

Measured Transmission Spectra

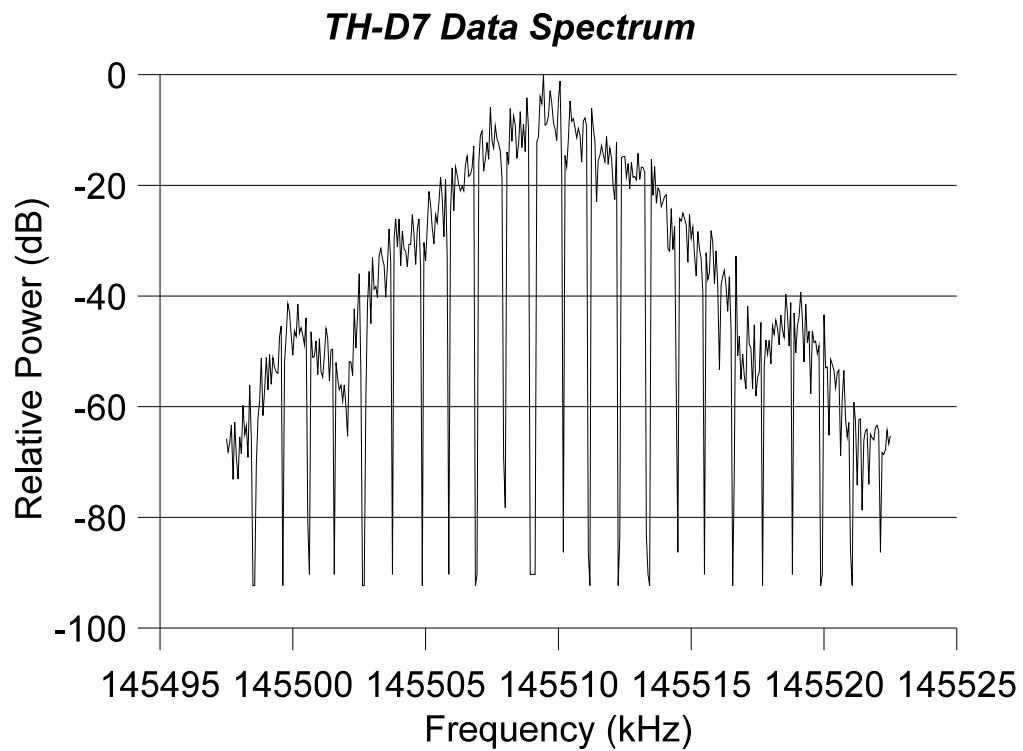


Figure 1 - Measured output spectrum of the Kenwood TH-D7 while transmitting digital data at 9600 bps. Spectrum measurements made with a HP 4195A spectrum analyzer.

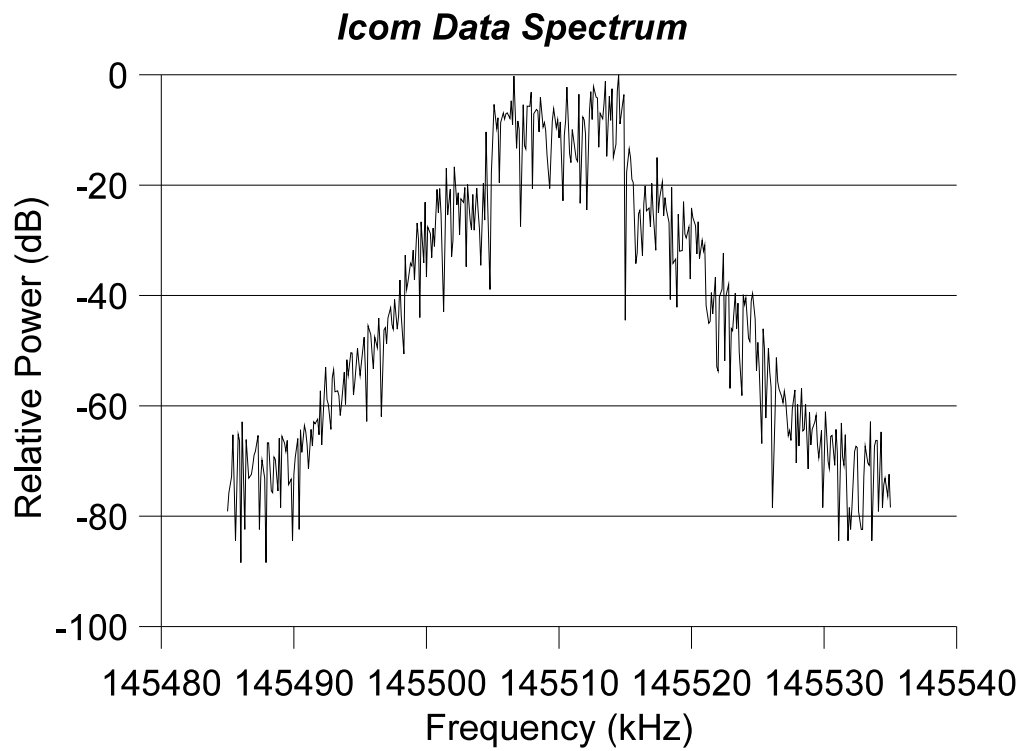


Figure 2 - Measured output spectrum of the Icom transmitter while transmitting digital data at 9600 bps. Spectrum measurements made with a HP 4195A spectrum analyzer

