APPLICATION FOR EQUIPMENT CERTIFICATION

FCC FORM 731

AND

SUPPORTING DOCUMENTATION

SUBMITTED TO:

FEDERAL COMMUNICATIONS COMMISSION
EQUIPMENT APPROVAL SERVICES
POST OFFICE BOX 358318
PITTSBURGH, PA 15251-5315

FOR:

ROHDE & SCHWARZ

SV7000 SERIES TRANSMITTER FAMILY

(SELECT MODELS)

25 July 2007

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SV7000 series Transmitter FCC Certification Application

Summary of Application for Certification of Equipment

As stated in the cover letter, Rohde & Schwarz, Inc. is hereby applying for Equipment Certification for select models of the SV7000 family of UHF solid state transmitters. This is to permit licensed operation of those select models pursuant to 47CFR§27.51. To that end we are electronically submitting an Application for Equipment Authorization, FCC form 731 as specified by 47CFR§27.1033, Application for Certification. Along with that form we are including as Exhibits the requisite documentation, including reports of various measurements conducted in accordance with 47CFR§2, that demonstrate compliance with the pertinent sections of 47CFR§27 and 47CFR§2. In addition we are requesting that Certification be extended to four lower-powered transmitter models in this family. They differ only in the number of final power amplifiers units utilized (VH620A2) and in the configuration of the passive output power combiner system.

It can also be noted that the SV7000 series of transmitters utilize the same SV700 exciter as the NV7000 series transmitter already Certified under FCC ID: HFLNV7930. The VH620A2 power amplifiers, while not identical to the VH602A2 power amplifiers utilized in the NV7000 series transmitters, does employ the same transistor devices and very similar RF circuitry “layout” techniques.

47CFR§2.1033(c) APPLICATION FOR CERTIFICATION INFORMATION

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FCC Identifier:

Please refer to Exhibit E of this Application, ID Labels and Placement, for examples of the FCC ID labels and the manufacturer’s information labels for the SV7000 family of transmitters.

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Commissioning and Operating Manual:

Exhibit L of this Application is a copy of the NV7600 Commissioning and Operating Manual. Chapter 5 of that Exhibit contains complete, detailed instructions to guide the end user through receiving the unit up to completing its installation. Chapters 6 and 7 cover the commissioning and start-up of the transmitter and include instructions on making all necessary adjustments and calibrations to that end. Virtually all of the information presented is applicable to all of the transmitter models in the SV7000 family.

Exhibit J is the Commissioning and Operating Manual for the optional NetCCU 700. While not a required part of the transmitter, the SV7600 unit tested for this application included this unit so the manual is provided for reference.

Type or Types of Emission:

6M00W7W for this application.

Please refer to Exhibit S, MediaFLO Modulation Overview for a discussion of the modulation methodology employed.

Frequency Range:

470-mHz to 860-mHz

Please refer to Exhibit D, SV7000 Transmitter Family General Specifications,
for a complete listing of specifications for all models in the SV7000 transmitter family covered by this Application.

Range of Operating Power Values or Specific Operating Power Levels:

The various transmitters covered under this application and their rated power output levels are shown in Exhibit D, SV7000 Transmitter Family General Specifications. The output power level of any transmitter in the family can be reduced to any reasonable level (100% to approximately 20% of rated output power) that may be required for a give installation during commissioning process. (Widely varying the output power level during operation is not considered to be a routine occurrence.) Please see Exhibit K, SV7600 Commissioning and Operating Manual for detailed instructions on adjusting the transmitter's output power and adjusting the calibration of the output power display.

Maximum Power Rating:

Please refer to Exhibit D, SV7000 Family General Specifications, for the power rating for each transmitter.

Final Stage DC Voltage and Currents:

VH620A2 UHF Power Amplifier

LDMOS transistors, 4 devices (1-transistor pair per device on common sub strate) for a total of 8 transistors per amplifier unit.

Final stage DC operating parameters are:
E = 32-volts, DC,
I ≈ 3 amperes/transistor, 6 amperes/pair, 18-amperes/amplifier unit.
Total power output is ≈120-watts with OFDM/MediaFLO modulation waveform.

There are six VH620A2 amplifier units passively combined to make up the output section of the SV7600 transmitter.

Tune-Up Procedure:

As the transmitters in the SV7000 family are broadband in design there is no tune-up procedure, per se. Exhibit A, Parts List and Tune Up Procedure, gives a brief outline of the commissioning process needed to prepare a transmitter for operation. Commissioning and adjustment are further described in intimate detail in Exhibit K, NV7600 Commissioning and Operating Manual.

Schematic Diagrams, Circuitry Descriptions for Frequency Stability, Suppression of Spurious Emissions, Modulation Limiting and Power Limiting:.

The operating circuitry of the transmitter is described briefly in Exhibit B, Operational Description. Much greater detail can be found throughout Exhibit L, SV7600 Commissioning and Operating Manual. Block diagrams of the exciter and transmitter are available in Exhibit C, SV7600 Block Diagrams. AC power wiring diagrams are also part of Exhibit C. Detailed schematic diagrams, parts lists photographs and circuit card layouts can be found in Exhibits H through R and Exhibit T.

Spurious emissions are limited by both the clean exciter design with its equalization/ precorrector circuitry, by a harmonic filter after the final passive combiner and by a sharply tuned channel “mask” filter at the output terminal of each transmitter. That “mask” filter is supplied by a third party and its specifications and performance characteristics are described in detail in Exhibit T, Spinner BN 616450 Channel (“Mask”) Filter Specifications.

Equipment Identification Plate Photo:

Refer to Exhibit E, ID Labels and Placement, for a photograph of a typical SV7000 transmitter's manufacturer's ID label as well as the same information for the proposed FCC ID label.

Photographs of Transmitter Equipment:

Photographs of the exterior and interior of the transmitter may be found in: Exhibit K, SV7600 Commissioning and Operating Manual. In addition, Exhibit M, Exciter Printed Circuit Board Photos, shows photographs of all of the circuit cards used in the exciter. Exhibit P, VH520A2 Printed Circuit Board Photos, shows the same for the power amplifier. Exhibit R, NetCCU 700 Chassis Photo shows the interior of that unit. In addition numerous photos are available thought out the manuals that are part of this Application.

Details of Digital Modulation Technique:

Refer to Exhibit S, MediaFLO Modulation Overview for a description of the modulation methodology.

Data Required by §§2.1046 Through §§2.1057 Inclusive, Measured in Accordance with §2.1041:

Exhibits F, G and H demonstrate the transmitters' compliance with the pertinent requirements. Exhibit G shows compliance with §2.1046 and §27.54 for the temperature stability requirement. Exhibit F, Siemens Center for Quality Engineering Test Report VOA70004, demonstrates compliance with all required criteria from Part 2 as well as §27.53, Emissions Limits.