ROGERS
Labs, Inc.

4405 West 259TH Terrace • Louisburg, KS 66053 • PHONE & FAX: (913) 837-3214

CERTIFICATION APPLICATION

For

AlliedSignal, INC.
Electronic and Avionic Systems
23500 West 105th Street
Olathe, KS 66061

Dave Berneking,
Engineering Team Leader

MODEL: KY196B
P/N 064-01084-0101
FREQUENCY: 118.0-136.990 MHz

FCC ID: ASY KY196B

Test Date: January 23, 1999

Certifying Engineer: Scot D Rogers

Scot D. Rogers
ROGERS LABS, INC.
4405 West 259th Terrace
Louisburg, KS 66053
Phone: (913) 837-3214
FAX: (913) 837-3214

TABLE OF CONTENTS

FORWARD:

In accordance with the Federal Communications Code of Federal Regulations, dated October 1, 1997, Part 2 Subpart J, Paragraphs 2.907, 2.911, 2.913, 2.915, 2.925, 2.926, 2.1031 through 2.1057, Part 87, Subchapter D, Paragraphs 87.131 through 87.147, and FCC document FCC98-58, the following is submitted:

List of Test Equipment

A Hewlett Packard 8591EM and or 8562A Spectrum Analyzer was used as the measuring device for the emissions testing. The analyzer settings used are described in the following table. Refer to the Appendix for a complete list of Test Equipment.

HP 8591EM SPECTRUM ANALYZER SETTINGS		
CONDUCTED EMISSIONS:		
RBW	AVG. BW	DETECTOR FUNCTION
9 kHz	30 kHz	Peak/Quasi Peak
RADIATED EMISSIONS (30 - 1000 MHz):		
RBW	AVG. BW	DETECTOR FUNCTION
120 kHz	300 kHz	Peak/Quasi Peak
HP 8562A SPECTRUM ANALYZER SETTINGS		
RADIATED EMISSIONS (1 - 40 GHz):		
RBW	AVG. BW	DETECTOR FUNCTION
1 MHz	1 MHz	Peak/Average
ANTENNA CONDUCTED EMISSIONS:		
RBW	AVG. BW	DETECTOR FUNCTION
120 kHz	300 kHz	Peak

2.1033(c) Application for Certification

(1) Manufacturer: AlliedSignal, INC.
Electronic and Avionics Systems
23500 West 105th Street
Olathe, KS 66061

(2) Identification: Model: KY196B P/N 064-01084-0101
FCC I.D.: ASY KY196B

Refer to the attached Product Description Sheet.

(3) Instruction Book:

Draft Instruction Manual attached

(4) Emission Type: 6K00A3E, 6K00A9W

(5) Frequency Range: 118.0 - 136.990 MHz,
Adjustable in 8.33 or 25 kHz steps.

(6) Operating Power Level:

25 Watts

(7) Max P_o: 25 Watts

(8) Power into final amplifier: 165 Watts (27.5V @ 6A).

(9) Tune Up Procedure for Output Power:

Refer to Appendix for Transceiver Alignment Procedure.

(10) Circuit Diagrams; description of circuits, frequency stability, spurious suppression, and power and modulation limiting:

Refer to Appendix for Circuit Diagrams.
Refer to Appendix for Theory of Operation.

(11) Photograph or drawing of the Identification Plate:

Refer to Appendix for Photograph or Drawing.

(12) Drawings of Construction and Layout:

Refer to Appendix for Drawings of Components Layout and Chassis Drawings.

(13) Detail Description of Digital Modulation:

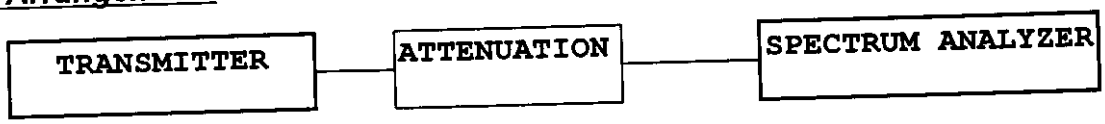
Refer to Appendix for Description of Digital Modulation.

2.1046 RF Power Output

Measurements Required:

Measurements shall be made to establish the radio frequency power delivered by the transmitter into the standard output termination. The power output shall be monitored and recorded and no adjustment shall be made to the transmitter after the test has begun, except as noted below:
If the power output is adjustable, measurements shall be made for the highest and lowest power levels.

Test Arrangement:



The radio frequency power output was measured at the antenna terminal by replacing the antenna with a spectrum analyzer, 40-dB attenuation and cable. The spectrum analyzer had an impedance of 50Ω to match the impedance of the standard antenna. A HP 8591EM Spectrum Analyzer was used to measure the radio frequency power at the antenna port. The data was taken in dBm and converted to watts as shown in the following Table. Refer to Figures 1 through 4 showing the output power of the transmitter. Data taken per Paragraph 2.1046(a) and applicable parts of Part 87.

P_{dBm} = power in dB above 1 milliwatt.
Milliwatts = $10^{(PdBm/10)}$
Watts = (Milliwatts)(0.001)(W/mW)

43.6 dBm = $10^{(43.6/10)}$
= 23,067 mW
= 23 Watts

Results:

FREQUENCY	P_{dBm}	P_{mW}	P_W
118.0	43.6	23,067	23
127.5	43.9	24,604	25
136.975	43.7	23,442	23
136.990	43.6	22,909	23

The specifications of Paragraph 2.1046(a) and applicable Parts of 87 are met. There are no deviations to the specifications.