NTIA Manual Section 10.7.3 Attachment 2 – For Space Systems

1. Space Station Data (data are the same for each of the two satellites in the 3 Corner Satellite Constellation)
 - a. Satellite orbital characteristics (at start of mission)
 - i. Apogee: 135.61 nmi
 - ii. Perigee: 101.85 nmi
 - iii. Inclination: 28.8°
 - b. Station Characteristics:
 - i. Receive
 - (1) band: 447.5 MHz
 - (2) cooperating earth stations: ASU, NMSU, KWNAS and UPR
 - (3) emission designator: 16K88F1DBN
 - (4) receiver noise temperature: 6011 K
 - ii. Transmit
 - (1) band: 137.725 MHz
 - (2) cooperating earth stations: ASU, CU, NMSU, KWNAS, and UPR
 - (3) emission designator: 8K44F1DBN
 - (4) peak power: 1 Watt
 - (5) spectral power density: 1 Watt over 30 kHz
 - iii. Inter-satellite service (transmit and receive)
 - (1) band: 437.5 MHz
 - (2) cooperating space stations: a constellation members
 - (3) emission designator: 8K44F1DBN
 - (4) peak power: 0.5 Watt
 - (5) spectral power density: 0.5 Watt over 30 kHz
 - (6) receiver noise temperature: 6011 K

2. Earth Station Data
 - a. New Mexico State University (NMSU) earth station
 - i. Location: Las Cruces, New Mexico
 - ii. Coordinates: 32° 16' 53" N, 106° 45' 12" W
 - iii. Station Characteristics:
 - (1) Receive
 - (a) band: 137.725 MHz
 - (b) satellites accessed: all 3 Corner Satellite Constellation members
 - (c) emission designator: 8K44F1DBN
 - (d) antenna gain: 15 dBiC
 - (e) antenna beamwidth: 34°
 - (f) lowest receiver noise temperature: 4490 K
 - (2) Transmit (backup):
 - (a) band 447.50 MHz
 - (b) satellites accessed: all 3 Corner Satellite Constellation members
 - (c) emission designator: 16K88F1DBN
 - (d) maximum output power: 40 Watts
 - (e) antenna gain: 17.3 dBiC
 - (f) antenna beamwidth: 25°
 - (3) minimum elevation angle of antenna main beam: 0°
 - (4) range of azimuth angles: 360 °
 - (5) antenna altitude above ground: 40 feet (roof-top mounted)

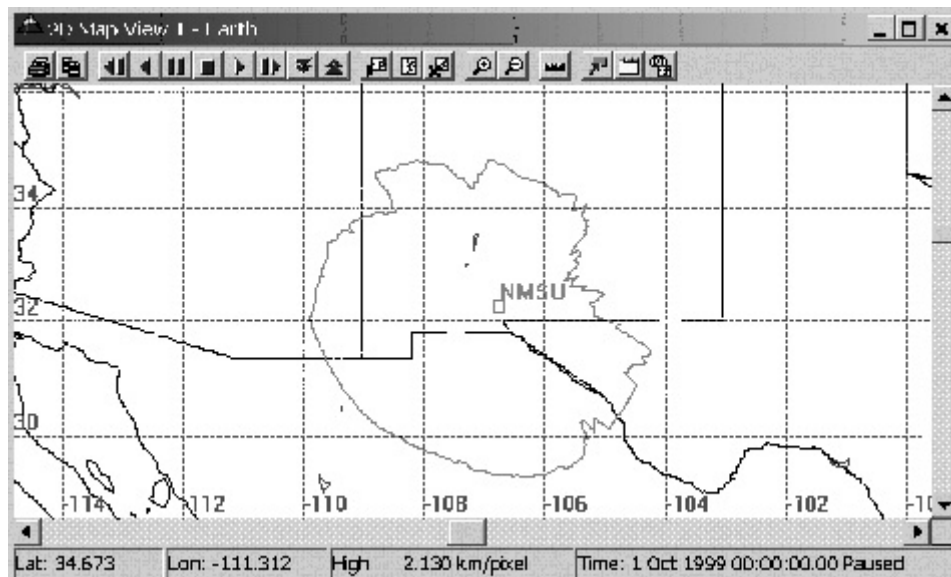


Figure 3 - Las Cruces, New Mexico azimuthal coordination diagram.

