



L-3 EW Flight Test Range Overview / Capabilities

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Or Visit www.L3MidWesternTestRange.Com





L-3 EW Flight Test Range



- The Multi-Sensor Flight Test Facility (MSTF) Is Located on Over 100 Acres of Land Adjacent to the L-3 Communications Integrated Systems Division at Greenville, Texas
- We Specialize in Electronic Warfare, Reconnaissance, and Communications Systems Flight Testing and Training (COMINT/SIGINT/ELINT/RWR/ECM)
- Red / Grey / Blue Radar Threat Simulation from Multiple Emitters
- If You're Looking for HF To 40 GHz Radiated Signal Sources for EW Flight Test We Offer a Low Cost Solution for Commercial or Government Programs





L-3 EW Flight Test Range





L-3 EW Flight Test Range





L-3 EW Flight Test Range



The MSTF is a Commercially Available Range That Provides:

- Access to 500+ Frequencies for RF Testing Purposes
- Over 100,000 Square Miles of Tracked Area for Flight Testing
- Limited Environmental Concerns for Close-In VFR Flight (Noise Pollution, Endangered Species, High Population Density)
- 8000 Foot Runway to Accommodate Almost Any Type of Aircraft
- FAA-Certified Air Traffic Control and Fire / Crash Departments
- Department of Defense-Certified Security





L-3 EW Flight Test Range



Tracking / Signal Source Capabilities Include:

- IFF Target Acquisition / Tracking (300 NM max)
 - ◆ Modes 2, 3A/C, 4, and S (ADS-B)
 - ◆ Mode 5 In Work
- Slaved Signal Source Pointing (20 MHz- 40 GHz)
- Programmable Complex RF Modulation Systems
- GPS Time Synchronized Waveform Timing
- Antenna Polarization Diversity
- Mobile Communications and Radar Simulator Sources





L-3 EW Flight Test Range



Communications:

- Land line, HF (AM,LSB/USB), VHF (AM/FM), UHF (AM/FM, SATCOM)
- Secure or Clear Voice/Data/Fax/Phone Patch
- SATCOM Simulation (Dedicated or DAMA) testing
- Long Distance Support to Off-Site Users
- Multiple “Special” Mobile Radios
- Mobile and Remote Site Communications Nets





L-3 EW Flight Test Range



■ Current Customers Include

- ◆ Rivet Joint, Combat Sent, Cobra Ball, F-16, Compass Call, Senior Scout, P-3, Calico Jack, Liberty, NCCT Participants, and Others.....





