENCY ERASE

If the system is in danger of being captured or must be abandoned, ZEROIZE the system or destroy IAW unit TTPs.

1. Ensure system is **ON**.
2. **ZEROIZE** from the Primary Unit, Secondary Unit, or RCU.
3. Lift the red cover and press the **ZEROIZE** switch down for 3-5 seconds until the ON, XMIT, and FAULT lights (LEDs) flash simultaneously on the Primary, Secondary and RCU.
4. When the ON, XMIT, and FAULT lights (LEDs) flash simultaneously on the Primary, Secondary and RCU, the system is ZEROIZED.

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CREW Systems


Symphony


CVRJ


Thor III


Guardian / QRD



Duke V2 / V3


EM Fratricide

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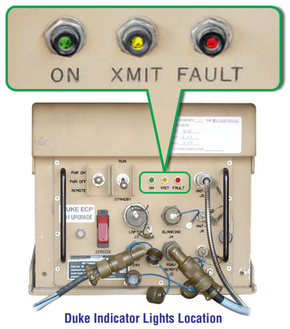
Duke Indicator Lights



Duke Indicator Lights Location

NORMAL OPERATING INDICATOR LIGHTS			
SYSTEM STATE	GREEN ON LED	AMBER XMIT LED	RED FAULT LED
System is transmitting Active jamming only No Fault	ON	OFF	OFF
System is transmitting Active and reactive jamming No Fault	ON	Flickering/ON	OFF

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STANDBY INDICATOR LIGHTS			
SYSTEM STATE	GREEN ON LED	AMBER XMIT LED	RED FAULT LED
System in standby Not jamming No Fault	Blinking	OFF	OFF
System in standby Not jamming GPS/System Fault	Blinking	OFF	ON
System in standby Not jamming Antenna/VSWR fault	Blinking	OFF	Blinking

DUKE FAULT INDICATOR LIGHTS			
SYSTEM STATE	GREEN ON LED	AMBER XMIT LED	RED FAULT LED
System is transmitting Active and reactive jamming GPS System Fault	ON	Flickering/ON	ON
System is transmitting Active and reactive jamming Antenna/VSWR Fault	ON	Flickering/ON	Blinking
System is zeroized	Blinking	Blinking	Blinking

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Guardian / QRD

Guardian
Remote Control Unit (RCU)

Guardian Unit

ANTENNA CONNECTIONS

When installing the antenna, confirm that the number of rings on the antenna is the same as the number of rivets on the corner of the carry handle of the Guardian Unit (Fig. 1).

CAUTION: Antennas are not interchangeable. Mismatch of units and antennas renders the systems inoperable and damages the equipment.

Fig. 1: Proper Antenna Matching

ASSEMBLY / TURN ON PROCEDURES

1. Install two fully charged batteries.
2. Determine which Guardian Unit you have (B, B1, or C).
3. Set the Unit in the pack and secure it with the webbing straps.
4. Connect the antenna to the antenna socket on the Unit. Verify that you have the correct antenna (Fig. 1).
5. Connect the pigtail cable (A) to the Remote Socket on the Unit (see close-up in Fig. 3).
6. Connect the RCU and the Timing Reference System/Code Plug to the pigtail cable (Fig. 2).
7. On the RCU, press the **On/Off** button. If there is no RCU, on the Unit, lift and set the On/Off switch to **ON**. The Unit performs a diagnostic test and beeps twice if it is operational. A lit green LED on the RCU and on the Unit indicates it is operational.

