Type Acceptance Requirements

The information in this exhibit is in accordance with requirements for type acceptance as outlined in the FCC Rules and Regulations, CFR Part 2 Sections 2.983 - 2.999 and 47 CFR Part 24 Sections 24.52, 24.235 and 24.238.

Section 2.983: Application for Type Acceptance

(a) Name of Applicant: Motorola Inc., Motorola is also the manufacturer of the equipment described herein.

(b) Identification of Equipment: IHDT6YH1

(c) Quantity Production: Quantity production is planned.

(d) Technical Description:

The transmit and receive equipment (FCC ID: IHDT6YH1) for which type acceptance is desired, is intended for use as a mobile station cellular transceiver in the broadband US PCS frequency region and is designed in compliance with the FCC Rules and Regulations Parts 2 and 24.

(1) Types of Emissions: Designator **250KGXW**

The mobile station transceiver transmits a Gaussian Minimal Shift Keying (GMSK) modulated carrier having a BT product of 0.3. The bandwidth of a GMSK modulated carrier having a BT of 0.3 is 250 kHz (see EXHIBIT 2). This results in **250K** for the first four characters of the emissions designator.

GMSK is the same as Minimal Shift Keying (MSK) except that the NRZ data has been filtered prior to modulation. As a result, GMSK, like MSK can generally be thought of as frequency shift keying (FSK), or Offset Quadrature Phase Shift Keying (OQPSK), and can be modulated and demodulated using either of these techniques. Motorola's mobile station transceiver is based off of the OQPSK technique, which is a type of phase modulation. This corresponds to **G**, for Types of Modulation.

The mobile station transceiver uses a digital signal representing sampled, quantized voice or other audio information or command data to modulate the main carrier in a Time Division Multiple Access (TDMA) fashion. This corresponds to **X** for nature of modulating signals. The symbol 1 excludes time-division multiplex, and the other choices for digital modulating signals either state "Two or more channels containing quantized or digital information" or "Composite system with one or more channels containing quantized or digital information, together with one or more channels containing analogue information.

The information transmitted is a combination of command data and telephony (sampled quantized voice or other audio signals). This corresponds to **W** for Types of Information Transmitted, defined as "Combination of above" which would be the combination of symbol D, "Data transmission, telemetry, telecommand", and symbol E, "Telephony (including sound braodcasting)".

(2) Frequency Range

This equipment is designed to transmit from 1850-1910 MHz. This frequency range corresponds to Blocks A, D, B, E, F and C of the US PCS frequency band.

(3) Range of Operating Powers

The transmitter output power range is +0 dBm to +30 dBm. This range of output power is controlled to sixteen discrete levels in increments of 2 dBm. This is a dynamic adjustment carried out under the command and supervision of the cellular base station and is used to control the uplink power from the mobile within a cell as the position of the mobile changes. Transmit power tuning adjustments are made at all sixteen levels: Refer to EXHIBIT 7.

(4) Maximum Power Rating (Sec. 24.232)

In no case may the peak output power of a mobile station transmitter exceed 32 dBm.

(5) Applied Voltage and Currents into the Final Amplifying Device: Refer to EXHIBIT 6.

(6) Function of Active Devices: Refer to EXHIBIT 5.

(7) Complete Circuit Diagrams: Refer to EXHIBIT 4.

(8) Instruction Manual: Refer to EXHIBIT 15.

Because the mobile station transceiver is based on the design of a European GSM model, and, more specifically, the user functionality and features are nearly identical to this GSM model. The user instruction manual that is included in this submission is a copy of the GSM manual and should be viewed as a preliminary version user manual in state very near that of the final version intended to ship with the equipment. If necessary, when available, the final version can be provided upon request.

(9) Tune-Up Procedure

Several adjustments are performed on the transmitter at a radio level before the mobile station transceiver is fully operational. Refer to EXHIBIT 12.

(10) Means for Stabilizing Frequency:
Refer to EXHIBIT 3.

(11) Means for Suppressing Spurious Radiation

Spurious and harmonic suppression is achieved through multiple means.

1. Radio Architecture:

a. Proper selection of local oscillator frequencies and intermediate frequencies (IF) to minimize spurious products.

b. Minimization of broadband noise both in-band and out-of-band through the combination of gain/noise figure architecture in the transmitter exciter stages and proper control of the transmitter's gain.

2. Physical Construction and Circuit Design Techniques:

a. Sources of spurious radiation such as frequency source circuitry and high gain circuitry within the equipment are assembled under grounded conductive cans on the circuit boards forming a localized shielded enclosure within the unit.

