

# COMM setup

Here we learn about how COMMs are setup for realistic missions.

This Includes:

- VHF/UHF
  - AM/FM
  - Guardfrq.
  - Buttons
  - DataLink COMMs/MIDs
- 
- F/A-18C Hornet - COMMs and Preset Button Usage
  - Understanding UHF, VHF, AM, and FM in the F/A-18C Hornet
  - MIDS Voice COMMs in the F/A-18C Hornet
  - Guard Frequency in the F/A-18C Hornet

# F/A-18C Hornet – COMMs and Preset Button Usage

In the F/A-18C Hornet, communication is managed through two ARC-210 radios: **COMM 1** and **COMM 2**, each with 20 programmable preset channels, known as “buttons.” These presets are configured prior to a mission and allow the pilot to quickly access the correct frequency for ATC, AWACS, tanker, strike coordination, and flight communications without manually tuning frequencies in-flight.

## Example COMMs Preset Layout

Below is an example preset configuration for a carrier-based mission in the Syria theater, used by a multi-element Hornet squadron:

### COMM 1 - ARC-210 (ATC, AWACS, Tankers)

| Button | Purpose             | Freq.    | Additional Info |
|--------|---------------------|----------|-----------------|
| 1      | Departure           | 127.5AM  |                 |
| 2      | CSG (STRIKE)        | 320.0AM  |                 |
| 3      | Recovery (Marshal)  | 127.5AM  | 55X, 5 ICLS     |
| 4      | AWACS (MAGIC)       | 251.0AM  |                 |
| 5      | AWACS (IMAGE)       | 256.0AM  |                 |
| 6      | Tanker (Arco 1-1)   | 254.0AM  | 11Y             |
| 7      | Damascus Tower      | 253.25AM |                 |
| 8      | Ramat David Tower   | 251.3AM  |                 |
| 11     | Tanker (Texaco 1-1) | 268.0AM  | Recv. 1Y        |



- **Buttons 1 & 3** are both ATC-related; Button 3 adds ICLS and TACAN info for carrier recovery.
- **Buttons 4-5** cover AWACS callsigns for picture and broadcast.
- **Buttons 6 & 11** are tankers, with TACAN channels for AAR navigation.
- **Buttons 7-8** provide regional tower freqs for Damascus and Ramat David in case of divert or transit ops.

# COMM 2 - ARC-210 (Flight COMMs)

| Button | Purpose              | Freq.   |
|--------|----------------------|---------|
| 1      | Flight (Phobetor 1)  | 301.0AM |
| 2      | Element (Phobetor 1) | 301.5AM |
| 3      | Flight (Phobetor 2)  | 302.0AM |
| 4      | Element (Phobetor 2) | 302.5AM |



- COMM 2 is reserved for **intra-flight communication**.
- **Flight** refers to all 4 jets in the element; **Element** refers to each 2-ship pair.
- This division helps keep comms concise during tactical execution.

# How to Switch Preset Channels

To switch between presets in the F/A-18C:

- 1. Use the UFC (Up Front Controller):**
  - Press the **COM 1** or **COM 2** button on the UFC.
  - Rotate the **channel select knob** just below the UFC screen to cycle through presets (1-20).
  - The currently selected button will appear in the top left of the UFC window.
- 2. Monitor and Talk:**
  - Ensure the desired radio (COMM 1 or COMM 2) is selected for transmission by checking the transmit selector knob on the **Audio Control Panel**.
  - A small dot will appear next to the active radio on the HUD or DDI when transmitting.
- 3. Manual Override (if needed):**
  - You can manually input a frequency via the UFC if a preset is unavailable, but preset switching is faster and less workload-intensive.

# Tactical Tips

- Use **COMM 1** for ATC, AWACS, tankers, and base frequencies.
- Use **COMM 2** for **tactical intra-flight communication**.
- Maintain discipline: only speak when necessary and always identify yourself (e.g., “Phobeter 1-2, tally two bandits, 240, 15 miles”).

# Understanding UHF, VHF, AM, and FM in the F/A-18C Hornet

Effective radio communication in the F/A-18C Hornet depends not only on proper frequency presets but also on understanding the **radio bands** and **modulation types** used: **UHF**, **VHF**, **AM**, and **FM**. These terms describe **how** and **where** a signal is transmitted and received.