- b. Arizona State University (ASU) earth station
- i. Location: Tempe, Arizona
 - ii. Coordinates: 33°, 25' 12" N, 111° 55' 52" W
 - iii. Station Characteristics:
 - (1) Receive:
 - (a) band: 137.725 MHz
 - (b) satellites accessed: all 3 Corner Satellite Constellation members
 - (c) emission designator: 8K44F1DBN
 - (d) antenna gain: 15 dBiC
 - (e) antenna beamwidth: 34°
 - (f) lowest receiver noise temperature: 4490 K
 - (2) Transmit (backup):
 - (a) band: 449.90 MHz
 - (b) satellites accessed: all 3 Corner Satellite Constellation members
 - (c) emission designator: 16K88F1DBN
 - (d) maximum output power: 40 Watts
 - (e) antenna gain: 17.3 dBiC
 - (f) antenna beamwidth: 25°
 - (3) minimum elevation angle of antenna main beam: 0°
 - (4) range of azimuth angles: 360 °
 - (5) antenna altitude above ground: 70 feet (roof-top mounted)

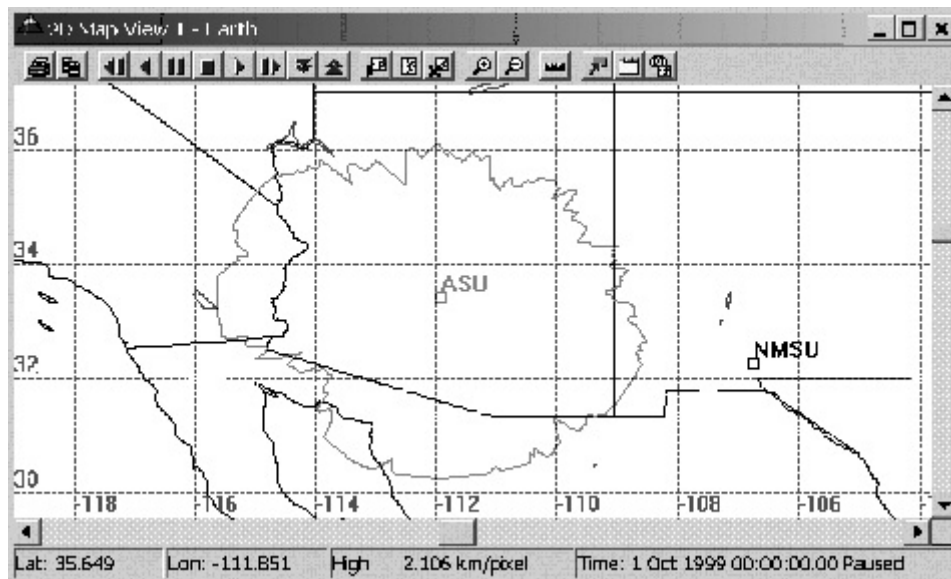


Figure 4 - Tempe, Arizona azimuthal coordination diagram.

- c. Key West Naval Air Station (KWNAS) earth station
 - i. Location: Key West Naval Air Station, Key West FL
 - ii. Approximate Coordinates: 24° 34' 45" N, 81° 41' 40" W (exact location to be determined once ground station is set up)
 - iii. Station Characteristics:
 - (1) Receive:
 - (a) band: 137.725 MHz
 - (b) satellites accessed: all 3 Corner Satellite Constellation members
 - (c) emission designator: 8K44F1DBN
 - (d) antenna gain: 15 dBiC
 - (e) antenna beamwidth: 34°
 - (f) lowest receiver noise temperature: 4490 K
 - (2) Transmit (contingency)
 - (a) band: 447.50 MHz
 - (b) satellites accessed: all 3 Corner Satellite Constellation members
 - (c) emission designator: 16K88F1DBN
 - (d) maximum output power: 40 Watts
 - (e) antenna gain: 17.3 dBiC
 - (f) antenna beamwidth: 25°
 - (3) minimum elevation angle of antenna main beam: 0°
 - (4) range of azimuth angles: 360 °
 - (5) antenna altitude above ground: 6 feet

- d. University of Puerto Rico, Rio Piedras Campus earth station
 - i. Location: Rio Piedras, PR; San Juan County
 - ii. Coordinates: 18° 24' 06" N, 66° 3' 6" W
 - iii. Station Characteristics:
 - (1) Receive:
 - (a) band: 137.725 MHz
 - (b) satellites accessed: all 3 Corner Satellite Constellation members
 - (c) emission designator: 8K44F1DBN
 - (d) antenna gain: 15 dBiC
 - (e) antenna beamwidth: 34°
 - (f) lowest receiver noise temperature: 4490 K
 - (2) Transmit (contingency)
 - (a) band: 447.50 MHz
 - (b) satellites accessed: all 3 Corner Satellite Constellation members
 - (c) emission designator: 16K88F1DBN
 - (d) maximum output power: 40 Watts
 - (e) antenna gain: 17.3 dBiC
 - (f) antenna beamwidth: 25°
 - (3) minimum elevation angle of antenna main beam: 0°
 - (4) range of azimuth angles: 360 °
 - (5) roof-mounted antenna