MARKER
118.Ø25 MHz
3.63 dBm

ACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKR 118.Ø25 MHz
3.63 dBm

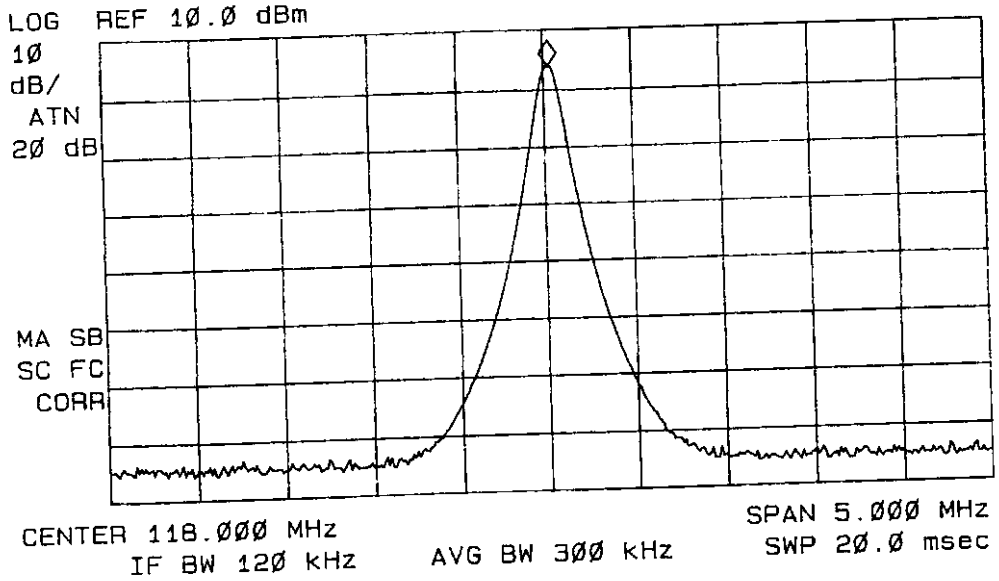


Figure 1: Power Output Channel 118.0

MARKER
127.525 MHz
3.91 dBm

ACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKR 127.525 MHz
3.91 dBm

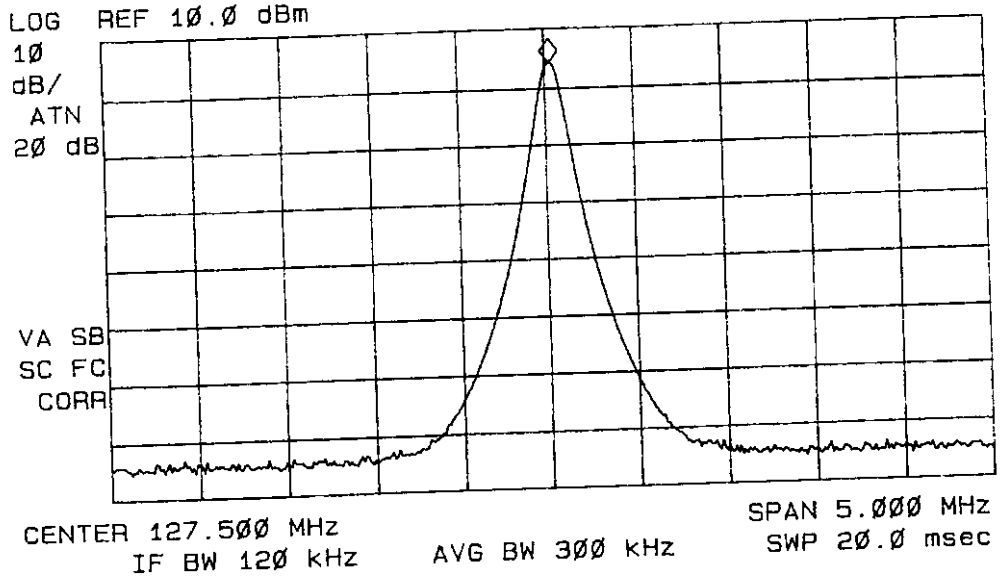


Figure 2: Power Output Channel 127.5

CENTER
136.975 MHz

ACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKR 137.ØØØ MHz
3.65 dBm

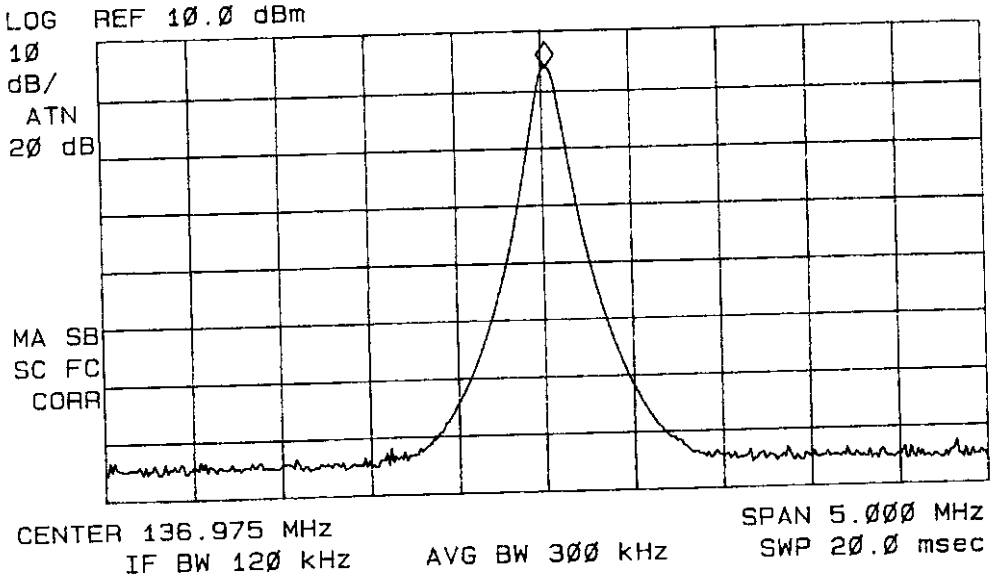


Figure 3: Power Output Channel 136.975

MARKER
137.Ø15 MHz
3.6Ø dBm

ACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKR 137.Ø15 MHz
3.6Ø dBm

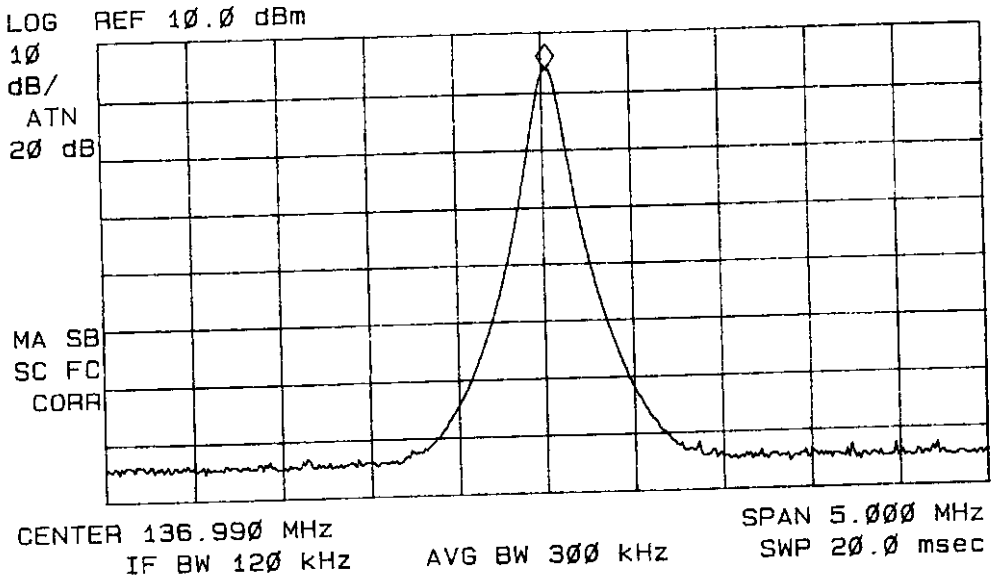


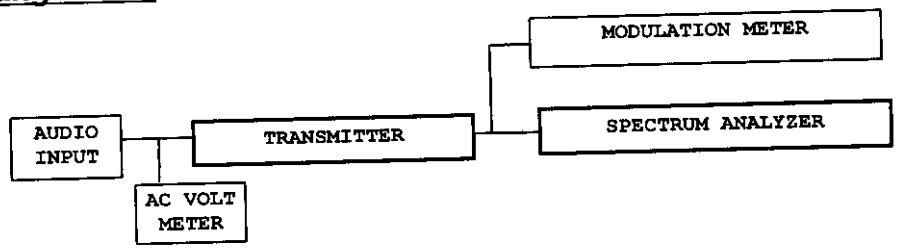
Figure 4: Power Output Channel 136.990

2.1047 Modulation Characteristics

Measurements Required:

A curve or equivalent data, which shows that the equipment will meet the modulation requirements of the rules, under which the equipment is to be licensed, shall be submitted.

Test Arrangement:



