CERTIFICATION TEST REPORT

FOR THE

CONSOLELINK, 7617

FCC PART 15 SUBPART C

COMPLIANCE

DATE OF ISSUE: AUGUST 23, 1999

PREPARED FOR:

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Hayward, CA 94545

P.O. No: 12542
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Report No: FC99-024

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Date of test: August 6, 9, 16, 1999

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ADMINISTRATIVE INFORMATION

DATE OF TEST:	August 6, 9, 16, 1999
PURPOSE OF TEST:	To demonstrate the compliance of the ConsoleLink, 7617, with the requirements for FCC Part 15 Subpart C devices.
MANUFACTURER:	Davis Instruments 3465 Diablo Ave. Hayward, CA 94545
REPRESENTATIVE:	Brett Preston
TEST LOCATION:	CKC Laboratories, Inc. 5473A Clouds Rest Mariposa Ca 95338
TEST PERSONNEL:	Wes Norris & Dustin Oaks
TEST METHOD:	ANSI C63.4 1992
FREQUENCY RANGE TESTED:	9 kHz - 9200 MHz
EQUIPMENT UNDER TEST:	**ConsoleLink** Manuf: Davis Instruments Model: 7617 Serial: Prototype FCC ID: IR2DWW7617 (pending)

SUMMARY OF RESULTS

The Davis Instruments ConsoleLink, 7617, was tested in accordance with ANSI C63.4 1992 for compliance with FCC Part 15 Subpart C.

As received, the above equipment was found to be fully compliant with the limits of FCC Part 15 Subpart C. The results in this report apply only to the items tested, as identified herein.

EQUIPMENT UNDER TEST (EUT) DESCRIPTION

Device transmits every 2.5 seconds 6 bytes of data using OOK and <1mW of power at 916.5 MHz. Accessory for wired stations.

MEASUREMENT UNCERTAINTY

Associated with data in this report is a ±4dB measurement uncertainty.

EUT OPERATING FREQUENCY

The EUT was operating at 916.5 MHz.

TEMPERATURE AND HUMIDITY DURING TESTING

The temperature during testing was within +15°C and + 35°C.
The relative humidity was between 20% and 75%.

PERIPHERAL DEVICES

The EUT was tested with the following peripheral device(s):

Weather Console
Manuf: Davis Instruments
Model: 7425
Serial: WC80921B67
FCC ID:

PC Link
Manuf: Davis Instruments
Model: 7862
Serial: LC90802A32
FCC ID: IR2DUW74XX

AC Adaptor
Manuf: Davis
Model: 7916
Serial: N/A
FCC ID:

REPORT OF MEASUREMENTS

The following tables report the six highest worst case levels recorded during the tests performed on the ConsoleLink, 7617. All readings taken are peak readings unless otherwise noted by a "Q" or "A". The data sheets from which these tables were compiled are contained in Appendix B.

Table 1: Six Highest Radiated Emission Levels-Below One GHz

FREQUENCY MHz	METER READING dBµV	CORRECTION FACTORS Ant dB	Amp dB	Cable dB	Dist dB	CORRECTED READING dBµV/m	SPEC LIMIT dBµV/m	MARGIN dB	NOTES
32.300	48.4	14.1	-26.7	0.8		36.6	40.0	-3.4	VQ
48.580	52.4	11.5	-26.6	1.1		38.4	40.0	-1.6	VQ
58.539	54.6	8.7	-26.7	1.1		37.7	40.0	-2.3	VQ
59.038	54.9	8.6	-26.7	1.1		37.9	40.0	-2.1	VQ
59.566	54.4	8.5	-26.7	1.1		37.3	40.0	-2.7	VQ
60.072	56.4	8.4	-26.7	1.1		39.2	40.0	-0.8	VQ

Test Method: ANSI C63.4 1992
Spec Limit : FCC Part 15.209/15.231(e)
Test Distance: 3 Meters

NOTES:
H = Horizontal Polarization
V = Vertical Polarization
N = No Polarization
D = Dipole Reading
Q = Quasi Peak Reading
A = Average Reading

COMMENTS: Testing to FCC Part 15 Subpart C, Section 15.209/15.231(e). The EUT is fully operational, receiving weather data from the Weather Console. The EUT is transmitting continuously, at full power, in CW Mode. The EUT is receiving its power from the Weather Console, which is powered from the AC Adaptor powered from a 115V/60Hz source.

