

## **Diagrams and Photos of Test Setup for**

# **RTA-44D VHF Data Radio, Honeywell PN 064-50000-2000, -2051 FCCID: AOIRTA-44DM2**

## **General Test Requirements**

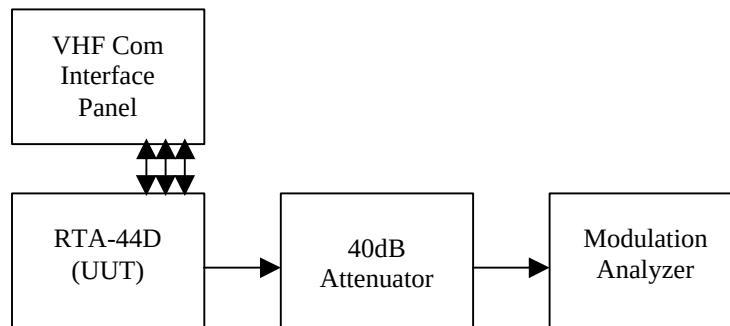
### Equipment Required

- VHF Communications Interface Panel with 28V Power Supply
- Protocol Analyzer
- Power Meter – Boonton 4400A
- Modulation Analyzer – HP8901B
- Signal Generator (for Reference Oscillator) - Marconi 2030
- Audio Signal Generator – HP33120A (or HP8903B Audio Analyzer)
- Spectrum Analyzer – Rohde&Schwarz FSEM-30
- Directional Coupler – Narda 3002-10
- Cavity Bandstop Filters – TX/RX Systems 20-35-02
- 40dB High Power Attenuator – Weinschel 40-40-33
- 20dB High Power Attenuator – Pasternak PE7026-30
- Amplifier – Mini-Circuits ZHL-1217MLN.

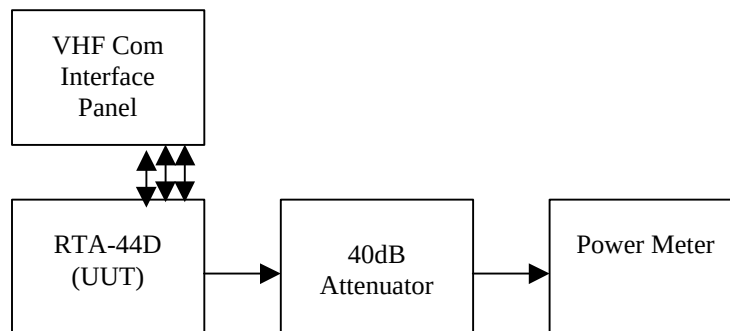
NOTE: All test equipment shall operated in accordance with the manufacturer's published operational procedures and be up-to-date within its normal calibration cycle.