The radio frequency output was coupled to a HP Spectrum Analyzer and a modulation meter. The spectrum analyzer was used to observe the radio frequency spectrum with the transmitter operating in its various modes. The modulation meter was used to measure the percent modulation.

Results:

Figure 5 displays the graph made showing the audio frequency response of the modulator. The frequency generator was set to 1 kHz and injected into the audio input port of the EUT. The amplitude was adjusted to obtain 50% modulation at 1000 Hz. This level was then taken as the 0-dB reference. The frequency of the generator was then varied and the output level recorded while holding the input levels constant.

Audio Frequency (Hz)	Response normalized to 1000 Hz (dB)
100	-14.0
200	-7.0
500	-4.0
1000	0
2000	-1.0
3000	-40

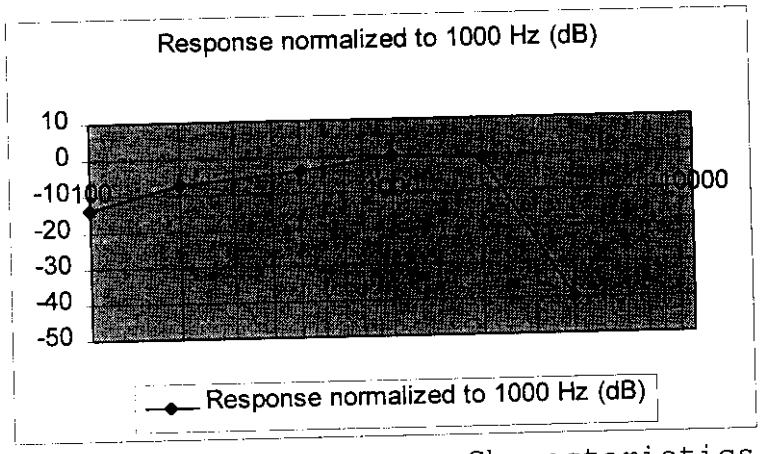


Figure 5: Audio Response Characteristics.

Figure 6 shows the modulation response for each of three tones while the input voltage was varied. The frequency is held constant the input voltage is varied and the modulation is read from the modulation meter. The specifications of Paragraph 2.987(b) and applicable parts of 87 are met.

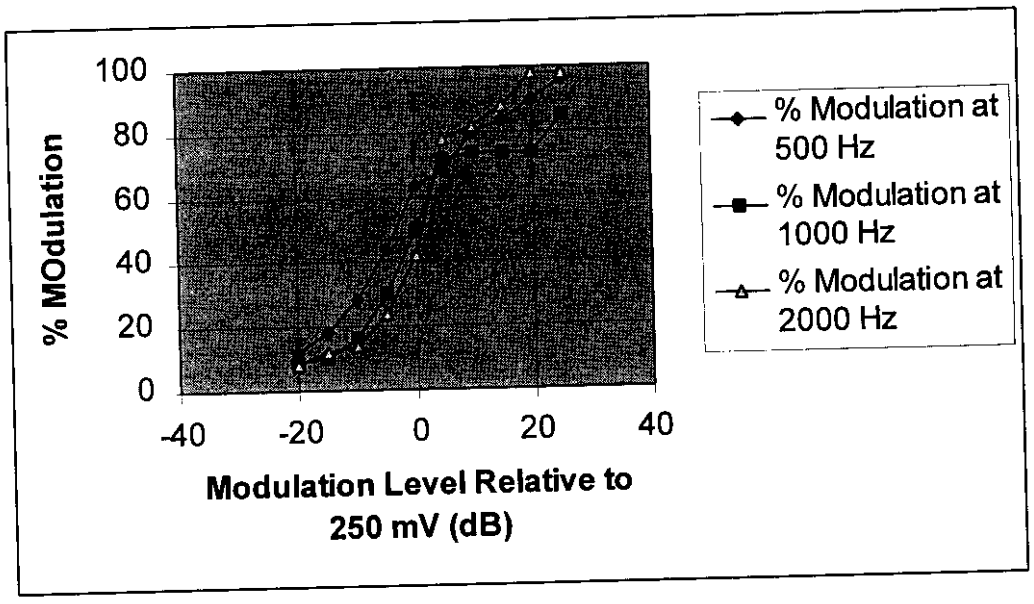


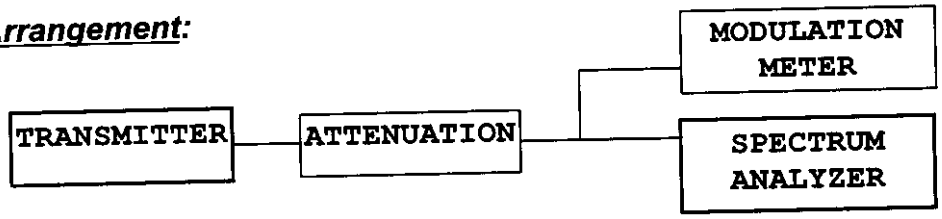
Figure 6: Modulation Characteristics.