Table 2: Six Highest Radiated Emission Levels - Above One GHz

FREQUENCY	METER READING	CORRECTION FACTORS				CORRECTED READING	SPEC LIMIT	MARGIN	NOTES
		Horn	Amp	P Factor	Cable				
MHz	dBµV	dB	dB	dB	dB	dBµV/m	dBµV/m	dB	
1833.000	73.9	26.5	-38.6	0.0	4.2	66.0	74.0	-8.0	H
3666.000	62.5	32.4	-38.9	-20.0	6.3	42.3	54.0	-11.7	H
4582.500	57.1	32.3	-39.7	-20.0	7.2	36.9	54.0	-17.1	H
7332.000	49.0	36.6	-39.2	-20.0	8.6	35.0	54.0	-19.0	V
8248.500	47.2	37.6	-40.2	-20.0	9.9	34.5	54.0	-19.5	H
9165.000	47.8	38.5	-39.0	-20.0	10.0	37.3	54.0	-16.7	V

Test Method: ANSI C63.4 1992
Spec Limit : FCC Part 15.209/15.231(e)
Test Distance: 3 Meters

NOTES: H = Horizontal Polarization
V = Vertical Polarization
N = No Polarization
D = Dipole Reading
Q = Quasi Peak Reading
A = Average Reading

COMMENTS: Testing to FCC Part 15 Subpart C, Section 15.209/15.231(e). The EUT is fully operational, receiving weather data from the Weather Console. The EUT is transmitting continuously, at full power, in CW Mode. The frequencies which are close to limit have the specification limit raised from 54dBuV to 74dBuV based on a 20dB correction factor for pulsed systems (noted as "P Factor" on data sheets) derived from the duty cycle of the transmitter. The on time of the transmitter in a 100ms period is measured. This on time divided by the 100ms period is the duty cycle. A 20Log(duty cycle) calculation is then performed and this factor (not to exceed 20dB) is then added to the limit. This method is specified in CFR 47 Section 15.35(c). The EUT is receiving its power from the Weather Console, which is powered from the AC Adaptor powered from a 115V/60Hz source.

Table 3: Six Highest Conducted Emission Levels									
FREQUENCY MHz	METER READING dBµV	CORRECTION FACTORS Lisn dB	dB	dB	dB	CORRECTED READING dBµV	SPEC LIMIT dBµV	MARGIN dB	NOTES
0.456825	36.0	0.0				36.0	48.0	-12.0	B
1.126235	36.0	0.0				36.0	48.0	-12.0	B
9.695558	35.5	0.0				35.5	48.0	-12.5	W
25.181080	38.5	0.0				38.5	48.0	-9.5	B
25.455020	36.0	0.0				36.0	48.0	-12.0	B
25.978010	36.1	0.0				36.1	48.0	-11.9	B

Test Method: ANSI C63.4 1992
Spec Limit : FCC Part 15.207
Test Distance: No Distance

NOTES: Q = Quasi Peak Reading
A = Average Reading
B = Black Lead
W = White Lead

COMMENTS: Testing to FCC part 15 Subpart C, Section 15.207. The EUT is fully operational, receiving weather data from the Weather Console. The EUT is transmitting this data in 12.5 milli-second bursts each 2.5 seconds. The EUT is receiving its power from the Weather Console, which is powered from the AC Adaptor, which is powered from a 115V/60Hz source.

TABLE A

LIST OF TEST EQUIPMENT

1. Spectrum Analyzer, Hewlett Packard, Model No. 85680A, S/N 2049A01408. Calibration date: April 9, 1999. Calibration due date: April 9, 2000.

2. Quasi Peak Adapter, Hewlett Packard, Model No. 85650A, S/N 2430A00541. Calibration date: March 3, 1999. Calibration due date: March 3, 2000.

3. Preamp, Hewlett Packard, Model No. 8447F, S/N 2944A03850. Calibration date: March 22, 1999. Calibration due date: March 22, 2000.

4. Biconical Antenna, Schwarzbeck, Model No. 3110, S/N 9205-1522. Calibration date: April 22, 1999. Calibration due date: April 22, 2000.

5. Log Periodic Antenna, A & H Systems, Model No. SAS-200/510, S/N 318. Calibration date: April 23, 1999. Calibration due date: April 23, 2000.

6. Horn Antenna, EMCO, Model No. 3115, S/N 9602-4660. Calibration date: September 16, 1998. Calibration due date: September 16, 1999.

7. Magloop Antenna, EMCO, Model 6502, S/N 2078. Calibration date June 1, 1998. Calibration due date: September 1, 1999.

8. LISN, Solar Electronics, Model No. 8028-50-TS-24-BNC, S/Ns 910489 & 910490. Calibration date: August 19, 1998. Calibration due date: August 19, 1999.