## RF Output Power (paragraph 2.1046 of CFR – Title 47, Telecommunications)

### 716 Mode and 750 Mode A Test Setup

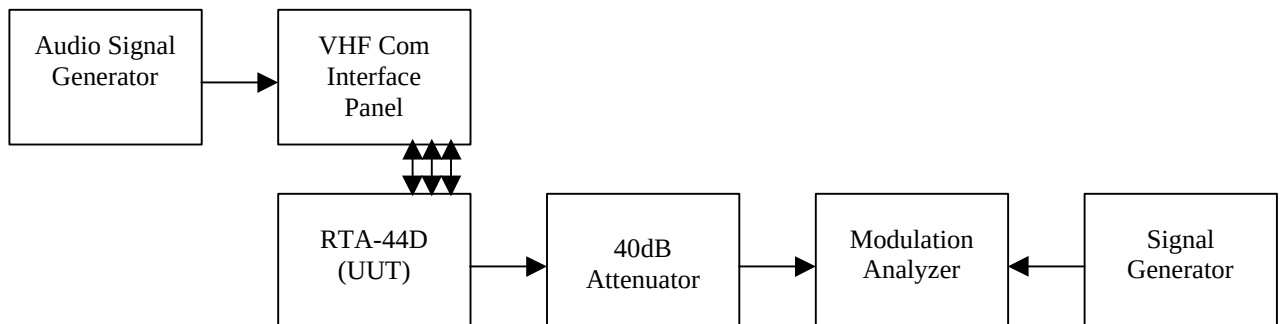


### 750 Mode 2 Test Setup



## Modulation Characteristics (paragraph 2.1047 of CFR – Title 47, Telecommunications)

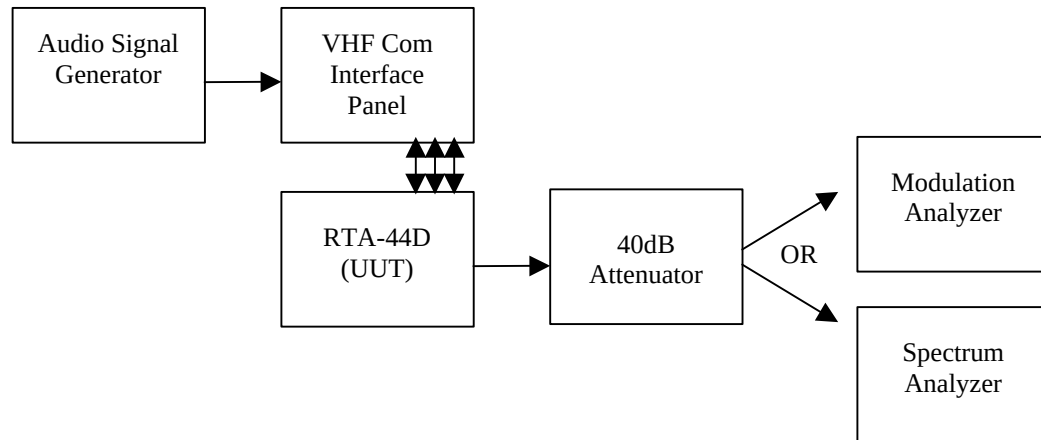
### 716 Mode Test Setup



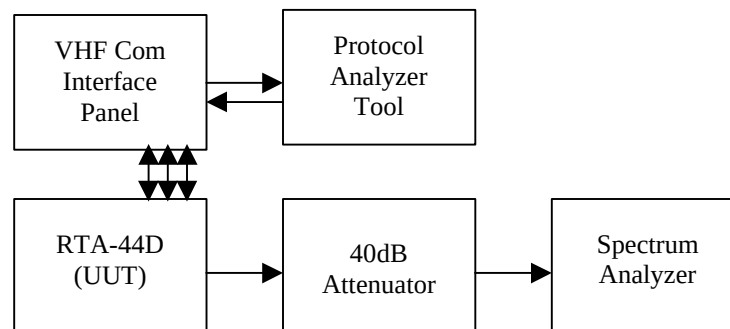
NOTE: 750 Mode A and 750 Mode 2 do not use analog audio inputs, but rather an internal modem, and therefore there are no modulation response measurements.