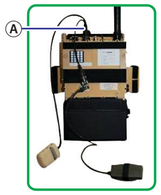


Fig. 2: Guardian Unit

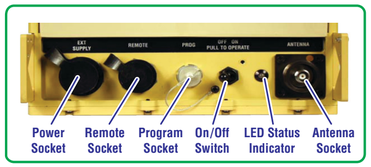


Fig. 3: Closeup of Guardian Front Panel Controls and Indicators

TURN OFF / DISASSEMBLY PROCEDURES

1. On the RCU, press the **On/Off** button, *or* on the Unit, lift and set the On/Off switch to **OFF**.
2. Disconnect the RCU and the Timing Reference System/Code Plug from the pigtail.
3. Disconnect the pigtail from the Unit.
4. Disconnect the antenna from the socket.
5. Remove the Unit from the pack.
6. Remove the batteries and recharge them.

ZEROIZE / EMERGENCY ERASE

If the system is in danger of being captured or must be abandoned, ZEROIZE the system or destroy IAW unit TTPs. Never abandon a dismount system.

1. Ensure that system power is **ON** and RCU is connected.
2. Simultaneously press the two **ZEROIZE** buttons on the RCU and hold 8-10 seconds.
3. A buzzer will sound (B1 and B only) and the System Status LED will show solid red.

FAULTS & TROUBLESHOOTING

Three Beeps, Pause, Three Beeps: Component Failure.

1. Turn the system OFF.
2. Check all components and connections.
3. Turn the system ON.

Constant Beeping: Low Battery

1. Turn the system OFF.
2. Replace both batteries.
3. Turn the system ON.

Constant Tone and Solid Red LED: Internal System Failure.

1. Turn the system OFF.
2. Check all components and connections; verify system has threat load; check batteries.
3. Turn the system ON.

Using pencil only, please use this section to record important contacts, software information, and notes.

EWO POC: _____

FSR POC: _____

SYSTEM MAINTENANCE DATE: _____

FILL UPLOAD DATE: _____

SYSTEM DOWNLOADED: _____

OTHER (UNCLASSIFIED) INFORMATION: _____

AREA OF OPERATIONS: _____

Preventive Maintenance Checks and Services (PMCS)

WARNING: Conduct all PMCS with the power turned off.

1. Conduct PMCS on a regularly scheduled basis.
2. Inspect all system components (Unit, RCU, CCA) for signs of damage and wear and tear. Ensure nothing is tied to the antennas. Remove any rebar, angle iron, or HESCO wire used for sniper cover systems or other system supports on top of the vehicle.
3. Coordinate with the CREW Specialist/EWO/Warlock Shop, as applicable, to replace worn components before they fail.
4. Keep the system clean. Wipe down with a clean dry cloth. If washing is required, use water and a clean cloth. Never use any type of high pressure system to clean a CREW system.

Thor III

Thor III
Remote Control Unit (RCU)

Thor III Unit

TURN ON PROCEDURE

1. Install two fully charged BB-2590 or UBI-2590 batteries. Either type of battery may be used, but they may not be mixed.

CAUTION: Do not use any battery which shows signs of damage, such as bulging, swelling, disfigurement, brown liquid in the plastic wrap, swollen plastic wrap, etc.

2. Connect the GPS antenna cable to jack J3 on the Unit (Fig. 1, (J)).
3. Verify that you have the correct antenna (Fig. 2), and connect the Rx/Tx antenna cable to jack J5 on the Unit (Fig. 1, (D)).
4. Connect the RCU cable to jack J4 on the Unit and to the RCU (Fig. 1, (F)).
5. Press **POWER** on the Unit (Fig. 1, (C)). The Unit performs a diagnostic test and the RCU displays `STBY` after approximately 90 seconds.

6. On the RCU or on the Unit, press the **MODE** button. The system begins jamming and the blue OPR light is on, unless there is an alarm, a lit fault LED, or another indication of a problem.

If no threat load is present, the RCU displays `FAIL:BIT`, and the red FAULT LED lights. Return the unit to the EWO/FSR.

TURN OFF PROCEDURE

1. On the RCU, or on the Unit, press the **MODE** button once. The Unit stops jamming.
2. On the Unit, press the **POWER** button. The Unit turns off.

