

GENERAL INFORMATION

1. Production Plans---Pursuant 2.983 (c)

Quantity production is planned.

2. Application References---Pursuant 2.1061

Reference is made to the following Motorola "Application References on file with the Commission:

None

3. Data Submittal Procedure:

Data is supplied in accordance with Part 2, Sub-part J of the Commission's rules.

Standards used on measurements supplied are: ETSI TBR41 and section 47CFR25.202.

4. Similar to "Currently Type Accepted Transmitter Type(s)"

IHDT6ND1, which uses the same basic transceiver as this unit.

5. Report of measurements pertaining to types of emission, frequency range, maximum output power and modulation techniques.

A. Types of emission

The pertinent emission designator for the mobile satellite phone is **41K7Q7W**, as explained in paragraph 6 of this exhibit.

Actual measurements of Occupied Bandwidth are shown in Exhibit 9B.

Spurious Emissions (Conducted and Radiated) are reported in Exhibits 9C, 9D (unique FCC requirements), 9H and 9J (European TBR41 standards).

B. Frequency Range

The frequency range of the equipment is in the band of 1616 MHz to 1626 MHz, in accordance with the Technical Basis for Regulation (TBR41) of Satellite Personal Communications Networks (S-PCN) for Mobile Earth Stations (MESS) in the 1.6/2.4 GHz bands.

Frequency Stability versus temperature and voltage measurements are shown in Exhibits 9E and 9F. This equipment uses Automatic Frequency Control (AFC) to lock within +/- 600 Hz of the received frequency from the Space Vehicle (SV). The mobile performs all frequency pre-correction for Doppler shifts. The system is designed to be tolerant of these frequency offsets.

C. Maximum Output Power:

Radio Frequency Output Power ranges from 0.1 to 0.6 Watts. The mobile maximum output power is achieved under closed loop control with the SV network. The mobile power will respond to commands from the SV network to change power levels as defined in the specifications.

RF Output Power Measurements are shown in Exhibit 9A.

D. Modulation Techniques

Modulation is DEQPSK (Differentially Encoded Quadrature Phase Shift Keying)

Exhibits 6C and 6D further discuss details of the modulating circuitry.

Exhibit 6F discusses digital modulation techniques.

6. Determination of Emission Designator for the portable satellite transceiver (per Part 2-Subpart C of the commission's rules)

A. Emission, modulation and transmission characteristics (per section 2.201)

a. First Symbol - Type of Modulation of the main carrier.

The main carrier is pulsed in a TDMA format, utilizing Differentially Encoded Quadrature Phase-Shift Keying (DEQPSK) techniques. This corresponds to symbol Q, associated with the carrier being "angle modulated during the period of the pulse."

b. Second Symbol - nature of signal(s) modulating the main carrier.

In-phase (I) and Quadrature (Q) modulating signals representing sampled, quantized voice or other audio information or data, modulates the main carrier.

This corresponds to symbol 7, derived from two channels “containing quantized or digital information” modulated in-phase and quadrature modulated.

c. Third Symbol - Type of information to be transmitted.

The information transmitted is a combination of data transmission (command data) and telephony (sample quantized voice or other audio signals).

This corresponds to W, defined as “combinations of above” which would be the combination of the symbol D, “Data transmission, telemetry, telecommand”, and symbol E, “Telephony (including sound broadcasting)”.

B. Bandwidths (per section 2.202)

Bandwidth is primarily determined by a 96 tap FIR filter used to filter I and Q channel modulating signals and is consistent with a necessary bandwidth specification of 41.667 kHz.

Converting this result, using the format indicated in paragraph 2.202(a), yields 41K7.

The resulting complete emission designator is then **41K7Q7W**.

DESCRIPTION

1. Transmitter Technical Characteristics - Pursuant 2.983(d)
 - A. RF Power Output: Variable range from 0.1 to 0.6 Watts (by control of satellite network via closed loop power control). The transmitter duty cycle allows for bursted transmission every 8.28 ms out of 90 ms, or 9.2%, at a rate of 50 kbps, or 25 k symbols/sec.
 - B. Frequency Range: 1616 MHz to 1626 MHz
 - C. Frequency Stability: +/- 0.00015 % (1.5 ppm)
 - D. Emissions: 41K7Q7W
 - E. D.C. Voltage into the Final RF Amplifier: 7.5 Volts DC, nominal
D.C. Current into the Final RF Amplifier: 0.404 Amps (time averaged current with a 9.2% duty cycle).

2. Transmitter Application

- A. Power Supply Available

The transmitter is normally operated by means of a 7.75 V nominal regulated DC voltage, boosted from the nominal 4.4 V DHFA supply voltage utilized by the transceiver. The supply range afforded by the DHFA is 4.2 - 4.6 V DC.

- B. Antenna Available

The transceiver is provided with a standard RF connection designed to interface with a 50 Ohm characteristic impedance. The radio transmitter is designed to be used with an external (permanent or magnetic mount), Right-Hand Circularly Polarized patch antenna. The antenna provides near hemispheric coverage, and omni-directional gain pattern.

- C. Maximum Transmit Channel Capacity

240 Channels