L-3 EW Flight Test Range



COMINT SYSTEM 1



MULTI-BAND EMITTER



NIKE EMITTER



COMINT SYSTEM 2



**BLACKBIRD EMITTERS
AND RECEIVER**



THOR EMITTER





L-3 EW Flight Test Range



ESV EMITTERS



ASR-X

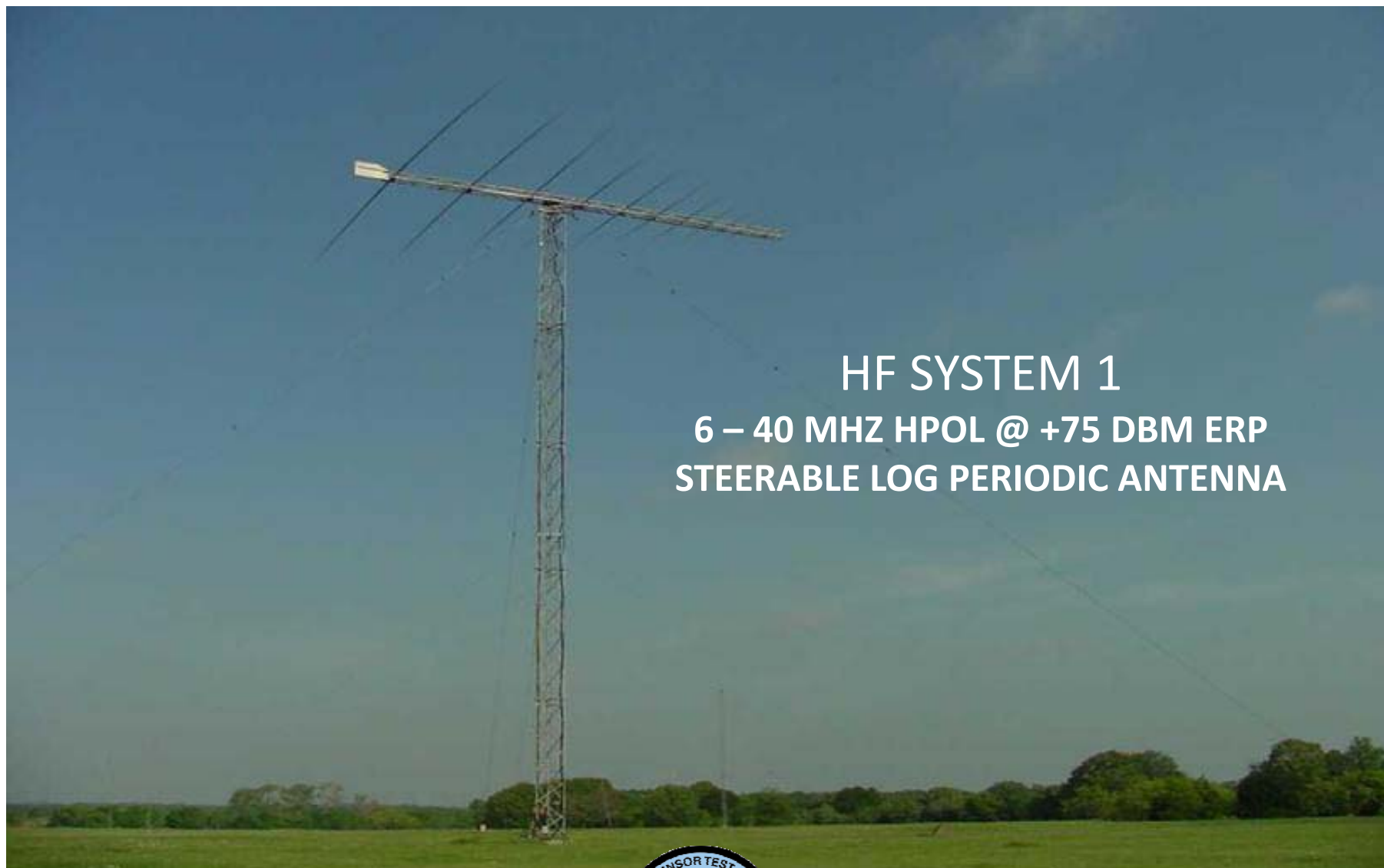


HF COMMS





L-3 EW Flight Test Range



HF SYSTEM 1
6 – 40 MHZ HPOL @ +75 DBM ERP
STEERABLE LOG PERIODIC ANTENNA





L-3 EW Flight Test Range



HF SYSTEM 2
2 – 30 MHZ HPOL @ +75 DBM ERP
FIXED ANTENNA (POINTING EAST)