## ☐☐ Radio Bands: UHF and VHF

| Band                          | Frequency Range       | Use in F/A-18C                                                                       | Notes                                                      |
|-------------------------------|-----------------------|--------------------------------------------------------------------------------------|------------------------------------------------------------|
| <b>UHF</b> (Ultra High Freq.) | 225.000 – 399.975 MHz | Primary for military ATC, AWACS, strike coordination, and aircraft-to-aircraft comms | Most default military channels are UHF                     |
| <b>VHF</b> (Very High Freq.)  | 30.000 – 174.000 MHz  | Used for ground comms (JTAC), ATC (civilian), and some regional towers               | VHF is often used for ground-based ops or coalition forces |

- 
- The **ARC-210** radios in the F/A-18C can operate in both UHF and VHF bands. Frequencies are manually entered or selected via preset channels.
  - Most **airborne assets (AWACS, tankers, flights)** will use **UHF**.
  - **Ground-based assets** (JTAC, civilian ATC, regional towers) may use **VHF**.

## ☐☐ Modulation Types: AM and FM

| Modulation                       | Use Case                    | Supported in F/A-18C | Notes                                                   |
|----------------------------------|-----------------------------|----------------------|---------------------------------------------------------|
| <b>AM</b> (Amplitude Modulation) | Standard for aviation comms | ✓ Yes                | Used for most UHF/VHF radio calls (ATC, AWACS, flights) |

| Modulation                       | Use Case                     | Supported in F/A-18C | Notes                                                                         |
|----------------------------------|------------------------------|----------------------|-------------------------------------------------------------------------------|
| <b>FM</b> (Frequency Modulation) | Ground forces, JTAC, and CAS | ✓ Yes                | Typically used in VHF band (30–88 MHz); more resistant to static/interference |

- **AM is default** and is used for nearly all aviation communications in DCS.
- **FM is used** when talking to **JTACs or ground units** via VHF (e.g., 30.00–76.00 MHz). The ARC-210 supports this, and DCS will auto-modulate based on frequency.

## How to Know What You're Using

- When tuning radios in DCS, you don't explicitly select AM or FM—the **modulation is determined by the frequency entered**.
- Example:
  - 251.000 → UHF AM
  - 30.000 → VHF FM
  - 127.500 → VHF AM
- As a rule:
  - **Above 108 MHz = AM**
  - **Below 88 MHz = FM**
  - **Between 108-174 MHz = AM** unless specifically in FM JTAC band

## Quick Comms Summary

| Frequency | Band | Modulation | Typical Use             |
|-----------|------|------------|-------------------------|
| 251.000   | UHF  | AM         | AWACS / Tower           |
| 127.500   | VHF  | AM         | Carrier ATC / Civil ATC |
| 30.000    | VHF  | FM         | JTAC / Ground troops    |
| 320.000   | UHF  | AM         | Strike package net      |
| 268.000   | UHF  | AM         | Tanker (Texaco)         |

- 

## In Practice (DCS Tips)

- Use **AM for all aircraft/airfield comms** unless you're talking to **JTAC or infantry units**.
- If using **SRS (Simple Radio Standalone)**, make sure your SRS settings allow **auto modulation switching** based on frequency.
- The **Hornet's radios do not allow manually selecting modulation type**—it's automatic based on freq.

# MIDS Voice COMMs in the F/A-18C Hornet

The **MIDS (Multifunctional Information Distribution System)** in the F/A-18C Hornet isn't just for Link-16 data—it also supports **encrypted voice communication** over two digital voice channels: **VOCA** and **VOCB**.

These can be used as additional comm channels for secure, low-latency coordination between flights, elements, or mission commanders—**especially useful when normal UHF/VHF radios are saturated or compromised**.