2.1049 Occupied Bandwidth

Measurements Required:

The occupied bandwidth, that is the frequency bandwidth such that below its lower and above its upper frequency limits, the mean powers radiated are equal to 0.5 percent of the total mean power radiated by a given emission.

Test Arrangement:



Results:

Channel Spacing	fc	O.B. kHz *
25 kHz	127.500	5.7
25 kHz ACARS	127.500	5.3
8.33 kHz	127.505	5.6

Refer to Figures 7, 8 and 9.

A spectrum analyzer was used to observe the radio frequency spectrum with the transmitter operating in a normal mode, modulated by a frequency of 2500 Hz at a level 16 dB above 50% modulation. The power ratio in dB representing 99.5% of the total mean power was recorded from the spectrum analyzer.

Requirements of 2.1049(c)(1) and applicable paragraphs of Part 87 are met. There are no deviations to the specifications.

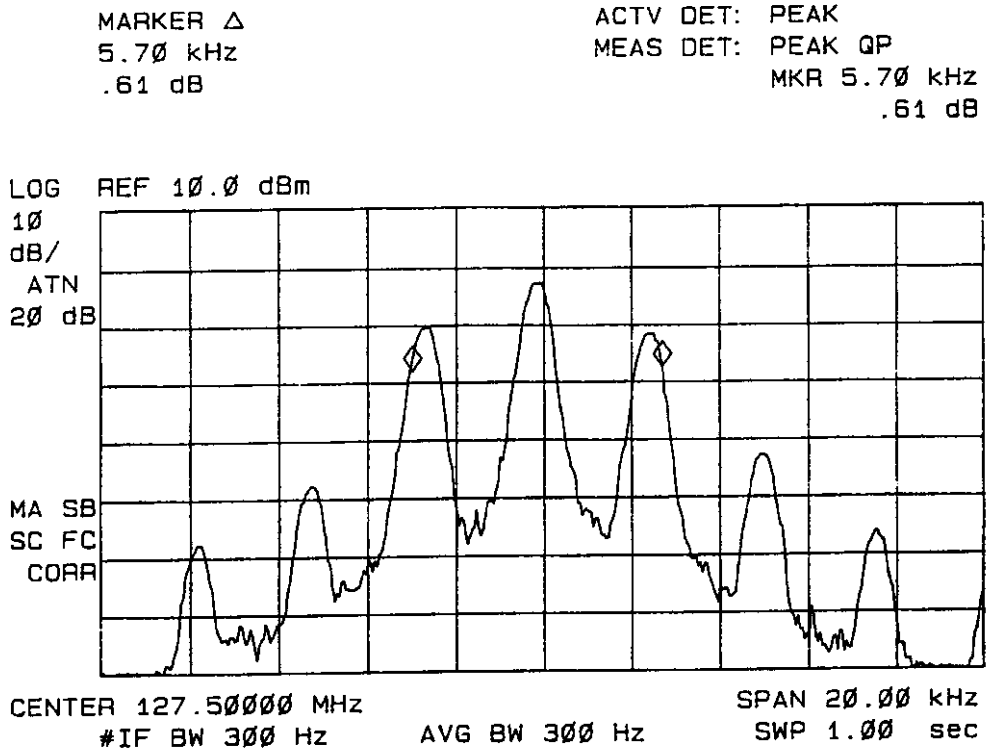


Figure 7: Occupied Band Width, Channel Spacing 25 kHz, Audio