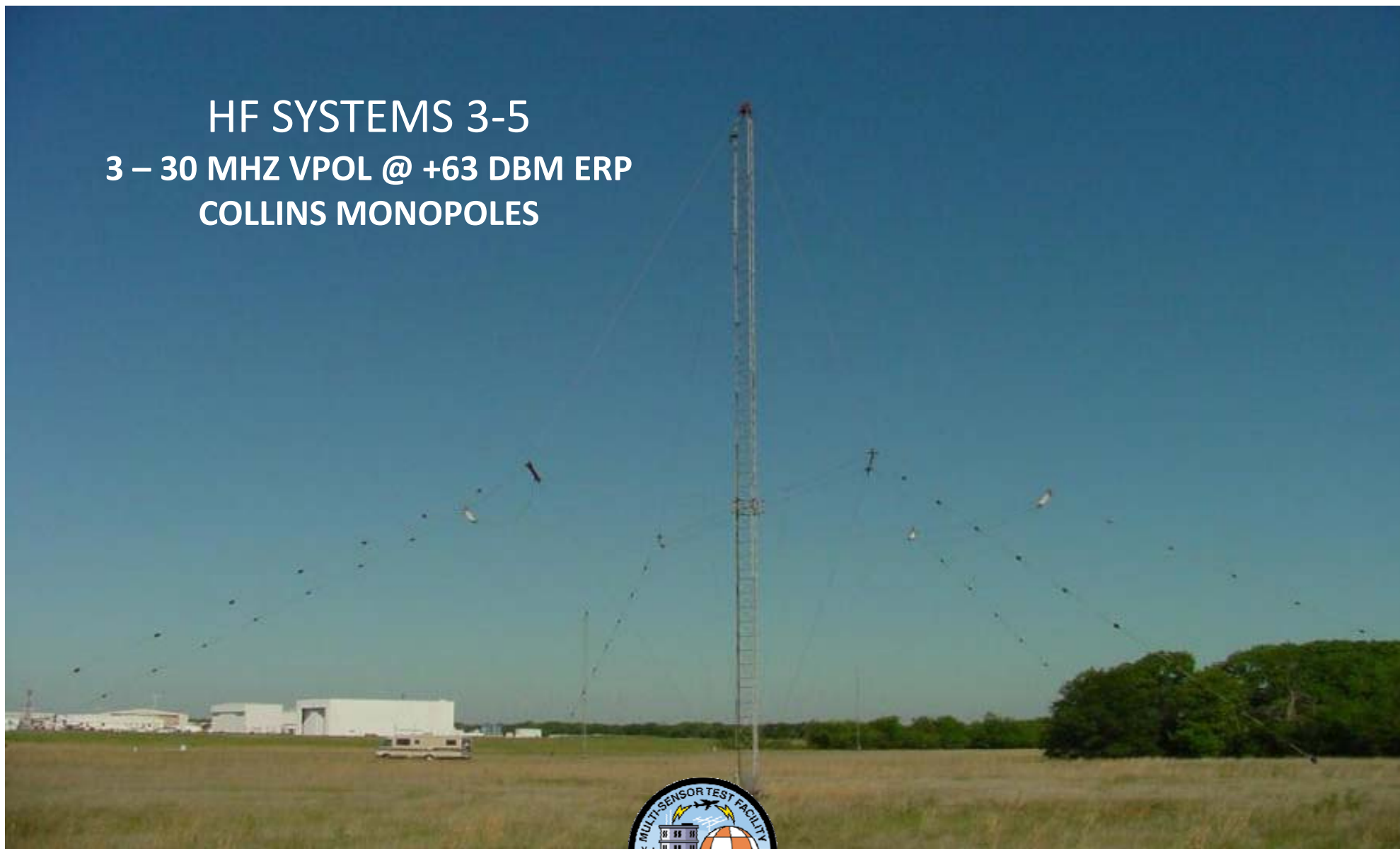




L-3 EW Flight Test Range



HF SYSTEMS 3-5
3 – 30 MHZ VPOL @ +63 DBM ERP
COLLINS MONOPOLES





L-3 EW Flight Test Range



COMINT SYSTEM 1

20 – 1000 MHZ @ +53 DBM ERP

1000 – 4200 MHZ @ +58 DBM ERP

2 SIMULTANEOUS FREQS TRANSMITTED

OVER 300 FREQ STEPS AVAILABLE

GPS TIME SYNCHRONIZATION





L-3 EW Flight Test Range



COMINT SYSTEM 2
20 – 1000 MHZ @ +53 DBM ERP
1000 – 4200 MHZ @ +58 DBM ERP
2 SIMULTANEOUS FREQS TRANSMITTED
OVER 300 FREQ STEPS AVAILABLE
GPS TIME SYNCHRONIZATION



