

Federal Communications Commission
Experimental Radio Service
PO Box 358320
Pittsburgh, PA 15251 - 5320

April 16, 2004

To Whom It May Concern:

I am an employee of Honda R&D Americas in Raymond, Ohio. Advances in technology have enabled Honda to integrate various communication capabilities to automotive electronic systems that require performance evaluation to determine their applicability to mass production. Receiving antenna's are of particular interest to my department, for we have found that automobile body design directly effects antenna tuning performance. This in turn requires evaluation and improvements to antenna performance to meet specific requirements of Honda R&D Americas. Therefore I would like to request an Experimental Broadcast License for a duration of 2 years.

EXHIBIT 1

FORM 442 QUESTION 7: Experimentation Description

1.) Operations Conducted

The purpose of the experimentation as requested in this form is to evaluate the reception characteristics of vehicle mounted antennas in the following frequency area's:

FM (87.7 – 107.9 MHz)

TV (55.25 – 83.25 MHz, 175.25 – 885.25 MHz)

AMPS (806 – 902 MHz)

PCS (1850 – 1990 MHz)

SDARS (2320 – 2345 MHz)

Please refer to Exhibit 4 for specific frequencies.

A. FM (87.7 – 107.9 MHz)

An Anritsu MG3641 Signal generator will be utilized to transmit a 13 dBm signal (20mW) in the frequencies specified by Table 1 of Exhibit 4. This Signal will be broadcast through an Advantest TR1711 Log Antenna. The required testing would include horizontal, vertical, and right slant (45 °) polarization angles, transmitting carrier wave signal only. All FM band signals are transmitted at 0 degrees from horizontal plane.

B. TV (55.25 – 83.25 MHz, 175.25 – 885.25 MHz)

An Anritsu MG3641 Signal generator will be utilized to transmit a 13 dBm signal (20mW) in the frequencies specified by Table 2 of Exhibit 4. This Signal will be broadcast through an Advantest TR1711 Log Antenna. The required testing would require only horizontal polarization angle, transmitting carrier wave signal only. All TV band signals are transmitted at 0 degrees from horizontal plane.

C. AMPS (806 – 902 MHz)

An Anritsu MS4661A Network Analyzer will be utilized to transmit a 23 dBm signal in each bandwidth as specified by Table 3 (AMPS), and Table 4 (PCS) in Exhibit 4. This signal will travel approximately 160 meters via coaxial cable (est. 32dB Max loss) and will be amplified by an Agilent 83006A +18dB amplifier. After amplification the signal will be sent through a power divider and transmitted through an applicable set of transmitting antennas. The AMPS band signals will be transmitted through a pair of Kathrein AP16-850/065 antennas, while the PCS band signals will be transmitted through a pair of Kathrein AP22-1850/033D antennas. All AMPS band signals are transmitted at 0 degrees from horizontal plane.

D. SDARS (2320 – 2345 MHz) PCS (1850 – 1990 MHz)

An Agilent 8753 ES Network Analyzer will be utilized to transmit a 13 dBm signal in each bandwidth as specified by Table 4 (SDARS). This signal will travel approximately 30 meters via coaxial cable (est. 15dB Max loss) and will not be amplified before transmission. The transmit antenna will be a Seavey Engineering Associates AS24-15D /S dish antenna with a rated gain of 15.9db @1.5GHz, 18.6 dB @ 2.0GHz, and 19.5 dB @ 2.5 GHz. PCS Transmit Angles = 0 thru -15 degrees from horizontal Plane. SDARS Transmit angles = 0 thru -60 degrees from horizontal plane.

2.) Equipment List:

- 1 Anritsu MG 3641 Signal Generator
- 1 Anritsu MS 4661A Network Analyzer
- 1 Agilent Technologies 83006A 18 dB Amplifier 0 – 26 GHz
- 1 Agilent Technologies 8753 ES S Parameter Network Analyzer
- 1 Advantest TR1711 Log Antenna
- 2 Kathrein AP16-850/065 65 ° Panel Antenna's
- 2 Kathrein AP22-1850/033D 33 ° Panel Antenna's
- 1 Seavey Engineering Associates AS24-15D /S

3.) Type of Emission (ALL Frequencies)

NON – Unmodulated Carrier Wave

Polarization Angles: Horizontal, Vertical, 45°Right Slant as specified in Section 1.

4.) Antenna Height.

FM – 2 Meters

TV – 2 Meters

AMPS – PCS – 4 Meters

SDARS – 2 to 5 Meters on a Rotating Boom (See Exhibit 5)

Stored Maximum Height 3 Meters.

5.) Frequencies & Equipment List

Please refer to Exhibit 4 Tables 1 – 4.

6.) Location of Operation.

Transportation Research Center
10820 State Route 347
Raymond, Ohio 43319 – 0367
937 – 666 - 0211

NAD 83
Latitude: 40 ° 17' 58.8"
Longitude: 083 ° 32' 58.5"
Elevation: 1130 ft. Above sea level

7.) Responsible for Operation

Honda R&D Americas, Inc.
Kevin Longbrake
21001 State Route 739
Raymond, Ohio 43067 – 9705
937 – 645 – 1928

8.) Class of Station.

Fixed / Base Station.

9.) Test Site Layout.

Please Refer to Exhibit 2, 3, & 5 for Drawings of Antenna Test Site and Facilities.

If you require further information please feel free to contact me at 937 – 645 – 1928.

Thank you,
Kevin Longbrake
Electrical Vehicle Research
Honda R&D Americas, Inc.