

LIST OF EXHIBITS

FOR TYPE ACCEPTANCE OF XDD-350C METEOROLOGICAL RADAR

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Baron
Services

April 28, 1999

Federal Communications Commission
EQUIPMENT APPROVAL SERVICES
P.O. Box 358315
Pittsburgh, PA 15251-5315

Subject: Request for Type Acceptance

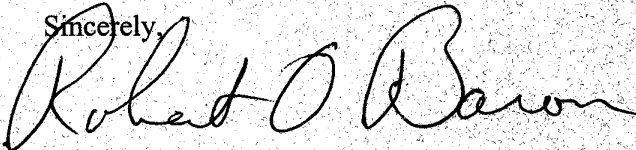
Gentlemen:

Baron Services Inc., supplier of Meteorological Radars and associated software is requesting type acceptance for a C-band Doppler Weather Radar transmitter utilizing a solid state modulator using low voltage IGBT switches and pulse transformers to drive a coaxial magnetron. The designation of this system will be XDD-350C and will be manufactured and marketed by BARON Services.

Exhibits A through L are attached supporting the subject application. All required testing was performed by Mr. Ted Simmons of Baron Services and Mr. Randy Bell, owner of Bell Engineering. Mr. Bell was hired as a consultant for the purpose of witnessing and verifying the test results. Mr. Bell's credentials are attached for reference.

If you require any further information, please give me a call.

Sincerely,



Robert O. Baron
President

Enclosures

BELL ENGINEERING

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Randy Bell

EXPERIENCE

Bell Engineering, Fort Walton Beach, FL (1985 - Present) - Designed military and commercial RF/Microwave products for various clients. These include:

Wayne Dalton, Inc. - Designed low cost UHF receiver and transmitter for a garage door remote control.

Precision Control Design, Inc. - Designed a low cost VHF biomedical telemetry receiver.

PCOM - Designed 5.7 - 5.9 GHz transceiver for use in unlicensed ISM band. Transmitter had output power of 1 watt and receiver had noise figure < 1 dB.

SmartSAT Engineering - Designed tri-band up/down converters covering the C, X and Ku communication bands and the Sampling Phase Detector section of a high performance 4 - 8 GHz Frequency Synthesizer.

Metric Systems Corp. - Designed various airborne military data links. This included a 1.8 GHz coherent transponder, 10 GHz receiver and a 1.4 GHz MSK transceiver. Circuits designed included: 30 watt power amplifier, frequency synthesizer, MSK modulator, FSK/PM modulator, PLL demodulator, GaAs FET low noise amplifier, PIN Switch, high power limiter, high sensitivity X-band detector. All circuits were designed to operate over the -54° to +75°C temperature range and met airborne shock and vibration requirements.

Ian - Conrad Bergan, Inc. - Performed study to determine feasibility of building 10 GHz FM-CW radar. Built prototype 10 GHz FM-CW radar and developed a technique for compensation of nonlinear VCO tuning characteristics.

International Systems and Software, Inc. - Designed a low cost synthesized PSK receiver for use in the reception of High Resolution Picture Transmission data from the TIROS-N series of meteorological satellites. This receiver was designed to acquire, track and demodulate a high data rate signal with a large Doppler shift.

StarTech Innovations, Inc. - Designed the transmitter section of a VHF (138-250 MHz) wireless microphone system. This design meets both FCC and European telecommunication standards.

MicroSystems, Inc. - Designed a Drone Target and Control System transponder. This system operated from 5.4 - 5.9 GHz with a power output of 15 watts. Microwave/RF circuits designed included an LNA, mixer, power amplifier, dielectric resonator oscillator, PIN diode antenna switch and pulse modulator, AGC attenuator, log IF amplifier, and tunable band pass filter.

Vitro Services, Fort Walton Beach, FL (1984 -1985) - Designed RF circuitry of an IF monopulse radar processor.

