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

NV7000 SERIES TRANSMITTER FAMILY

(SELECT MODELS)

7 AUGUST 2006

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Exhibit	*Description*	*Confidentiality Requested*
	Cover Letter	No
	Table of Contents and Application Overview	No
	Certification of Data	No
	Request for Confidentiality	No
A	Parts List and Tune Up Procedure	No
B	Operational Description	No
C	Block Diagrams	Yes
D	NV7000 Transmitter Family General Specifications	No
E	ID Labels and Location Description	No
F	Siemens Laboratory Report	No
G	NV700 Exciter Temperature Stability Test Report	No
H	Rohde & Schwarz Factory Test Report	No
J	NetCCU 700 Manual	Yes
K	NV7930 Installation and Commissioning Manual (10 Parts)	Yes
L	NV7930 DMQ-T Operating Manual (Preliminary) (3 Parts)	Yes
M	NV7930 DMQ-T Service Manual, Volume 1 (5 Parts)	Yes
N	NV7930 DMQ-T Service Manual, Volume 2 (3 Parts)	Yes
P	Exciter Printed Circuit Board Photos	Yes
R	Transmitter Printed Circuit Board Photos (includes photo of NetCCU 700 Chassis)	Yes
S	Qualcomm MediaFLO Modulation Overview	Yes
T	Qualcomm Source Control Document for Channel (“Mask”) Filter	Yes

NV7000 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 NV7000 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.

47CFR§2.1033(c) APPLICATION FOR CERTIFICATION INFORMATION

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Broadcasting Division
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München
Federal Republic of Germany

FCC Identifier:

Please refer to Exhibit E of this Application, FCC ID Label and Placement, for examples of the FCC ID labels and the manufacturer's information labels for the NV7000 family of transmitters. Note that not all output power levels of the NV7000 family are considered in this Application for Certification. Therefore we have elected to request a separate FCC ID number for each of the individual model numbers (power levels) that are included.

Installation and Commissioning Manual:
Operating Manual:

Exhibit L is a copy of the NV7930 Installation and Commissioning Manual. This manual contains complete, detailed instructions to guide the end user from receiving the unit up to the point of turn-on, including instructions on making all necessary adjustment and calibration procedures to that end. Virtually all of the information presented is applicable to all

transmitters in the NV7000 family. The manual does cover additional steps required for commissioning of the three cabinet models that are not required for the smaller units but those differences are readily apparent.

Exhibit M is the NV7930 Operating Manual. It includes quite detailed information for the configuration and operation of the transmitter. Where appropriate, the information is duplicated from NV7930 Installation and Commissioning Manual.

Exhibit K is the Commissioning and Operating Manual for the optional NetCCU 700. While not a required part of the transmitter, the NV7930 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, NV7000 Transmitter Family General Specifications, for a complete listing of specifications for all models in the NV7000 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, NV7000 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%) that may be required during installation. (Widely varying output power during operation is not considered to be a routine occurrence.) Please see Exhibit K, NV7930 Installation and Commissioning Manual, Chapter 4, page 29 (3.2.1.3) and Exhibit L, NV7930 Operating Manual, Chapter 5, page 48 (1.7) for instructions on making the adjustment.

Maximum Power Rating:

Refer to Exhibit D, NV7000 Family General Specifications, for the power rating for each transmitter.

Final Stage DC Voltage and Currents:

VH602A2 UHF Power Amplifier Module

LDMOS transistors, 8-pairs for a total of 16 devices per amplifier module.

Final stage DC operation parameters are:
E = 32-volts, DC,
I ≈ 3.3 amperes/transistor, 6.6 amperes/pair, 53-amperes/module.
Total power output is 440-watts with OFDM/MediaFLO modulation waveform.

Tune-Up Procedure:

As the transmitters in the NV7000 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, NV7930 Installation and Commissioning Manual, Chapter 4.

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, NV7930 Operating Manual and, to a lesser degree Exhibit K, NV7930 Installation and Commissioning Manual. Block diagrams of the exciter and transmitter are available in Exhibit C, NV7930 Block Diagrams. Detailed schematic diagrams, parts lists and circuit card layouts can be found in Exhibit M, NV7930 Service Manual, Volume 1 and Exhibit N, NV7930 Service Manual, Volume 2.

Spurious emissions are limited by both the clean exciter design with its equalization/ precorrector 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 are described in detail in Exhibit T, Qualcomm Source Control Document for Channel Mask Filter.

Equipment Identification Plate Photo:

Refer to Exhibit E, FCC ID Label and Placement, for a photograph of a typical NV7000 transmitter’s manufacturer’s ID label as well as the same information for the FCC ID label.

Photographs of Transmitter Equipment:

Photographs of the exterior and interior of the transmitter may be found in: Exhibit K, NV7930 Installation and Commissioning Manual and in NV7930 Operating Manual. Note that the first rack (on the left when viewed from the front) is common to all models. In addition, Exhibit R, Exciter Printed Circuit Board Photos, shows photographs of all of the circuit cards used in the exciter. Exhibit S, Transmitter Printed Circuit Board Photos, shows the same for the remaining portions of the transmitter. In addition Exhibit M, NV7930 Service Manual, Volume 1; and Exhibit N, Volume 2 contain drawings of the placement of components on the various circuit boards.

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 H, Rohde & Schwarz Factory Acceptance Test, shows results for the requirement of §2.1046 for RF Power Output. Exhibit F, Siemens Center for Quality Engineering Test Report U0TG0004, demonstrates compliance with all other required criteria from Part 2 as well as §27.53, Emissions Limits.