ZEROIZE / EMERGENCY ERASE

If the system is in danger of being captured or must be abandoned. ZEROIZE the system immediately, and destroy it by any means possible as dictated by local TTPs. Never abandon a dismounted system.

Perform a ZEROIZE when the Thor III unit is powered on. ZEROIZING a Thor III unit when powered off will deplete the internal SCM battery, prevent threat load storage, and provide no indication system was successfully ZEROIZED. Power off ZEROIZING should only be done in emergency situations, not as standard operating procedure.

1. Ensure Unit is **ON**.
2. Open the **ZEROIZE** button cover on the Receiver/Transmitter and depress and hold the **ZEROIZE** button for 5 seconds, or depress and hold the **ZEROIZE** button on the RCU for 5 seconds. LED indicators (POWER, FAULT, GPS, ALM EN) blink ON-OFF continuously.

3. After pressing the **ZEROIZE** button, wait 30 seconds before powering down the Thor III.

The unit is not operational and all classified and sensitive information is erased, including the configuration and activity logs.

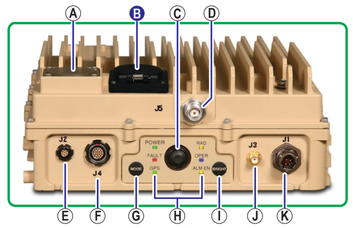


Fig.1: Thor III Front Panel Controls and Indicators

- (A) **Speaker**
- (B) **ZEROIZE button with cover**
- (C) **Power button** – *Press to turn ON*
- (D) **J5 Rx / Tx antenna cable connection**
- (E) **J2 comm cable connection**
- (F) **J4 RCU cable connection**
- (G) **MODE button** – *Toggles between Standby and Operate modes.*
- (H) **Indicator LEDs** – *POWER, RAD, FAULT, OPER, GPS, ALM EN*
- (I) **BRIGHT button** – *See the BRIGHT button table under Fig. 3.*
- (J) **J3 GPS antenna cable connection**
- (K) **J1 power cable connection**

ANTENNA CONNECTIONS

When installing the antenna, use the notches (Fig. 2) as a guide to ensure that the correct antenna is mated to the correct Unit.

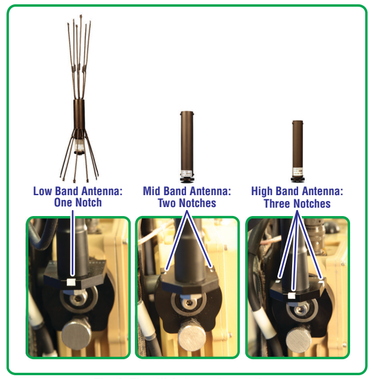


Fig. 2: Thor III Antenna Connections

CAUTION: Each Rx/Tx antenna is engineered to connect to one of the Units (low, mid, or high band). Attempts to connect a mismatched antenna to a Unit can damage the antenna and prevent the Unit from operating properly.

FAULTS & TROUBLESHOOTING

NOTE: If there is a system fault and the alarms have been enabled, the system sounds an audio tone, vibrates, or displays the fault on the RCU.

- **Blinking red LED.** Antenna Fault: check CCA and reboot. Over-Temperature: Attempt to move system to cooler environment if mission appropriate, but never turn OFF as unit will continue to jam on a degraded basis.
- **Solid red LED.** System Power or BIT Failure: check CCA, components, and batteries and then reboot.
- **Blinking green LED.** Batteries are 20% or less. Monitor and replace before depletion.
- **All LEDs blinking.** Unit is ZEROIZED. Return to CREW Specialist for threat load installation.

BATTERY WARNINGS

- A BA-5590/U lithium battery (non-rechargeable) is to be used with this equipment and contains pressurized sulfur dioxide or manganese dioxide gas. The gas is toxic, and the battery MUST NOT be abused in anyway which may cause the battery to rupture.
- A BB-2590/U lithium ion (rechargeable) battery can be used with this equipment. The battery contains dangerous electrolytes. The battery MUST NOT be abused in any way which may cause the battery to rupture. Avoid exposure to exposed electrolytes.
- Equipment uses two batteries. Batteries may be hot swapped one at a time, but must ALWAYS be replaced in complete sets.