9. Hollister site A. Calibration date: February 12, 1997. Calibration due date: January 30, 2000.

10. Test software, EMI Test 2.91.

EUT SETUP

The equipment under test (EUT) and the peripheral(s) listed were set up in a manner that represented their normal use. Any special conditions required for the EUT to operate normally are identified in the comments that accompany Tables 1 and 2 for radiated emissions and Table 3 for conducted characteristics. Additionally, a complete description of all the ports and I/O cables is included on the information sheets contained in Appendix A.

During radiated emissions testing, the EUT was mounted on a nonconductive, rotating table 80 cm above the conductive grid. The nonconductive table dimensions were 1 meter by 1.5 meters. This configuration is typical for radiated emissions testing of table top devices.

I/O cables were connected to the EUT and peripherals in the manner required for normal operation of the system. Excess cabling was bundled in the center in a serpentine fashion using 30-40 centimeter lengths.

During conducted emissions testing, the EUT was located on a wooden table measuring approximately 80 cm high, 1 meter deep, and 1.5 meters in length. One wall of the room where the EUT is located, has a minimum 2 meter by 2 meter conductive plane. The EUT was mounted on the wooden table 40 cm away from the conductive plane, and 80 cm from any other conductive surface.

The vertical metal plane used for conducted emissions was grounded to the earth. Power to the EUT was provided through a LISN. The LISN was grounded to the ground plane. All other objects were kept a minimum of 80 cm away from the EUT during the conducted test. Conducted emissions tests required the use of the LISN's listed in Table A.

TEST INSTRUMENTATION AND ANALYZER SETTINGS

The test instrumentation and equipment listed in Table A were used to collect both the radiated and conducted emissions data for the ConsoleLink, 7617. For frequencies below 30 MHz, the magloop antenna was used. For radiated measurements 30 - 300 MHz, the biconical antenna was used. For frequencies from 300 to 1000 MHz, the log periodic antenna was used. For frequencies above 1000 MHz the horn antenna was used. All antennas were located at a distance of 3 meters from the edge of the EUT. Conducted emissions tests required the use of the FCC type LISN's.

The HP spectrum analyzer was used for all measurements. Table B shows the analyzer bandwidth settings that were used in designated frequency bands. For conducted emissions, an appropriate reference level and a vertical scale size of 10 dB per division were used. A 10 dB external attenuator was also used during conducted tests, with internal offset correction in the analyzer. During radiated testing, the measurements were made with 0 dB of attenuation, a reference level of 97 dBµV, and a vertical scale of 10 dB per division.

TABLE B : ANALYZER BANDWIDTH SETTINGS PER FREQUENCY RANGE

TEST	BEGINNING FREQUENCY	ENDING FREQUENCY	BANDWIDTH SETTING
CONDUCTED EMISSIONS	150 kHz	30 MHz	9 kHz
RADIATED EMISSIONS	9 kHz	150 kHz	200 Hz
RADIATED EMISSIONS	150 kHz	30 MHz	9 kHz
RADIATED EMISSIONS	30 MHz	1000 MHz	120 kHz
RADIATED EMISSIONS	1000 MHz	40 GHz	1 MHz

SPECTRUM ANALYZER DETECTOR FUNCTIONS

The notes that accompany the measurements contained in Tables 1, 2 and 3 indicate the type of detector function used to obtain the given readings. Unless otherwise noted, all readings were made in the "Peak" mode. Whenever a "Quasi-Peak" or "Average" reading is listed as one of the six highest readings, this is indicated as a "Q" or an "A" in the appropriate table. The following paragraphs describe in more detail the detector functions and when they were used to obtain the emissions data for the ConsoleLink, 7617.

Peak

In this mode, the Spectrum Analyzer or test engineer recorded all emissions at their peak value as the frequency band selected was scanned. By combining this function with another feature of the analyzer called "peak hold," the analyzer had the ability to measure transients or low duty cycle transient emission peak levels. In this mode the analyzer made a slow scan across the frequency band selected and measured the peak emission value found at each frequency across the band.

Quasi-Peak

When the true peak values exceeded or were within 2 dB of the specification limit, quasi-peak measurements were taken using the HP Quasi-Peak Adapter for the HP Spectrum Analyzer. The detailed procedure for making quasi peak measurements contained in the HP Quasi-Peak Adapter manual were followed.