## Occupied Bandwidth (paragraph 2.1049 of CFR – Title 47, Telecommunications)

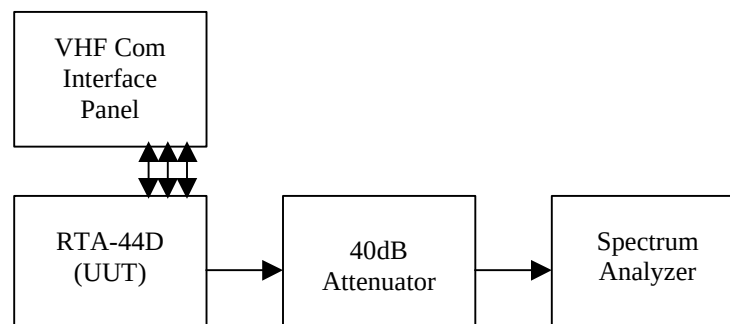
### 716 Mode Test Setup



### 750 Mode A Test Setup

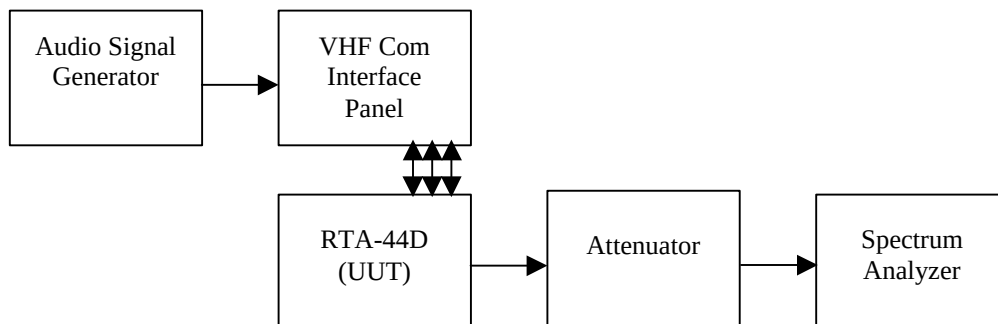


### 750 Mode 2 Test Setup



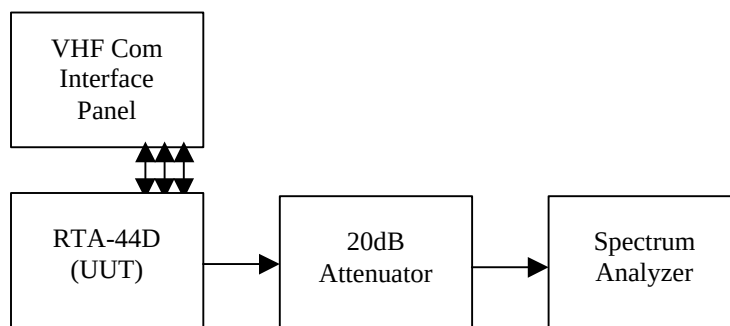
**Spurious Emissions at Antenna Terminal (paragraph 2.1051 of CFR – Title 47, Telecommunications)**

**716 Mode Test Setup**



NOTE: Since all RF generation and power control circuitry for 750 Mode A is identical to that of 716 Mode operation, the spurious emissions will not be tested specifically for 750 Mode A. The only difference between the modes is that in 750 Mode A, the modulation is internally generated. Therefore, the emissions data for 716 mode shall be acceptable for 750 Mode A operation.

