

Exhibit 2 – General Information

Motorola Head-end Transceiver (HUB)

FCC ID: MIJTELHUB-USB-01

Telaxis Model No. ST4-31-UB1H-R1-E

2.0 General Information

2.1 *Production Plans*

Quantity production is planned.

2.2 *Application References*

Pursuant 2.1061 reference is made to the following Motorola Application References on file with the Commission:

None

2.3 *Data Submittal Procedure*

Data is supplied in accordance with Part 2, Sub-part J of the Commission's rules. The standards used on measurements supplied is section 47 CFR Part 101 Subpart C.

2.4 *Similar Applications*

MIJTELHUB-USA-001

2.5 *Types of Emissions*

The HUB transmits two signals. A Data signal and a Pilot tone. The Pilot tone is used to phase lock the local oscillator of the CPE to the HUB 100 MHz internal crystal oscillator.

The pertinent emission designator for the HUB Pilot Signal is 2M28F1D, as explained in paragraph 3.1.4 of Exhibit 3. Actual measurements of Occupied Bandwidth are shown in Exhibit 9.

The HUB itself does not modulate the Data signal. Modulation necessary to support the LMDS link is performed by equipment external to the HUB. An emission designator has been determined based on a standard Data Over Cable Service Interface Specifications (DOCSIS) signal that will be present at the input to the HUB.

The pertinent emission designator for the HUB Data Signal is 5M85D1D, as explained in paragraph 3.1.4 of Exhibit 3. Actual measurements of Occupied Bandwidth are shown in Exhibit 9.

Spurious Emissions (Radiated) are also reported in Exhibit 9.

2.6 Frequency Range

The HUB employs two frequencies in the 31.000 to 31.075 GHz frequency band. The HUB Pilot frequency is 31.0015 GHz and the HUB data frequency is 31.048 GHz.

Frequency stability versus temperature and voltage measurements are shown in Exhibit 9.

2.7 Maximum Output Power

The specified output power for the HUB Data transmitter is +24 dBm. The specified output power for the HUB Pilot transmitter is +16 dBm \pm 1 dB.

RF Output Power Measurements are shown in Exhibit 9.

2.8 Modulation Techniques

The HUB Data modulation is as follows:

- 64 QAM
- 5 Megasymbols/sec

The HUB Pilot modulation is as follows:

- FM 2.28 MHz deviation
- 24.414 kHz modulation frequency

Exhibit 6, Sections 6.3 and 6.5 will provide more details of the modulating circuitry and techniques.

2.9 Emission Designator

2.9.1 Emission, Modulation and Transmission Characteristics

The HUB itself uses no Data modulation techniques. Modulation necessary to support the LMDS link is performed by the equipment external to the CPE. However, based on the DOCIS signal, the Data signal emission designator (5M85D1D) is based on the following:

- D - Emissions in which the main carrier is amplitude and angle-modulated either simultaneously or in a pre-established sequence
- 1 - A single channel containing quantized or digital information without the use of a modulating subcarrier, excluding time division multiplex
- D - Data transmission, telemetry, telecommand

The Pilot tone is FM modulated by the HUB's internal 100 MHz crystal oscillator divided down to 24.414 kHz. The Pilot signal emission designator (2M28F1D) is based on the following:

- F - Emissions in which the main carrier is amplitude and angle-modulated – frequency modulated
- 1 - A single channel containing quantized or digital information without the use of a modulating subcarrier, excluding time division multiplex
- D - Data transmission, telemetry, telecommand

2.9.2 Bandwidth

The allocated bandwidth for the frequency band in which the HUB operates (31.000 to 31.075 GHz) is 75 MHz.