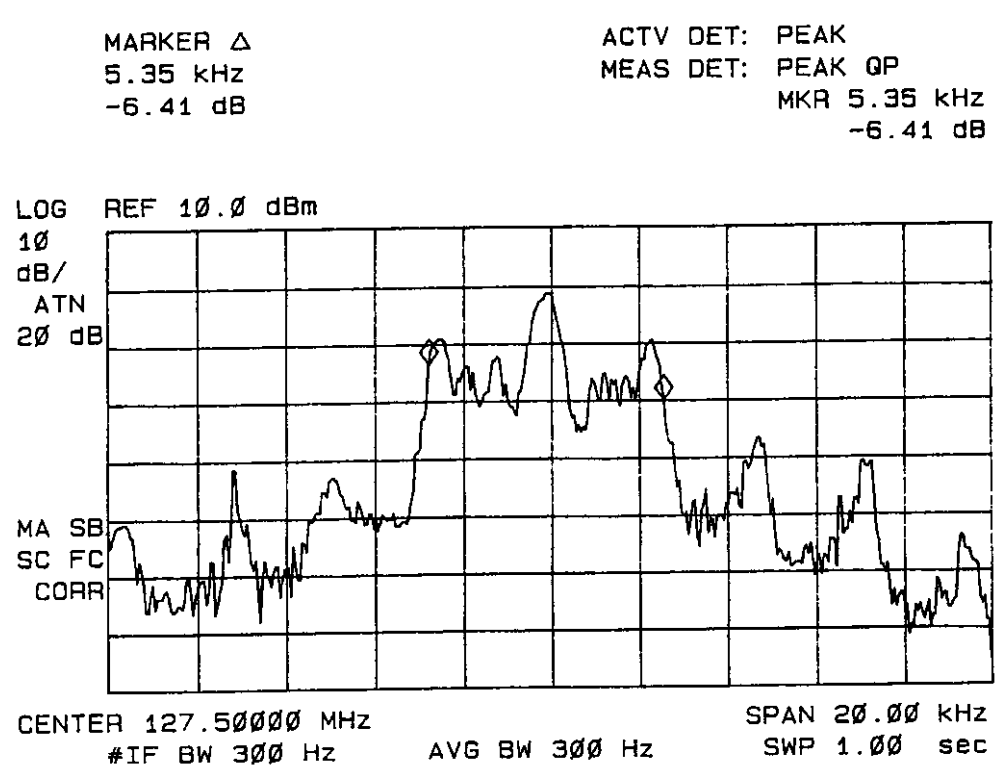


Figure 8: Occupied Band Width, Channel Spacing 25 kHz, ACARS

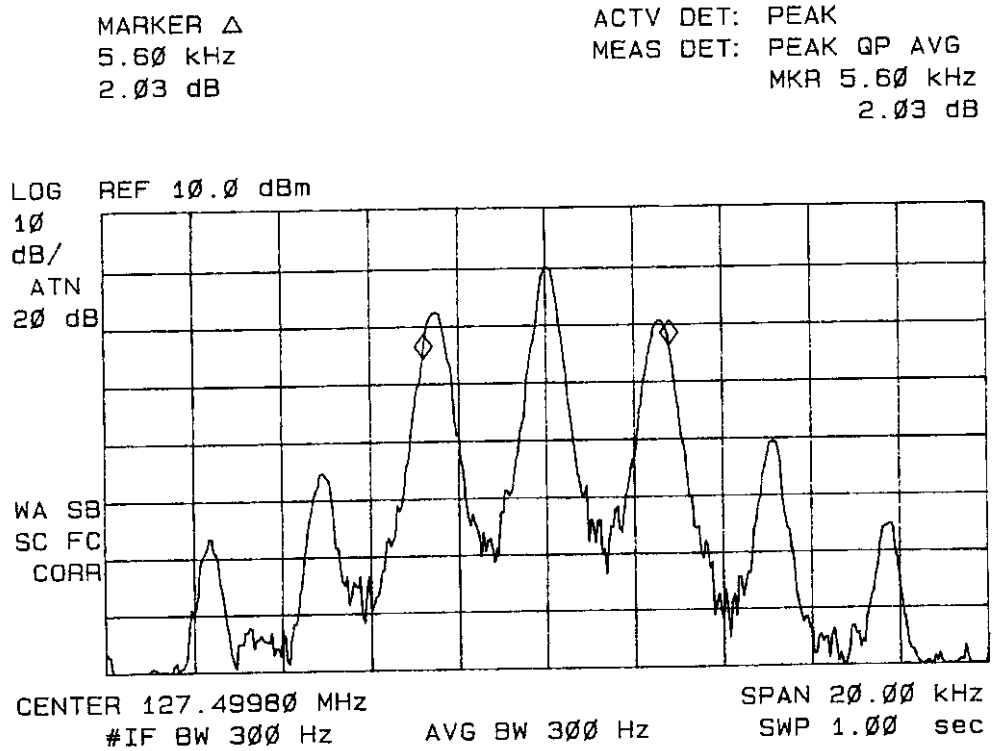


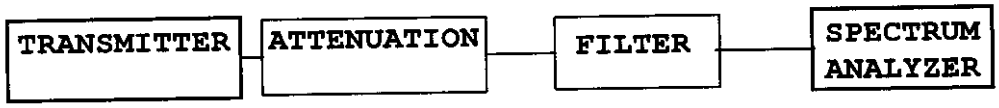
Figure 9: Occupied Band Width, Channel Spacing 8.33 kHz, Audio

2.1051 Spurious Emissions at Antenna Terminals

Measurements Required:

The radio frequency voltage or power generated within the equipment and appearing on a spurious frequency shall be checked at the equipment output terminals when properly loaded with a suitable artificial antenna.

Test Arrangement:



The radio frequency output was coupled to a HP 8591EM Spectrum Analyzer. The spectrum analyzer was used to observe the radio frequency spectrum with the transmitter operated in a normal mode. The frequency spectrum from 10 MHz to 1.5 GHz was observed and plots produced of the frequency spectrum. Figures 10 and 11 represent data for the KY196B. Data taken per 2.1051, 2.1057, and applicable paragraphs of Part 87.