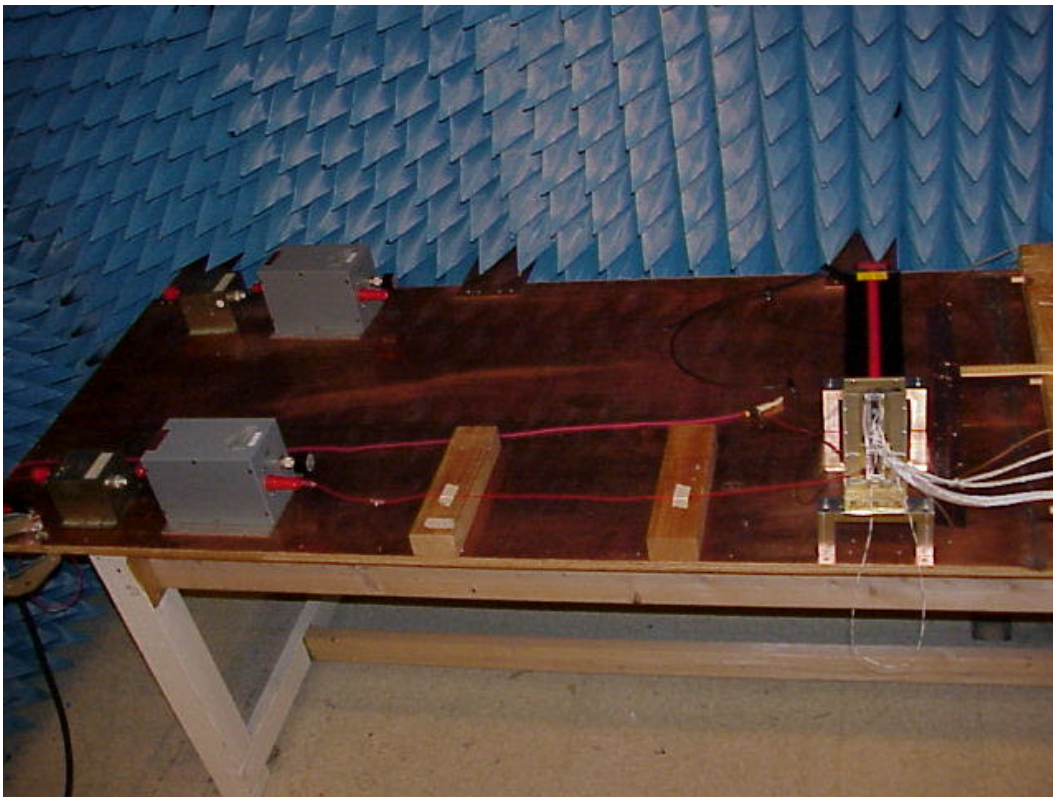
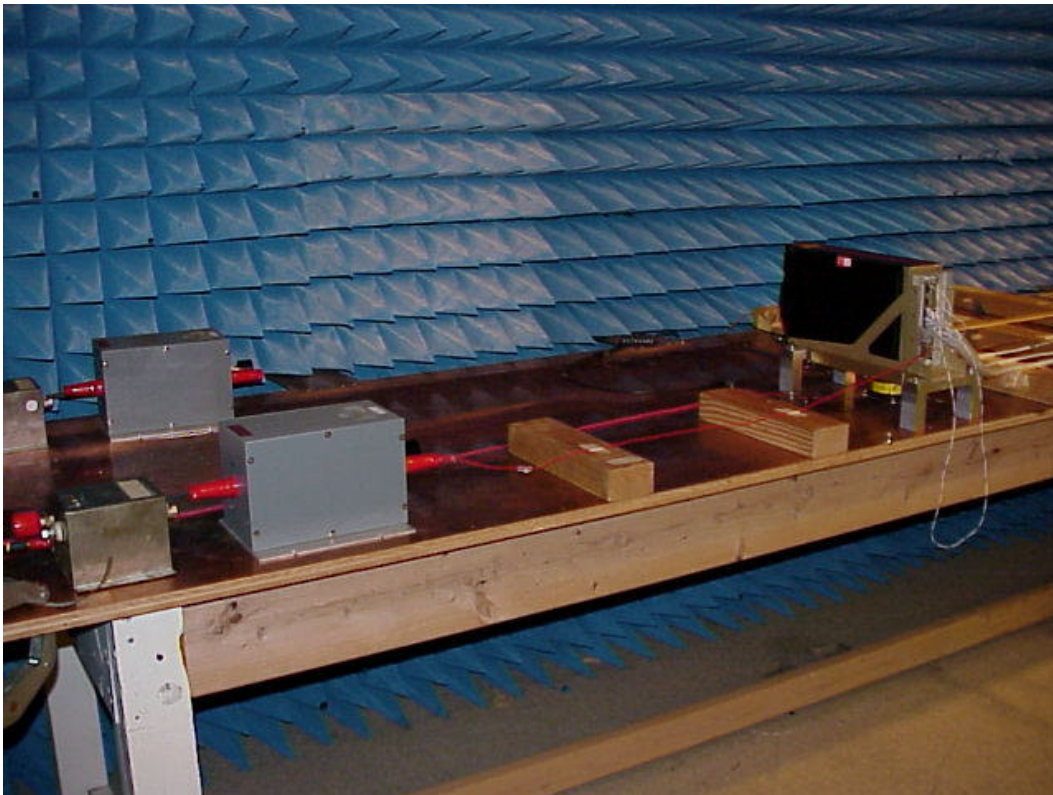
**750 Mode 2 Test Setup**