---

## ☐ VOCA and VOCB – What They Are

- **VOCA (Voice Channel A)** and **VOCB (Voice Channel B)** are two **digital voice channels** built into the MIDS terminal.
  - They **do not use traditional UHF/VHF frequencies**—instead, they ride on **Link-16 waveforms**, piggybacking off the tactical data link infrastructure.
  - Voice transmission is **digital, secure, and line-of-sight (LOS)** only.
- 

## ⚙️ How MIDS Voice Works in the F/A-18C

1. **Channel Selection:**
  - VOCA and VOCB are each assigned a **MIDS Voice Channel** between **1 and 126**.
  - These channels **must be set identically across all aircraft** intending to communicate on the same VOCA or VOCB net.
  - Channel **127 is a special case—selecting channel 127 disables MIDS voice on that channel** entirely.
2. **Radio Binding:**
  - Once set, you can transmit over VOCA/VOCB just like a normal radio.
  - Voice activity over VOCA/VOCB is not displayed in the normal ARC-210 frequency windows but can be monitored using the **AUDIO PANEL** toggles.
3. **Setup in DCS:**



- MIDS channels are typically set via the **D/L (Data Link) page** on the UFC or **MIDS Control Panel**.
  - Ensure VOCA/VOCB are on assigned, matching channels across aircraft.
  - Toggle VOCA or VOCB transmit via the **Audio Panel's rotary selector** behind your left hip
- 

## ☐ Advantages of MIDS Voice

- ☐ **Encrypted and secure** – immune to most jamming and eavesdropping in DCS.
  - ☐ **Frees up UHF/VHF radios** for other roles (e.g., AWACS, tower, package net).
  - ☐ **Integrated with Link-16**, so all participants on the network have voice and data link automatically aligned.
  - ☐ **Very low latency**, ideal for tactical comms between close-range cooperating flights.
- 

## ☐ Limitations / Caveats

- ☐ **Line-of-sight only** – no ground station relays; if terrain blocks LOS, comms will drop.
  - ☐ **No feedback on frequency or signal strength** like UHF/VHF radios.
  - ☐ **Can be hard to manage if your team isn't disciplined about VOCA vs. VOCB roles.**
- 

## ☐☐ Quick Setup Checklist (DCS)

1. On the D/L UFC page:
    - Set **MIDS A Voice Channel** to e.g.,
    - Set **MIDS B Voice Channel** to e.g.,
  2. On the **Audio Control Panel**:
    - Rotate COMM selector knob to **VOCA** or **VOCB**
    - Toggle transmit switch ON for that channel
  3. Transmit like any other radio using the assigned COMM switch (usually HOTAS bound)
- 

## ☐☐ SRS Note (if using Simple Radio Standalone)

- MIDS voice isn't supported directly in SRS.

- However, VOCA/VOCB behavior can be **simulated** by binding a separate SRS channel (e.g., SRS Radio 3 and 4) and assigning it to your VOCA/VOCB function for training or realism purposes.

# Guard Frequency in the F/A-18C Hornet

The **Guard frequency** is a critical part of your communications setup in any aircraft—and the F/A-18C is no exception. In both real-world and DCS operations, monitoring Guard is essential for **safety, coordination, and emergency response**.

---

## ▣▣ What Is Guard?

The **Guard frequency** is a set of two international emergency channels that are always monitored by military and civilian aircraft:

- **UHF Guard:** 243.000 MHz – used primarily by **military aircraft**
- **VHF Guard:** 121.500 MHz – used by **civilian aircraft**, but also monitored by many military units

These frequencies are used for:

- **Distress calls (MAYDAY / PAN PAN)**
- **Airspace deconfliction**
- **Lost comm procedures**
- **Emergency coordination**

In DCS, **UHF Guard (243.000)** is the most relevant.

---

## ▣▣ How the Hornet Handles Guard

The F/A-18C automatically **monitors UHF Guard in the background**, regardless of which frequency you're actively tuned to—as long as **Guard is enabled on your Audio Control Panel**.

You can listen to and transmit on Guard using the following controls:

---

## ▣▣ Guard Monitoring Controls

## Listening to Guard

1. Look at the **Audio Control Panel** (left console, below the left DDI).
2. The **COMM 1 and COMM 2 knobs** include a setting labeled **G** for **Guard**.
3. Rotate the **selector knob** to **G** to monitor Guard frequency audio.
4. Adjust volume using the corresponding **COMM volume knob**.

“ Note: You can monitor Guard **alongside any other active frequency**, making it great for picking up emergency calls without missing your flight comms.

---

## Transmitting on Guard

If you need to transmit on Guard (rare but possible in emergencies):

1. **Set COMM 1 or COMM 2 to manual mode**
2. **Dial in 243.000 MHz**
3. Transmit as usual using your assigned COMM switch

“  Most Hornet squadrons **monitor Guard passively** but do not transmit on it unless instructed or in an emergency.