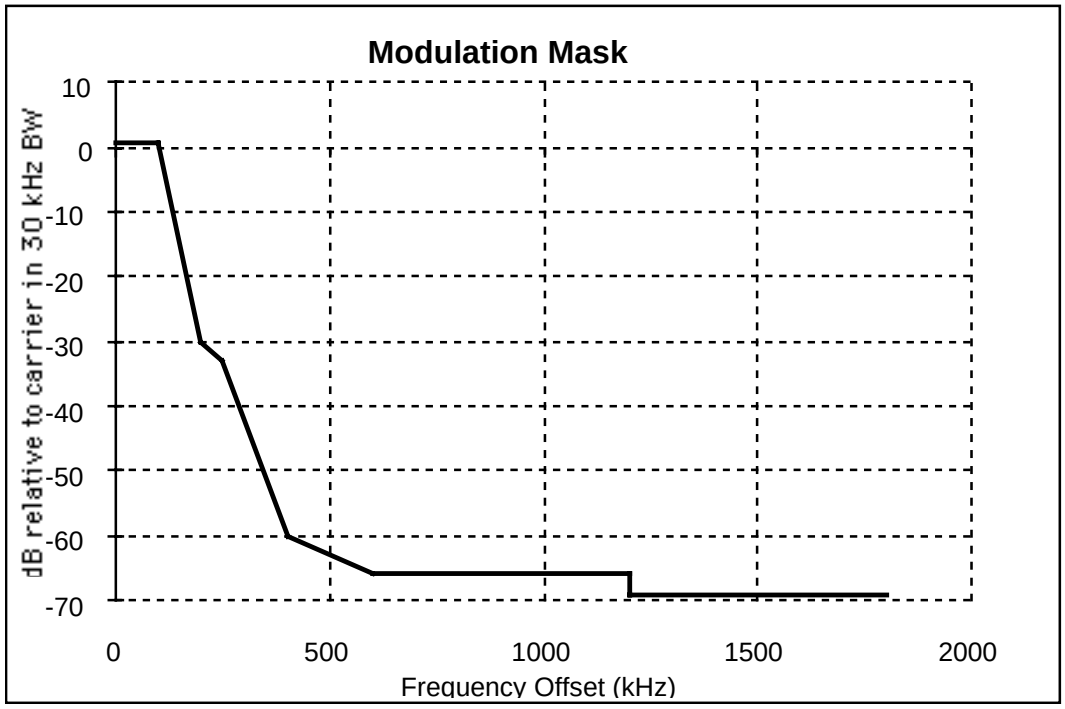
b. Physical separation of frequency sources from high gain circuitry.

c . Multilayer PC boards allow use of stripline for routing signals.

(12) Means for Limiting Modulation

The carrier is modulated with Gaussian Minimal Shift Keying (GMSK) having a BT product of 0.3. By definition, the peak frequency deviation of GMSK is one-fourth of the bit rate, or 270.833/4 = 67.7083 kHz. There is a theoretical phase trajectory that any given bit stream should ideally follow over the period of one time slot. However, imperfections in the modulation process can introduce errors which produce variations from the ideal trajectory. By design, the transmitter will follow the ideal trajectory to within 5 degrees RMS and 20 degrees peak phase error. The modulation imperfections can lead to a spreading of the occupied spectrum. However, the mask shown below is met under all specified conditions of

temperature, humidity, voltage, and frequency. The mask shown applies to a mobile station with an output power of +30 dBm.



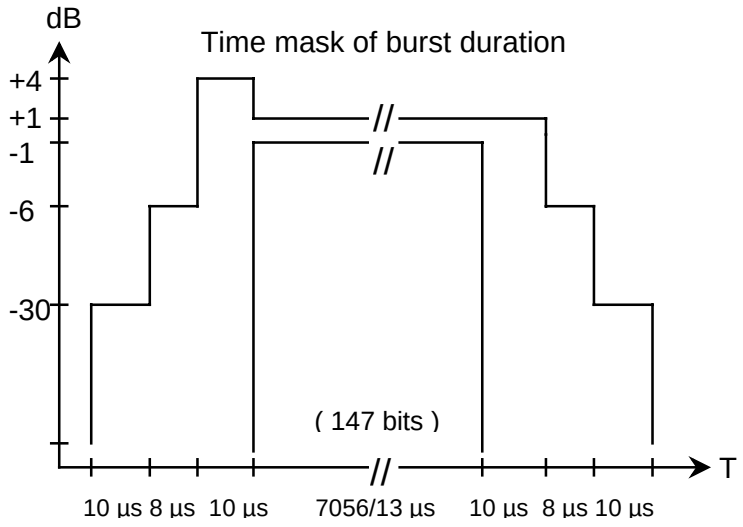
To ensure a high degree of modulation accuracy and compliance with the modulation spectral mask the modulation is imparted on the carrier through the use of direct digital synthesis techniques (Refer to EXHIBIT 2).

(13) Means for Limiting Power

The transmitter is capable of independently setting the output power burst for its designated timeslot out of the 8 timeslots within a TDMA frame. This is accomplished by adjusting the transmitter gain through a discrete time power control loop and ramping the transmitter's output power on and off at the beginning and end of each timeslot, respectively. A microprocessor in this power control loop monitors the transmitter's output power and adjusts it accordingly to keep it within the specified tolerance of the power level

that the mobile station has been ordered to operate at by the base site.

Following is the time mask specifying the ramp up, ramp down and duration of the power output of the transmitter during the burst.



(14) Detailed Description of Modulation System

Refer to EXHIBIT 2.

(e) Data Required by 2.985-2.997 Inclusive

Section 2.985: Measurements Required: RF Power Output
Refer to EXHIBIT 7.

Section 2.987: Measurements Required: Modulation Characteristics

Part 24 of the FCC Rules and Regulations contains no specific requirements pertaining to modulation characteristics. For a detailed description of GMSK modulation refer to EXHIBIT 2.

Section 2.989: Measurements Required: Occupied Bandwidth Refer to EXHIBIT 9.

Section 2.991: Measurements Required: Conducted Spurious Emissions Refer to EXHIBIT 10.

Section 2.993: Measurements Required: Radiated Spurious Emissions Refer to EXHIBIT 8.

Section 2.993: Measurements Required: Frequency Stability
Refer to EXHIBIT 11.

(f) FCC Labeling Requirements:
Refer to EXHIBIT 13.

(g) Equipment Photographs:
Refer to EXHIBIT 14.