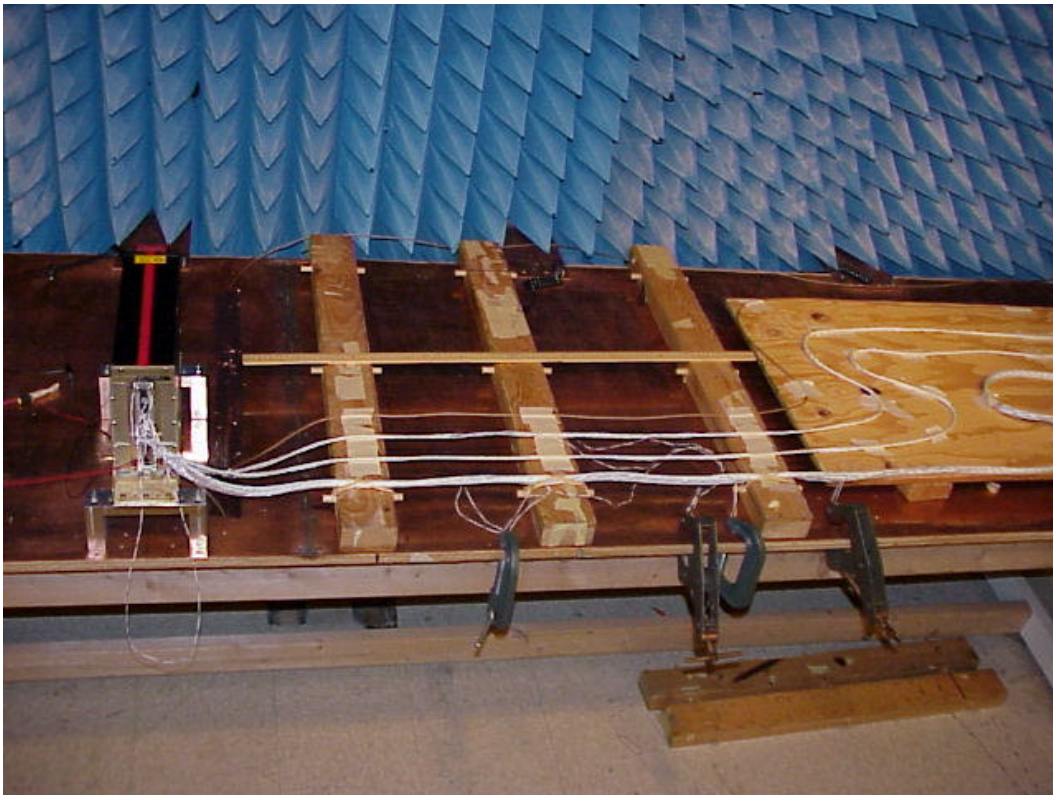
**Field strength of spurious radiation (paragraph 2.1053 of CFR – Title 47, Telecommunications)**

The radiated spurious emissions are measured per section 9.7 of Honeywell 076-0963-101, “Qualification Test Procedure for the RTA-44D VHF Data Radio Mode 2, Honeywell PN 064-50000-2000, -2051”, the setup and results of which are part of Honeywell 076-0963-401, “Qualification Test Report for the RTA-44D VHF Data Radio Mode 2, Honeywell PN 064-50000-2000, -2051”. The test methodology and results are in accordance with RTCA Document DO160D, Change Notice 1 and Boeing Requirements Document D6-16050-4. The emission measurements are representative of a typical airframe installation for which this equipment is intended and the emission limits are compatible with the airframe isolation characteristics to ensure interference free operation between both aircraft-installed and external-to-aircraft equipment and antennae.