- Use batteries of the same type and nomenclature from the same manufacturer with the same contract number and a similar date code. Store batteries in sets. NEVER mix new and used batteries.
- DO NOT mix primary and rechargeable batteries in equipment, such as BA-5590/U and the BB-2590/U batteries.

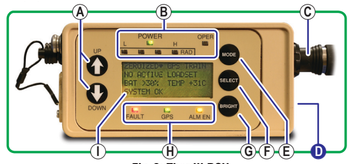


Fig.3: Thor III RCU

- (A) **UP/DOWN** – *Scroll display up or down.*
- (B) **Indicator LEDs** – *POWER, RAD, OPER*
- (C) **RCU cable connection**
- (D) **ZEROIZE button**
- (E) **MODE button** – *Toggles between Standby and Operate modes.*
- (F) **SELECT** – *Button selects display line.*
- (G) **BRIGHT button**
- (H) **Indicator LEDs** – *FAULT, GPS, ALM EN*
- (I) **Four-line illuminated LCD display**

Press Bright Button Multiple Times to Enable these Settings			
PUSH BRIGHT...	LED STATE	VIBRATOR	ALARM
1 time	Bright	Enabled	–
2 times	Dim	Enabled	–
3 times	Off	Enabled	–
4 times	Bright	Disabled	–
5 times	Dim	Disabled	–
6 times	Off	Disabled	–
Hold for 2 sec.	–	–	Enabled
Hold for 2 sec.	–	–	Disabled

CVRJ

CVRJ
Remote Control Unit (RCU)

CVRJ
Receiver/Transmitter (R/T)

TURN ON & OPERATING PROCEDURE WITH RCU

1. Start the vehicle and let it run for 3-5 minutes.
2. On the RCU, press and hold **PWR** for 1 second. The system performs a diagnostic test and enters Standby mode. The RCU displays `STBY`.
3. Press **OPR**. The system is jamming when the RCU displays `OPR`.

CAUTION: If `OPR` or `STBY` is flashing, there is NO GPS lock. The Unit will interfere with other nearby CREW devices.

CAUTION: Do not disconnect the RCU when in Operate mode.

TURN ON & OPERATING PROCEDURE WITHOUT RCU

WARNING: Pull and lift switch to ON position. Allow 45 seconds for diagnostic check/transition to operate mode. If fault light illuminates, the system is not jamming.

1. Start the vehicle.
2. On the R/T, set the Power switch to **ON**. The system performs a diagnostic test and begins jamming.

WARNING: The system cannot be put into Standby mode.

WARNING: Turning on using the R/T should be done only if the RCU is inoperable.

STANDBY MODE

WARNING: There is NO JAMMING when in Standby mode.

1. On the RCU, press **STBY/RCV**. The system is in Standby mode when `STBY` displays on the RCU.
2. If `STBY` is flashing, there is no GPS lock.
3. To return to Operate mode, press **OPR**. The system is jamming when `OPR` is displayed.

TURN OFF PROCEDURE

CAUTION: You must enter Standby mode before shutdown. Failure to do so may damage R/T or degrade system performance.

1. On the RCU, press **STBY/RCV**. The RCU displays `STBY`.

2. On the RCU, press **PWR**.
3. Without the RCU, set the Power switch on the R/T to **OFF**.

ZEROIZE / EMERGENCY ERASE

If the system is in danger of being captured or must be abandoned, ZEROIZE the system or destroy IAW unit TTPs.

1. Ensure that system is **ON**.
2. **ZEROIZE** from the RCU: Lift the black **ZEROIZE** button cover on the RCU and press and hold until `ZEROIZED` is displayed on the RCU.
3. **ZEROIZE** from the Unit: Lift the red cover and lift and hold the **ZEROIZE** switch up until the SFLT LED comes on.