Average

When the frequencies exceed 1 GHz, average measurements may be made using the spectrum analyzer. To make these measurements, the test engineer reduces the video bandwidth on the analyzer until the modulation of the signal is filtered out. At this point the analyzer is set into the linear mode and the scan time is reduced.

TEST METHODS

The radiated and conducted emissions data of the ConsoleLink, 7617, was taken with the HP Spectrum Analyzer. Incorporating the applicable correction factors for distance, antenna, cable loss and amplifier gain, the data was reduced as shown in the "Sample Calculations". The corrected data was then compared to the FCC Part 15 Subpart C emissions limits to determine compliance.

Preliminary and final measurements were taken in order to better ensure that all emissions from the EUT were found and maximized.

Radiated Emissions Testing

During the preliminary radiated scan, the EUT was powered up and operating in its defined FCC test mode with the I/O cables and line cords facing the antenna. For frequencies below 30 MHz the magloop antenna was used. The frequency range of 30 MHz - 88 MHz was then scanned with the biconical antenna located about 1.5 meter above the ground plane in the vertical configuration. During this scan, the turntable was rotated and all peaks which were at or near the limit were recorded. The frequency range of 100 - 300 MHz was scanned with the biconical antenna in the same manner, and the peaks recorded. Lastly, a scan of the FM band from 88 - 110 MHz was made, using a reduced resolution bandwidth and a reduced frequency span. The biconical antenna was changed to the horizontal polarity and the above steps were repeated. After changing to the log periodic antenna in the horizontal configuration, the frequency range of 300 - 1000 MHz was scanned. The log periodic antenna was changed to the vertical polarity and the frequency range of 300 - 1000 MHz was again scanned. For frequencies above 1000 MHz the horn antenna was used. Care was taken to ensure that no frequencies were missed within the FM and TV bands. An analysis was performed to determine if the signals that were at or near the limit were caused by an ambient transmission. If unable to determine by analysis, the equipment was powered down to make the final determination if the EUT was the source of the emission.

For the final radiated scan, the equipment was again positioned with its I/O and power cables facing the antenna. A thorough scan of all frequencies was manually made using a small frequency span, rotating the turntable as needed. Comparison with the previously recorded measurements was then made.

Using the peak readings from both scans as a guide, the test engineer then maximized the readings with respect to the table rotation, antenna height and configuration of the peripherals and cables. Maximizing of the cables was achieved by monitoring the spectrum analyzer on a closed circuit television monitor while the EUT cables were being moved and rearranged on the EUT table for maximum emissions. Photographs showing the final worst case configuration of the EUT are contained in Appendix A.

Conducted Emissions Testing

For conducted emissions testing, a 30 to 50 second sweep time was used for automated measurements in the frequency bands of 450 kHz to 1.705 MHz, 1.705 MHz to 3 MHz, and 3 MHz to 30 MHz. All readings within 20 dB of the limit were recorded. At frequencies where the recorded emissions were close to the limit, further investigation was performed manually at a slower sweep rate.

FCC Part 15.215(c) - Occupied Bandwidth Measurements

In accordance with Part 15.215(c), the fundamental frequency was kept within the central 80% of the permitted band in order to minimize the possibility of out-of-band operation.

SAMPLE CALCULATIONS

The basic spectrum analyzer reading was converted using correction factors as shown in the emissions readings in Tables 1, 2 and 3. For radiated emissions in dBµV/m, the spectrum analyzer reading in dBµV was corrected by using the following formula:

Meter reading (dBµV)
+ Antenna Factor (dB)
+ Cable Loss (dB)
- Distance Correction (dB)
- Pre-amplifier Gain (dB)

= Corrected Reading (dBµV/m)

This reading was then compared to the applicable specification limit to determine compliance.

A typical data sheet will display the following in column format:

#	Freq MHz	Rdng dBuV	Cable	Amp.	Bicon	Horn	Log	Dist	Corr dBuV/m	Spec	Margin	Polar

means reading number
Freq MHz is the frequency in MHz of the obtained reading.
Rdng dBuV is the reading obtained on the spectrum analyzer in dBµV.
Amp. is short for the preamplifier factor or gain in dB.
Bicon is the biconical antenna factor in dB.
Horn is the horn antenna factor in dB.
Cable is the cable loss in dB of the coaxial cable on the OATS.
P Factor is the correction factor in dB used for pulsed systems (FCC Part 15.35).
Dist is the distance factor (in dB). It is used when testing at a different test distance than the one stated in the spec.
Corr dBµV/m is the corrected reading which is now in dBµV/m (field strength).
Spec is the specification limit (dB) stated in the agency's regulations.
Margin is the closeness to the specified limit in dB; + is over and - is under the limit.
Polar is the Polarity of the antenna with respect to earth.