MULTI-BAND EMITTER

- 5 Independent Bands
 - ◆ 0.5 - 4 GHz
 - ◆ 4 - 8 GHz
 - ◆ 8 - 18 GHz
 - ◆ 18 - 26 GHz
 - ◆ 26 - 40 GHz
- Super-stepper Mode
Provides 164 Simultaneous
Freqs from 0.5 – 18 GHz with
Antenna Polarization
Switching, Pulse Width / PRI
Coding, GPS Pulse Time
Synchronization

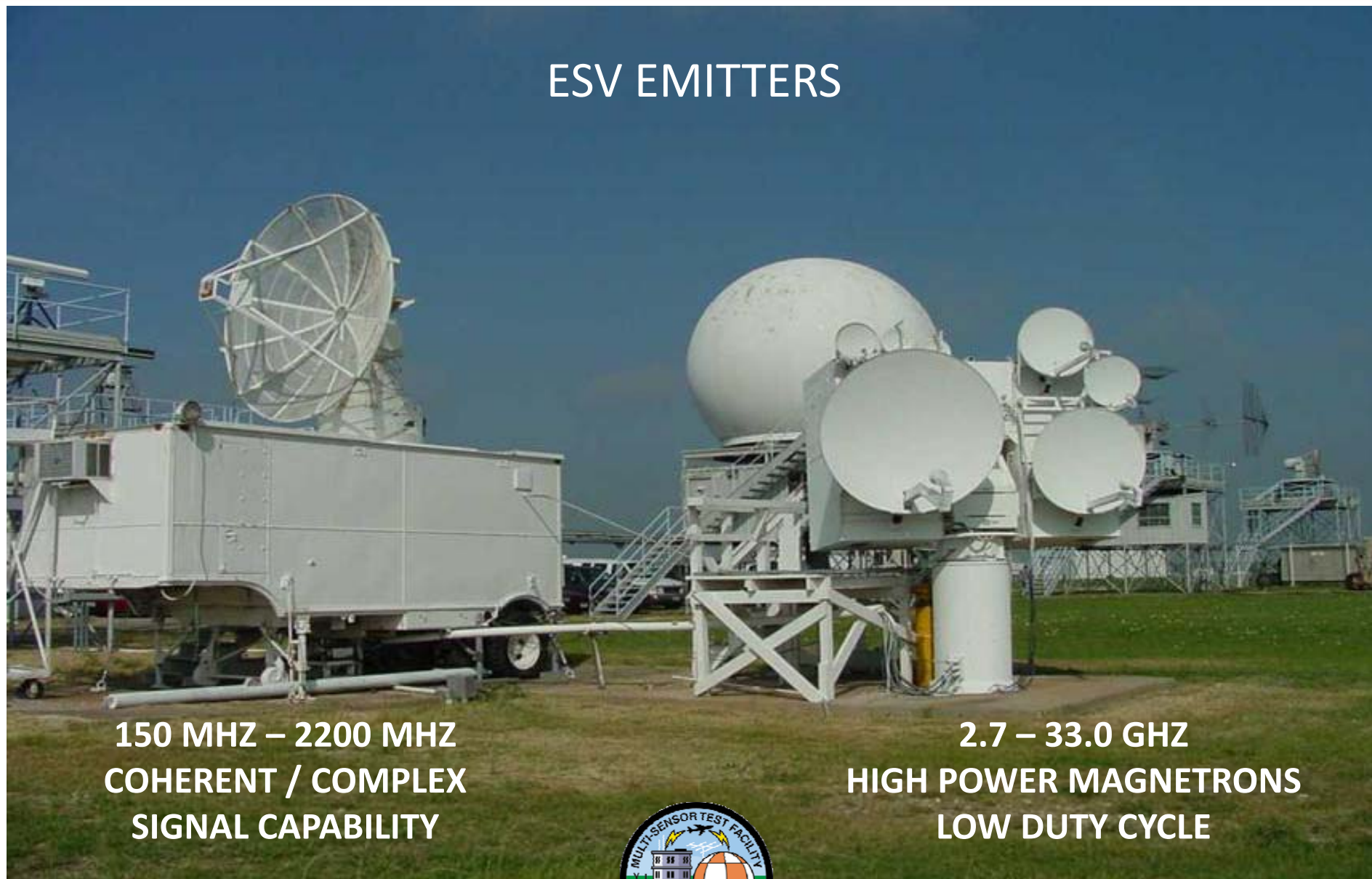




L-3 EW Flight Test Range



ESV EMITTERS



**150 MHZ – 2200 MHZ
COHERENT / COMPLEX
SIGNAL CAPABILITY**

**2.7 – 33.0 GHZ
HIGH POWER MAGNETRONS
LOW DUTY CYCLE**





L-3 EW Flight Test Range



ASR-X

Rotating Antenna

2700-2900 MHz

Programmable Waveforms

5 Billion Watts Max ERP



BLACKBIRD EMITTERS AND RECEIVER

• 1 RECEIVE SYSTEM

- * BB3: 1 TO 18 GHZ
- * DVD SPECTRUM RECORDING
- * SPECTRUM DATA LOGGING

2 TRANSMIT SYSTEMS

- * BB1: 2 TO 8 GHZ, 500 KW ERP
- * BB2: 8 TO 18 GHZ, 1 MW ERP

***** DEPLOYABLE *****





L-3 EW Flight Test Range



BLACKBIRD EMITTER AND RECEIVER
DEPLOYED AT REMOTE SITE FOR
TOWED ECM DECOY TESTING





L-3 EW Flight Test Range



NIKE EMITTER
8500 – 9800 MHZ
PROGRAMMABLE WAVEFORMS
1 MW ERP





L-3 EW Flight Test Range



THOR EMITTER

- 6 SIMULTANEOUS BANDS
- 0.1-18.0 GHz
- CALIBRATED/RECORDED ERP
- +92 DBM MAX ERP
- COMPLEX TEST SIGNALS
- RADAR SIMULATION





L-3 EW Flight Test Range



Moving Emitter

- Mobile Furuno Radar
- 9380 - 9440 MHz