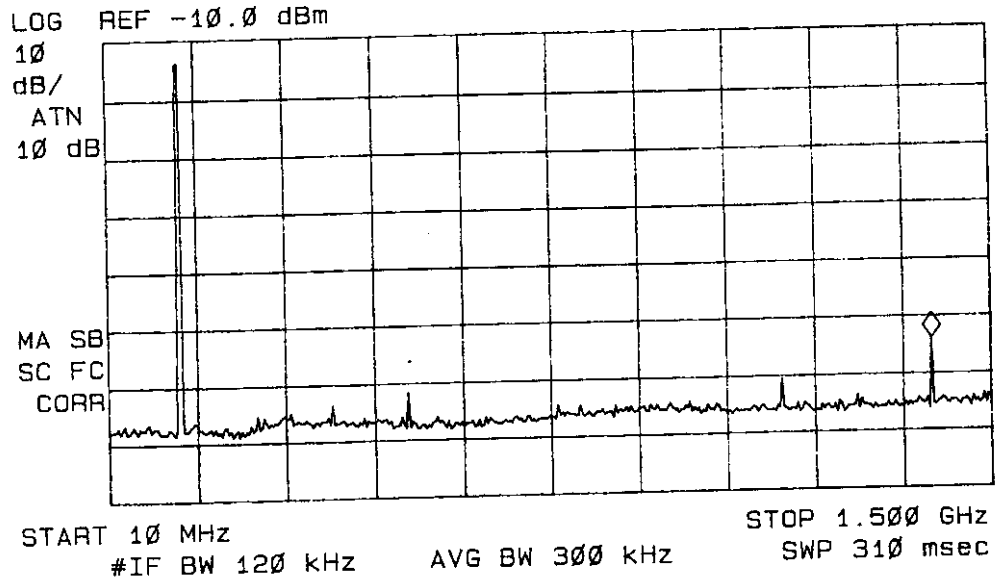


Figure 10: Emissions at Antenna Terminal 25 kHz Channel Spacing

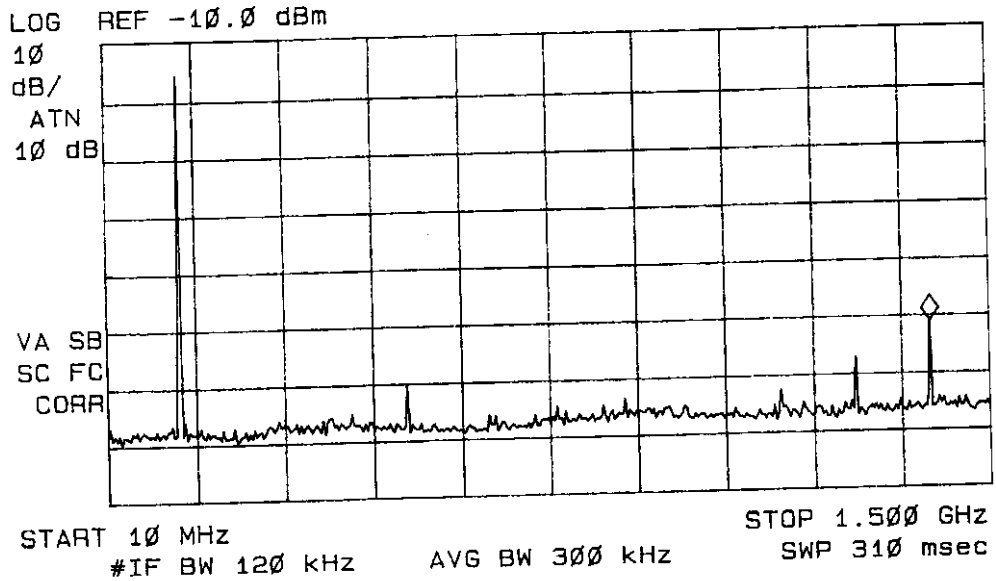


Figure 11: Emissions at Antenna Terminal 8.33 kHz Channel Spacing

Results:

The output of the unit was coupled to a HP Spectrum Analyzer and the frequency emissions were measured. Data was taken as per 2.1051 and applicable paragraphs of Part 87. Specifications of Paragraphs 2.1051, 2.1057 and applicable parts of 87 are met. There are no deviations to the specifications.

FCC Limit:
25 Watt = 43 + 10 LOG(P_o)
= 43 + 10 LOG(25)
= 54.4
Level below carrier:
Amplitude of carrier less amplitude of harmonic
= 43.9 - (-79.5)
= 123.1

CHANNEL MHz	SPURIOUS FREQ. (MHz)	LEVEL BELOW CARRIER (dB)	SPURIOUS AMPLITUDE (dBm)
118.000	236.0	123.1	-79.5
	354.0	121.5	-77.9
	472.0	118.1	-74.3

CHANNEL MHz	SPURIOUS FREQ. (MHz)	LEVEL BELOW CARRIER (dB)	SPURIOUS AMPLITUDE (dBm)
127.500	255.0	122.2	-78.3
	382.5	121.5	-77.6
	51.0	116.0	-72.1
	1402.5	105.1	-61.2

CHANNEL MHz	SPURIOUS FREQ. (MHz)	LEVEL BELOW CARRIER (dB)	SPURIOUS AMPLITUDE (dBm)
136.975	273.95	120.7	-77.1
	410.93	118.9	-75.3
	547.90	120.2	-76.6
	1232.78	112.1	-68.5

CHANNEL MHz	SPURIOUS FREQ. (MHz)	LEVEL BELOW CARRIER (dB)	SPURIOUS AMPLITUDE (dBm)
127.505	255.0	120.1	-76.2
	382.5	119.7	-75.8
	510.0	114.1	-70.2
	1420.5	105.1	-61.2

2.1053 Field Strength of Spurious Radiation

Measurements Required:

Measurements shall be made to detect spurious emissions that may be radiated directly from the cabinet, control circuits, power leads, or intermediate circuit elements under normal conditions of installation and operation.

Test Arrangement:

The transmitter was placed on a wooden turntable 0.8 meters above the ground plane and at a distance of 3 meters from the FSM antenna. The turntable was rotated though 360 degrees to locate the position registering the highest amplitude emission. The frequency spectrum was then searched for spurious emissions generated from the transmitter. The amplitude of each spurious emission was maximized by raising and lowering the FSM antenna and rotating the turntable before data was recorded. A log periodic antenna was used for frequencies of 200 MHz to 5 GHz and pyramidal horn antennas were used for frequencies of 5 GHz to 40 GHz. Emission levels were measured and recorded from the spectrum analyzer in dBμV. This level was then added to the antenna factor to calculate the field strength at 3 meters. Data was taken at the ROGERS LABS, INC. 3 meters open area test site (OATS). A description of the test facility is on file with the FCC, Reference 31040/SIT, 1300F2, dated February 6, 1998. The testing procedures used conform to the procedures stated in the ANSI 63.4-1992 document.

Calculations made are as follows:

CFS = Calculated Field Strength
FSM = Field Strength Measurement
CFS = FSM + Antenna Factor
CFS = 40.4 + 13.5 - 35
CFS = 18.9

The limit for emissions are defined by the following equations:

Limit = Amplitude of spurious emission must be attenuated by this amount below the level of the fundamental.

Calculating the field strength at 3 meters for the 25-watt transmitter was done as follows:

$E = \frac{5.5\sqrt{PG}}{d}$ where E is V/m, P is Watts, G = 1.64 and d d is meters.

$E = \frac{5.5\sqrt{25(1.64)}}{3} = 11.74$ V/m = 11.74E6μV/m at 3 meters.

This was converted to dBμV/m using (20*log μV/m) for convenience.

20*Log(11.74E6) = 141.4 dBμV/m @ 3 meters

On any frequency removed from the assigned frequency by more than 250% of the authorized bandwidth: at least 43 + 10 Log (P_o) dB.