APPENDIX A

INFORMATION ABOUT THE EQUIPMENT UNDER TEST

INFORMATION ABOUT THE EQUIPMENT UNDER TEST	
Test Software/Firmware:	N/A
CRT was displaying:	N/A
Power Supply Manufacturer:	Ablex, Hong Kong 9V DC @ 200 ma
Power Supply Part Number:	Model No. 7916
AC Line Filter Manufacturer:	N/A
AC Line Filter Part Number:	N/A
Line voltage used during testing:	115V 60Hz

I/O PORTS	
Type	#
4 conductor phone jack output to Weatherlink Data Logger Product No. 7862 +13V,SCLK,SDATA,GND	1

CRYSTAL OSCILLATORS	
Type	Freq. In MHz
Surface Mount Quartz	.076

PRINTED CIRCUIT BOARDS				
Function	Model & Rev	Clocks, MHz	Layers	Location
DEVICE TRANSMITS EVERY 2.5 SECONDS 6 BYTES OF DATA USING OOK AND < 1 MW OF POWER AT 916.5 MHZ. ACCESORY FOR WIRED STATIONS	7617 REV A	.072	2	Inside custom plastic housing.

REQUIRED EUT CHANGES TO COMPLY:
None.

CABLE INFORMATION

Cable #:	1	Cable(s) of this type:	1
Cable Type:	Standard Phone Wire	Shield Type:	None
Construction:		Length In Meters:	12
Connected To End (1):	ConsoleLink Circuit Board	Connected To End (2):	Weather Station Console
Connector At End (1):	Solder	Connector At End (2):	RJ11
Shield Grounded At (1):	None	Shield Grounded At (2):	None
Part Number:		Number of Conductors:	4
Notes:	+13V, SCLK, SDATA, GND		