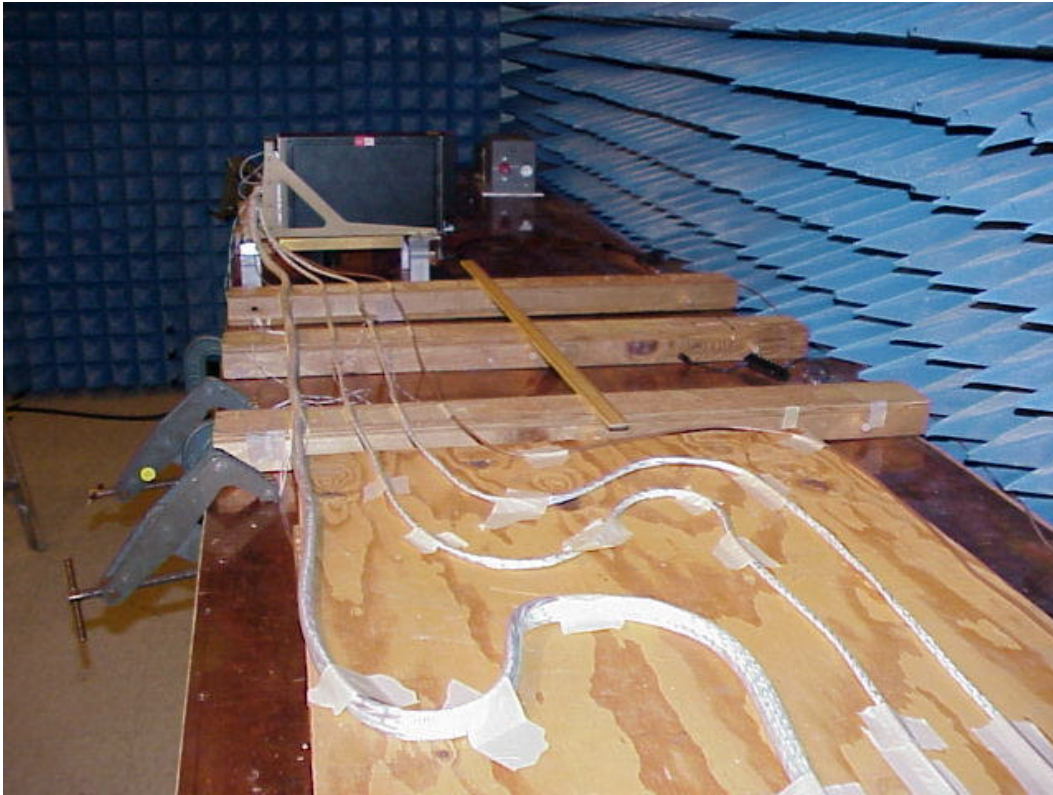
(Photos of setup included)