Note: This method will not guarantee the unit is ZEROIZED-use only as a last choice.

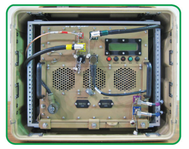
FAULTS & TROUBLESHOOTING

- **Antenna Fault** – RCU will indicate AFLT/SFLT; unit will indicate solid AFLT and SFLT LEDs.
- **System Fault** – RCU will indicate SFLT; unit will indicate solid SFLT LED Other Faults:
  1. Press **F2** on RCU
  2. Turn system OFF.
  3. Check CCA.
  3. Turn system ON.

Note: On RCU Failure: System will continue to operate in the mode in use at time of failure.

Symphony

Symphony
Remote Control Unit (RCU)



Symphony
Vehicle-Based System (VBS)

TURN ON PROCEDURE

The VBS and the RCU contain identical controls and they display identical information on their LCDs. These procedures can only be performed from the RCU when the RCU is connected to the VBS.

1. Start the vehicle and let it run for 3-5 minutes.
2. On the back of the VBS, turn the red switch SW-1 **ON**.
3. On the RCU or VBS, press and hold **STANDBY** for 3 seconds.
4. The LCD displays `SYMPHONY RUNNING TESTS`.
5. When the tests end, the display shows the name of the threat load on the top line and `SYSTEM OK` on the bottom line.
6. To select a different threat load, press **FILL** until the proper threat load is displayed.

7. Press and hold **RUN** for 3 seconds. The system is jamming when the Active LED is lit.

STANDBY MODE

1. To enter Standby mode, press and hold **STANDBY** for 1 second.
2. When the Active LED is unlit, the system is in Standby mode.
3. To return to active jamming, press and hold **RUN** for 3 seconds. The system is jamming when the Active LED is lit.

WARNING: There is NO JAMMING when in Standby mode.

TURN OFF PROCEDURE

1. On the RCU, press and hold **OFF** for 3 seconds.
   NOTE: *Electricity remains on in the VBS to maintain the threat load.*
2. To turn the power completely OFF, on the back of the VBS, turn the red Power switch SW-1 **OFF.**

When SW-1 is turned off, the system zeroizes.

ZEROIZE / EMERGENCY ERASE

If the system is in danger of being captured or must be abandoned, ZEROIZE the system or destroy IAW unit TTPs. Never abandon a dismount system.

To **ZEROIZE** the system, on the back of the VBS, turn the red Power switch SW-1 **OFF**.

TROUBLESHOOTING

RCU Inoperable – *The RCU is not working.*

1. Turn the power **OFF**.
2. Check the RCU cable connections.
3. Follow the TURN ON PROCEDURE.

`Bad Fill Data` **Error Message**
The system has lost its threat load. The threat load must be reloaded.

`Bad T/Out` **Error Message**
Each Threat Load is only valid for a defined time span. Reload Symphony with the current Threat Load.

`Bad GPS Aerial` **Error Message**
Turn the power OFF. Check the GPS cable connections. Follow the TURN ON PROCEDURE.

`GPS Ref Lost` **Error Message**
If this message doesn't clear within a few minutes of entering Standby Mode:
Check the antenna for proper placement, clearance from obstructions, and a clear signal path. The system continues to operate, but loses accuracy over time. This message will automatically appear when the `Bad GPS Aerial` Error Message is also present.

`Bad Ch A` **or** `Bad Ch B` **Error Message**
Press and hold **OFF** for 3 seconds. After one minute, press and hold **STANDBY**.

1. If the error cleared, press and hold **RUN** for 3 seconds.
2. If the error still displays, follow the complete TURN OFF PROCEDURE. Wait one minute, follow the TURN ON PROCEDURE and reload the threat load.
3. If the error still displays, return the system to an FSR.