- 50 Million Watts Peak ERP
- Rotating Antenna
- Multiple PW / PRIs
- IFF Transponder





L-3 EW Flight Test Range



Hot Spot RF Spectrum Monitoring

- Boresite, ERP Cal, Real Time Monitoring Across 3 Bands:
 - ◆ 0.02 – 2 GHz
 - ◆ 2-18 GHz
 - ◆ 18-40 GHz
- 40 GHz Spectrum Analyzer
- Remote LAN Control
- Range Control Center Spectral Display



Radar Threat Simulation

- Ground, Naval, and Airborne Radar Simulation
- Blue, Grey, Red
- Approx 100 Radars in the Current Library with Multiple Modes
- Programmable for User Customization
- Up to 17 Simultaneous Signals





L-3 EW Flight Test Range



ECM Response Collection

- Jamming Authorized for Some Frequency Bands
- Airborne Jammer Signal Collection Available from 1-18 GHz
 - ◆ Spectral Display Recorded on DVD in Freq or Time Domain
 - ◆ IRIG-B and Radio Recorded on Audio Channels
 - ◆ Spectral Data Logger at 6 Samples/Sec





L-3 EW Flight Test Range



L-3 Radar Simulation Advantages

- Quick Programming for Simulation of Almost Any Threat Radar Signal
- Controlled, Developmental Flight Test Before Going to a Difficult to Schedule, More Expensive Range
- Ability to Program Freqs/Modes that “Real” Test Systems May Not Have Available
- **Full Radiated Test on the Flight Line Before Takeoff Using the Same Signal Sources as for Flight**