Attenuation = 43 + 10 $Log_{10}(P_w)$
= 43 + 10 $Log_{10}(25)$
= 54.4 dB

Limit = 141.4 - 54.4
= 87.0

Results:

Channel 118.000 MHz

Frequency (MHz)	FSM Horz. (dBμV)	FSM Vert. (dBμV)	Ant. Factor (dB)	Amp. Gain (dB)	CFS Horz. @ 3m (dBμV/m)	CFS Vert. @ 3m (dBμV/m)	Limit
236.0	40.4	37.3	13.5	35	18.9	15.8	87
354.0	41.2	39.9	16.5	35	22.7	21.4	87
472.0	55.8	44.7	20.8	35	41.6	30.5	87
590.0	51.4	54.9	21.7	33	38.1	41.6	87

Channel 127.500 MHz

Frequency (MHz)	FSM Horz. (dBµV)	FSM Vert. (dBµV)	Ant. Factor (dB)	Amp. Gain (dB)	CFS Horz. @ 3m (dBµV/m)	CFS Vert. @ 3m (dBµV/m)	Limit
255.0	55.7	51.3	12.4	35	33.1	28.7	87
382.5	63.7	69.5	15.6	35	44.3	50.1	87
510.0	51.8	52.5	17.6	35	34.4	35.1	87
637.5	59.5	56.6	20	35	44.5	41.6	87

Channel 136.975 MHz

Frequency (MHz)	FSM Horz. (dBµV)	FSM Vert. (dBµV)	Ant. Factor (dB)	Amp. Gain (dB)	CFS Horz. @ 3m (dBµV/m)	CFS Vert. @ 3m (dBµV/m)	Limit
273.98	57.5	54.3	13.5	35	36	32.8	87
410.93	60.7	60.5	16.1	35	41.8	41.6	87
547.90	52.9	47.0	18.6	35	36.5	30.6	87
684.90	53.1	52.1	20.5	35	38.6	37.6	87

Channel 127.505 MHz

Frequency (MHz)	FSM Horz. (dBµV)	FSM Vert. (dBµV)	Ant. Factor (dB)	Amp. Gain (dB)	CFS Horz. @ 3m (dBµV/m)	CFS Vert. @ 3m (dBµV/m)	Limit
255.0	56.0	52.5	12.4	35	33.4	29.9	87
382.0	63.1	67.5	15.6	35	43.7	48.1	87
510.0	52.2	53.4	17.6	35	34.8	36.0	87
637.5	58.9	57.7	20	35	43.9	42.8	87

Specifications of Paragraph 2.1053, 2.1057 and 87.139 are met. There are no deviations to the specifications.

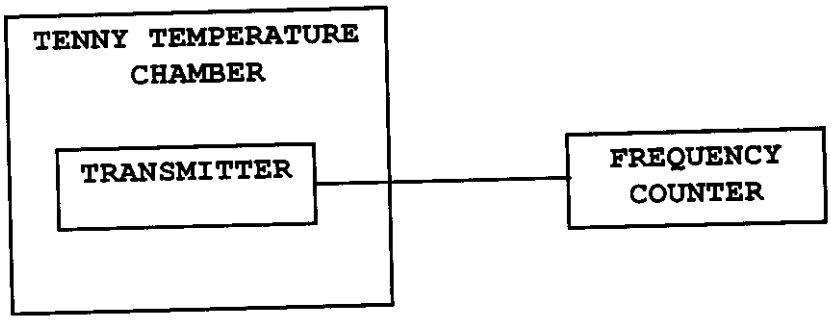
2.1055 Frequency Stability

Measurements Required:

The frequency stability shall be measured with variations of ambient temperature from -30° to +50° centigrade. Measurements shall be made at the extremes of the temperature range and at intervals of not more than 10° centigrade through the range. A period of time sufficient to stabilize all of the components of the oscillator circuit at each temperature level shall be allowed prior to frequency measurement. In addition to temperature stability the frequency stability shall be measured with variation of primary supply voltage as follows:

(1) Vary primary supply voltage from 85 to 115 percent of the nominal value for other than hand carried battery equipment.
(2) For hand carried, batteries powered equipment, reduce primary supply voltage to the battery operating end point which shall be specified by the manufacturer.
(3) The supply voltage shall be measured at the input to the cable normally provided with the equipment, or at the power supply terminals if cables are not normally provided.

Test Arrangement:



The measurement procedure outlined below shall be followed:

Steps 1: The transmitter shall be installed in an environmental test chamber whose temperature is controllable. Provision shall be made to measure the frequency of the transmitter.
Step 2: With the transmitter inoperative (power switched "OFF"), the temperature of the test chamber shall be adjusted to +25°C. After a temperature stabilization period of one hour at +25°C, the transmitter shall be switched "ON" with standard test voltage applied.

Step 3: The carrier shall be keyed "ON", and the transmitter shall be operated unmodulated at full radio frequency power output at the duty cycle, for which it is rated, for a duration of at least 5 minutes. The radio frequency carrier frequency shall be monitored and measurements shall be recorded.
Step 4: The test procedures outlined in Steps 2 and 3, shall be repeated after stabilizing the transmitter at the environmental temperatures specified, -30°C to 50°C in 10 degree increments.

The frequency stability was measured with variations in the power supply voltage from 85 to 115 percent of the nominal value. A Sorenson DC Power Supply was used to vary the dc voltage for the power input from 23.8 Vdc to 32.2 Vdc. The frequency was measured and the variation in parts per million was calculated. Data was taken per Paragraphs 2.1055 and 87.133.

Results:

FREQ.	FREQUENCY STABILITY VS TEMPERATURE IN PARTS PER MILLION (PPM)								
(MHz)	Temperature in °C								
	-30	-20	-10	0	+10	+20	+30	+40	+50
118.000	0.8	0.8	0.5	0.3	-0.3	0	-0.5	-0.8	-0.2
127.500	1.0	1.0	0.7	0.4	-0.1	0	-0.4	-0.7	-0.2
136.990	1.0	1.0	0.7	0.4	-0.1	0	-0.4	-0.7	-0.2

FREQUENCY IN MHz	STABILITY VS VOLTAGE VARIATION (±15%) IN PPM INPUT VOLTAGE		
	23.8 V_{dc}	28.0 V_{dc}	32.2 V_{dc}
118.000	0	0	0
127.500	0	0	0
136.975	0	0	0
136.990	0	0	0

Specifications of Paragraphs 2.1055 and applicable parts of 87 are met. There are no deviations to the specifications.

APPENDIX

Model: KY196B

1. Photos of Radiated Emissions Test Set Up.
2. Photos Case front and back.
3. Photo FCC ID Label Location.
4. Test Equipment List.
5. Rogers Qualifications.
6. FCC Site Approval Letter.
7. Operating Procedure.
8. Theory of Operation.
9. Alignment Procedure.

TEST EQUIPMENT LIST FOR ROGERS LABS, INC.

The equipment is used daily and kept in good calibration and operating condition. Calibration of critical items are checked for accuracy each time used.