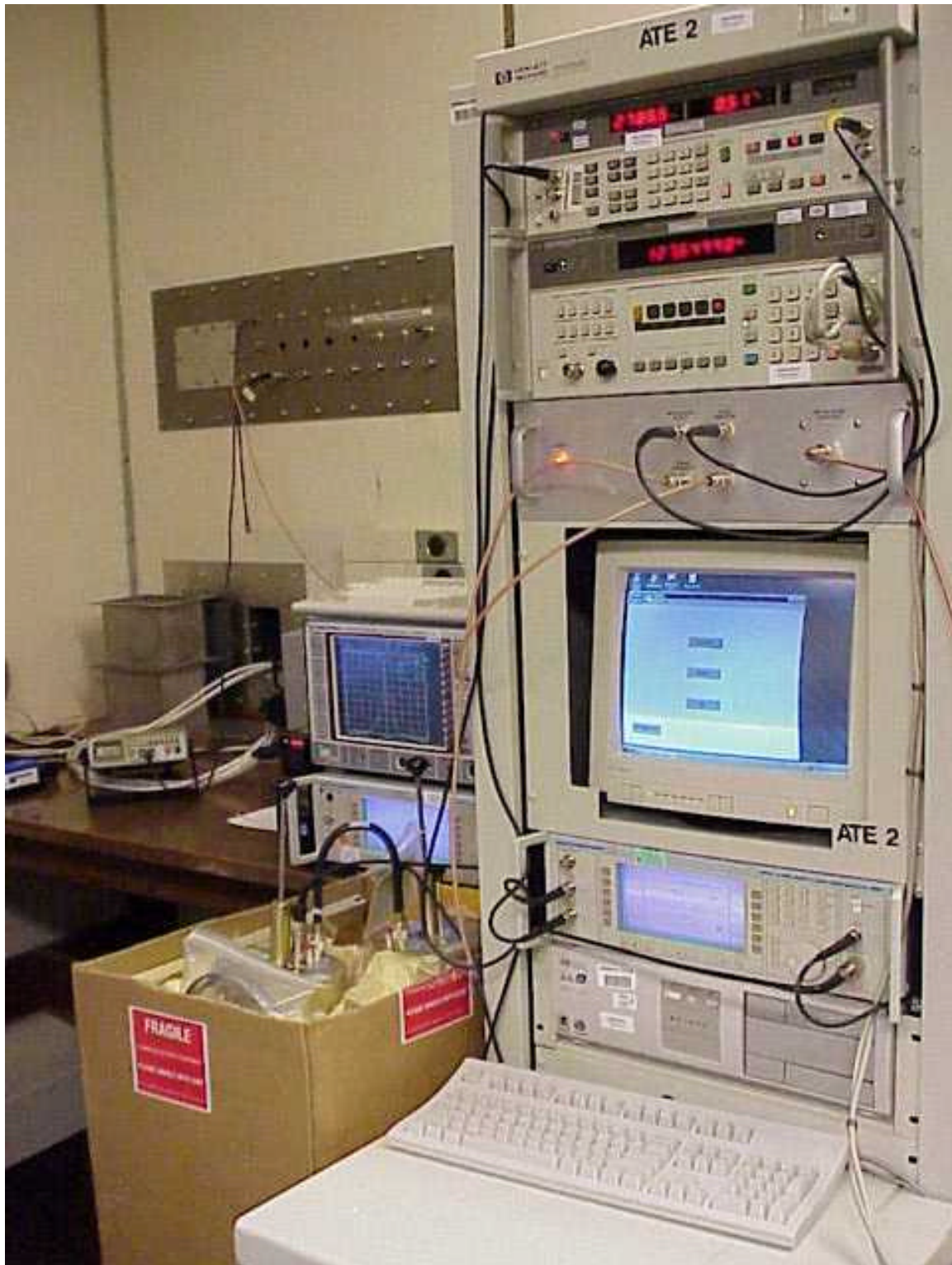
**RTA-44D in EMI Test Chamber showing Power input lines and Line Impedance Stabilization Network (LISN)**