L-3 EW Flight Test Range

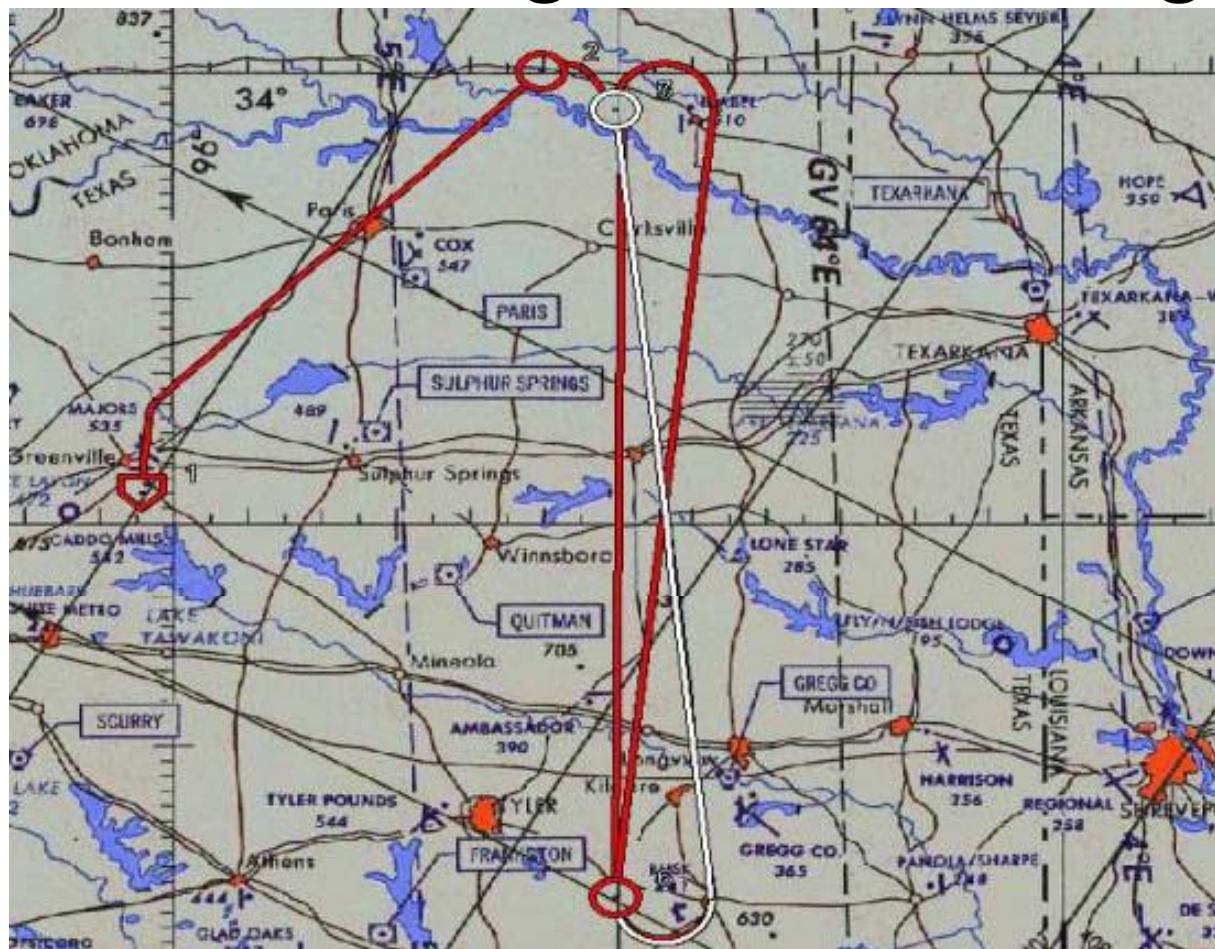


Airspace Coordination

- Standard Routes Available Mid-Way Between Greenville and Arkansas/Louisiana Borders
- Fort Worth Center Coordination Required for High Altitude Profiles, Preferably 48 Hours in Advance
- Low Altitude VFR for Close-In Profiles Anytime
- High Speed/Low Altitude FAA Waivers Available



Standard Medium Range Calibration Flight Profile





L-3 EW Flight Test Range



Test Range Summary

- Custom/Complex RF Sources for Aircraft Calibration
- High Fidelity EW/ACQ, SAM, and AI Radar Simulations
- Rapid Reprogramming for Additional Complex Signals
- Radiated Test on the Flight Line Before Flight
- Readily Accessible Airspace
- Available Today
- Very Affordable