List of Test Equipment:	Calibration Date:
Scope: Tektronix 2230	2/98
Wattmeter: Bird 43 with Load Bird 8085	2/98
Power Supplies: Sorensen SRL 20-25, DCR 150, DCR 140	2/98
H/V Power Supply: Fluke Model: 408B (SN: 573)	2/98
R.F. Generator: Boonton 102F	2/98
R.F. Generator: HP 606A	2/98
R.F. Generator: HP 8614A	2/98
R.F. Generator: HP 8640B	2/98
Spectrum Analyzer: HP 8562A,	2/98
Mixers: 11517A, 11980A & 11980K	
HP Adapters: 11518, 11519, 11520	
Spectrum Analyzer: HP 8591 EM	6/98
Frequency Counter: Weston 1255	2/98
Frequency Counter: Leader LDC 825	2/98
Antenna: EMCO Log Periodic	9/98
Antenna: BCD 235/BNC Antenna Research	9/98
Antenna: EMCO Dipole Set 3121C	2/98
Antenna: C.D. B-100	2/98
Antenna: Solar 9229-1 & 9230-1	2/98
Antenna: EMCO 6509	2/98
Microline Freq. Meter: Model 27B	2/98
Dana Modulation Meter: Model 9008	2/98
Audio Oscillator: H.P. 200CD	2/98
R.F. Power Amp 65W Model: 470-A-1000	9/97
R.F. Power Amp 50W M185- 10-500	9/97
R.F. PreAmp CPPA-102	9/97
Shielded Room 5 M x 3 M x 3.0 M (100 dB Integrity)	
LISN 50 µHy/50 ohm/0.1 µf	9/98
LISN Compliance Eng. 240/20	2/98
SCS Power Amp Model: 2350A	2/98
Power Amp A.R. Model: 10W 1000M7	2/98
Linear Amp Mini Circuits: ZHL-1A (2 Units)	2/98
Combiner Unit Mini Circuits: ZSC-2-1 (2 Units)	2/98
ELGAR Model: 1751	2/98
ELGAR Model: TG 704A-3D	2/98
ELGAR Model: 400SD (PB)	2/98
ESD Test Set 2000i	10/95
Fast Transient Burst Generator Model: EFT/B-100	10/95
Current Probe: Singer CP-105	8/97
Current Probe: Solar 9108-1N	8/97
Field Intensity Meter: EFM-018	10/95

10/01/98

QUALIFICATIONS

Of

SCOT D. ROGERS, ENGINEER

ROGERS LABS, INC.

Mr. Rogers has approximately 12 years experience in the field of electronics. Six years working in the automated controls industry and 6 years working with the design, development and testing of radio communications and electronic equipment.

POSITIONS HELD:

Systems Engineer:	A/C Controls Mfg. Co., Inc. 6 Years
Electrical Engineer:	Rogers Consulting Labs, Inc. 5 Years
Electrical Engineer:	Rogers Labs, Inc. Current

EDUCATIONAL BACKGROUND:

1) Bachelor of Science Degree in Electrical Engineering from Kansas State University.

2) Bachelor of Science Degree in Business Administration Kansas State University.

3) Several Specialized Training courses and seminars pertaining to Microprocessors and Software programming.

Scot D Rogers

Scot D. Rogers

1/26/99

Date

1/11/99

FEDERAL COMMUNICATIONS COMMISSION

7435 Oakland Mills Road
Columbia, MD 21046
Telephone: 301-725-1585 (ext-218)
Facsimile: 301-344-2050

February 6, 1998

IN REPLY REFER TO
31040/SIT
1300F2

Rogers Labs, Inc.
4405 West 259th Terrace
Louisburg, KS 66053

Attention: Scot D. Rogers

Re: Measurement facility located at above address
(3 and 10 meter site)

Gentlemen:

Your submission of the description of the subject measurement facility has been reviewed and found to be in compliance with the requirements of Section 2.948 of the FCC Rules. The description has, therefore, been placed on file and the name of your organization added to the Commission's list of facilities whose measurement data will be accepted in conjunction with applications for certification or notification under Parts 15 or 18 of the Commission's Rules. Our list will also indicate that the facility complies with the radiated and AC line conducted test site criteria in ANSI C63.4-1992. Please note that this filing must be updated for any changes made to the facility, and at least every three years the data on file must be certified as current.

Per your request, the above mentioned facility has been also added to our list of those who perform these measurement services for the public on a fee basis. This list is updated monthly and is available on the Laboratory's Public Access Link (PAL) at 301-725-1072, and also on the Internet at the FCC Website www.fcc.gov/oet/info/database/testsite/.

Sincerely,

Thomas W. Phillips
Electronics Engineer
Customer Service Branch

APPENDIX

(Continued)

Contains the following information:

1. Product Description Sheet one page.
2. Instruction Book: (Operating procedure) installation Manual P/N 006-010570-0000 twenty three pages.
3. Transceiver Alignment Procedure P/N 001-01192-0000 seven pages.
4. Main Board Schematic P/N 002-07469-0040 five pages.
5. Transmitter Board Schematic P/N 002-06047-0010 two pages.
6. Filter Board Schematic P/N 002-08939-0000 one page.
7. Processor Board Schematic P/N 002-09507-0000 four pages.
8. Display Board Schematic P/N 002-09508-0000 one page.
9. Peak Response Board P/N 002-09652-01 one page.
10. AM-FM Control/TX Interlock (Top) Board Schematic P/N 002-09501-0000 two pages.
11. VCO/Synth. Board Schematic P/N 002-09628-01 one page.
12. RF Amp Board Schematic P/N 002-08506-0000 one page.
13. Theory Of Operation ten pages.
14. RF Block Diagram one page.
15. Microprocessor Block Diagram one page.
16. Identification Plate: Serial Number Tag, KY 196B three pages.
17. Final Assembly Drawing P/N 064-01084-02 three pages.
18. Main Board Assembly P/N 300-07469-0040 three pages.
19. Transmitter Board Assembly P/N 300-06047-0010 one page.
20. Filter Board Assembly P/N 300-08939-0000 one page.
21. Processor Board Assembly P/N 300-09507-0000 two pages.
22. Display Board Assembly P/N 300-09508-0000/0099 two pages.
23. Peak Response Board P/N 300-09652-01 one page.
24. AM-FM Control/TX Interlock (Top) Board Assembly P/N 300-09501-0000 two pages.
25. VCO/Synth. Board Assembly P/N 300-09628-01/0099 two pages.
26. RF Amp Board Assembly P/N 300-08506-0000 one page.
27. Description of Digital Information one page.