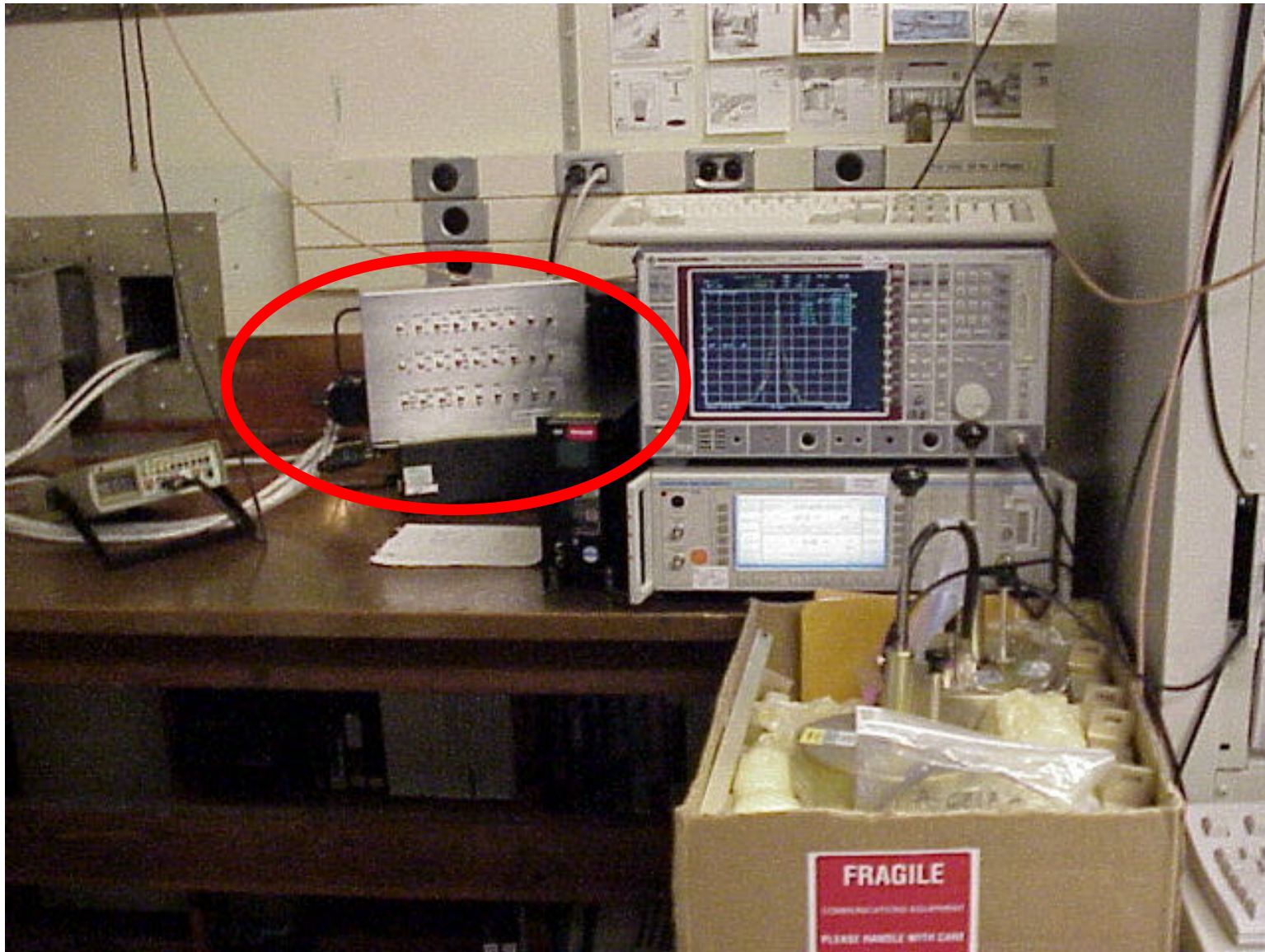
**RTA-44D in EMI Test Chamber showing Interconnecting Cable Harness**



**RTA-44D in EMI Test Chamber showing Interconnecting Cable Harness**



**Test Equipment in EMI Control Room  
(Interface to Chamber is panel and waveguide flange on wall)**



**Test Equipment in EMI Control Room (highlighting Interface Tray with Switched Load Box).**

## Frequency Stability (per paragraph 2.1055 of CFR – Title 47, Telecommunications)

NOTE: Since frequency generation and control circuits are common in all modes, only one test in one particular mode for frequency stability shall be adequate.

### 716 Mode frequency stability Test Setup