General Electric, Lynchburg, VA (1983 - 1984) - Redesigned the receiver and exciter section of an existing cellular radio base station to operate in the GE proposed Personal Radio Communications Service Band (900- 950 MHz).

Gardiner Communications, Garland, TX (1982 - 1983) - Responsible for the design of components in a 3.7-4.2 GHz satellite receiver and a CATV RF modulator (54-300 MHz). Circuits designed include a synthesized local oscillator (600-900 MHz), microstrip bandpass filters, power divider and directional coupler, a subharmonic mixer and numerous LC type VHF and UHF filters.

GTE Corp., Huntsville, AL (1982) - Designed a low cost 49 MHz FM transmitter for use in a cordless telephone.

RCA, Meadowlands, PA (1981) - Designed a VHF temperature compensated crystal oscillator and circuitry for phase locking the visual and aural exciters of a VHF television transmitter.

Sperry Univac Inc., Salt Lake City, UT (1980-1981) - Designed RF and microwave components for a Spread Spectrum data link. Assignments included the design of a wideband UHF power amplifier, VHF IF amplifier strip with AGC, X and Ku band GaAs FET amplifiers, several X band filters and a multi-channel S band modulator. Extensive use was made of the Compact CAD program for circuit design and optimization.

Metric Systems Corp., Fort Walton Beach, FL (1978 - 1980) - Designed analog and digital circuits and did systems analysis on a multi-beam high power search radar, AN/MPS-T9.

Motorola Inc., Fort Lauderdale, FL (1977 -1978) - Responsible for the design of a low power VHF mixer/oscillator for a Paging Receiver and system test comparing the intermodulation distortion and paging sensitivity of old and new receivers.

Education

University of California, Los Angeles, CA (May 1981) - Attended short course: Microwave Circuit Design.

University of Florida, Gainesville, FL (1976 -1977) - Received Master of Engineering Degree in Electrical Engineering. Main areas of interest: Communications Theory, Digital Signal Processing and Applied Electronics. Grade point average: 3.92/4.0.

University of Florida, Gainesville, FL, (1974 - 1975) - Received Bachelor of Science Degree in Electrical Engineering. Graduated with honors with a grade point average of 3.49/4.0. Member Tau Beta Pi, Eta Kappa Nu and Phi Kappa Phi.

Pensacola Junior College, Pensacola, FL (1971 - 1973) - Received Associate of Science Degree in Electrical Engineering Technology.

Bell Engineering Facilities

Bell Engineering maintains a complete electronics development laboratory with test and measurement capabilities extending from DC to 22 GHz.

RF/MICROWAVE TEST EQUIPMENT

Tektronix Model 2247A Oscilloscope
Marconi Model 2031 Signal Generator
TBE Electronics Model 214 LC Meter
Marconi Model 6960A RF Power Meter
Eaton Model 2075/205 Noise Figure Meter
Hewlett-Packard Model 3478A Multimeter
Wiltron Model 6409 Scalar Network Analyzer
EIP Model 545 Microwave Frequency Counter
Farnell Model AMM2000 Automatic Modulation Meter
Hewlett-Packard Model 8660C Synthesized Signal Generator
Hewlett-Packard Model 71210C Microwave Spectrum Analyzer
Wandel and Goltermann Model TSA-1 Spectrum/Network Analyzer
Weinschel Engineering Model 4310A/KN Multiband Sweep Oscillator
Stanford Research Systems Synthesized Function Generator Model DS345

CAD/CAE SOFTWARE

Tesla - System Simulator
Word Pro - Word Processing
Vellum - Mechanical Design
Coda - Crystal Oscillator Design
CiAO - Matching Network Design
WaveCon - Microwave Filter Design
TxRx Designer - RF System Analysis
Spectra Plus - Audio Spectrum Analysis
Protel - Schematic and Printed Circuit Board Design
Acolade - Communications Link Analysis and Design
Touchstone - Linear RF/microwave Circuit Analysis and Optimization