PHOTOGRAPH SHOWING RADIATED EMISSIONS

Radiated Emissions - Front View

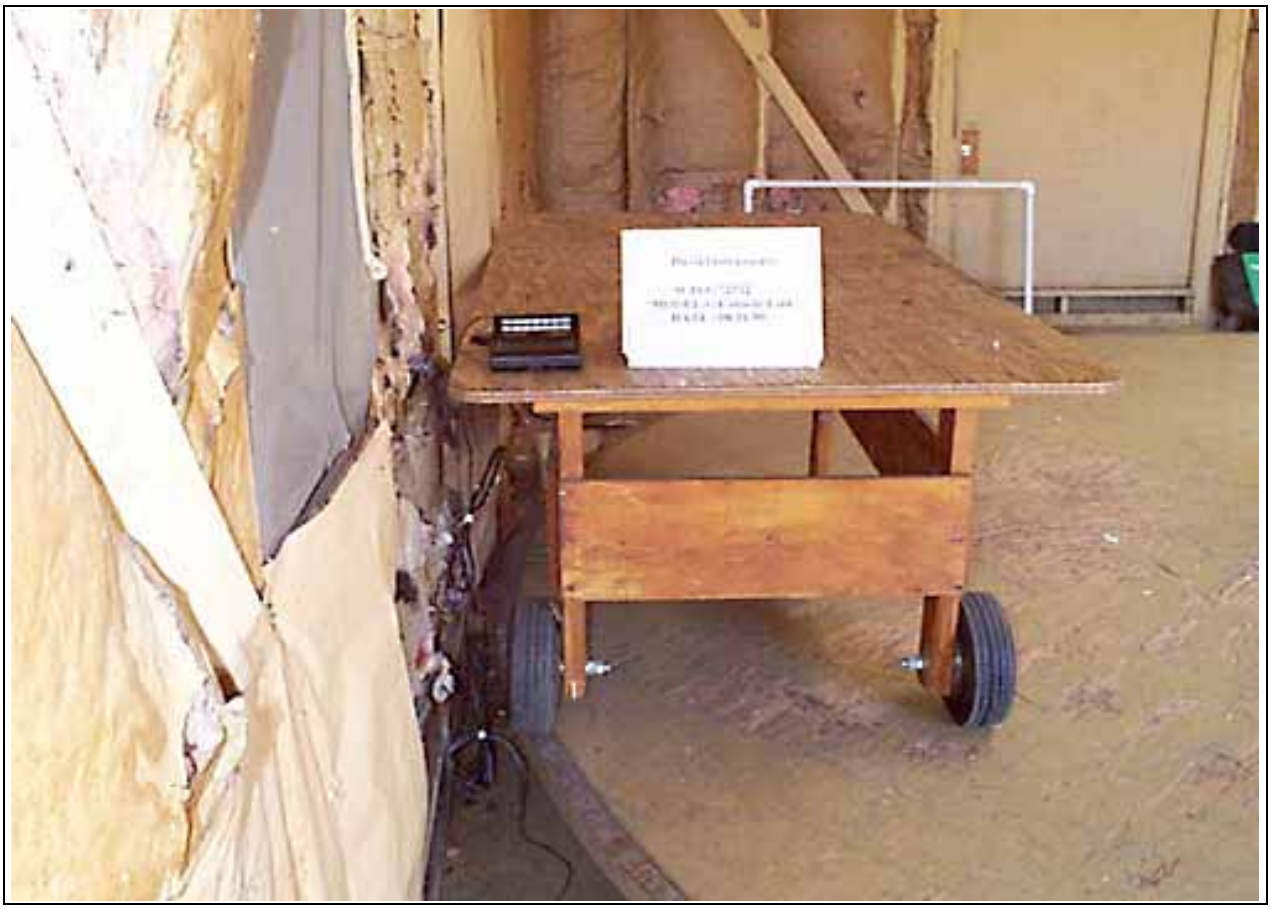
PHOTOGRAPH SHOWING RADIATED EMISSIONS

Radiated Emissions - Back View

PHOTOGRAPH SHOWING CONDUCTED EMISSIONS

Conducted Emissions - Front View

PHOTOGRAPH SHOWING CONDUCTED EMISSIONS

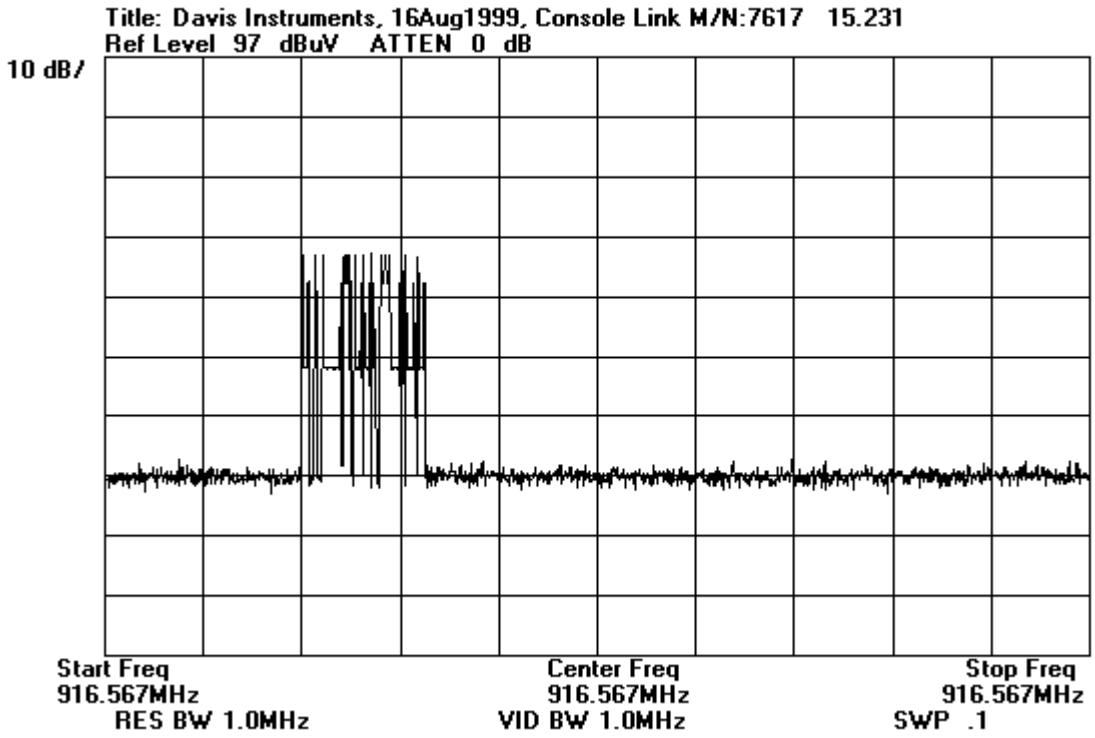


Conducted Emissions - Back View

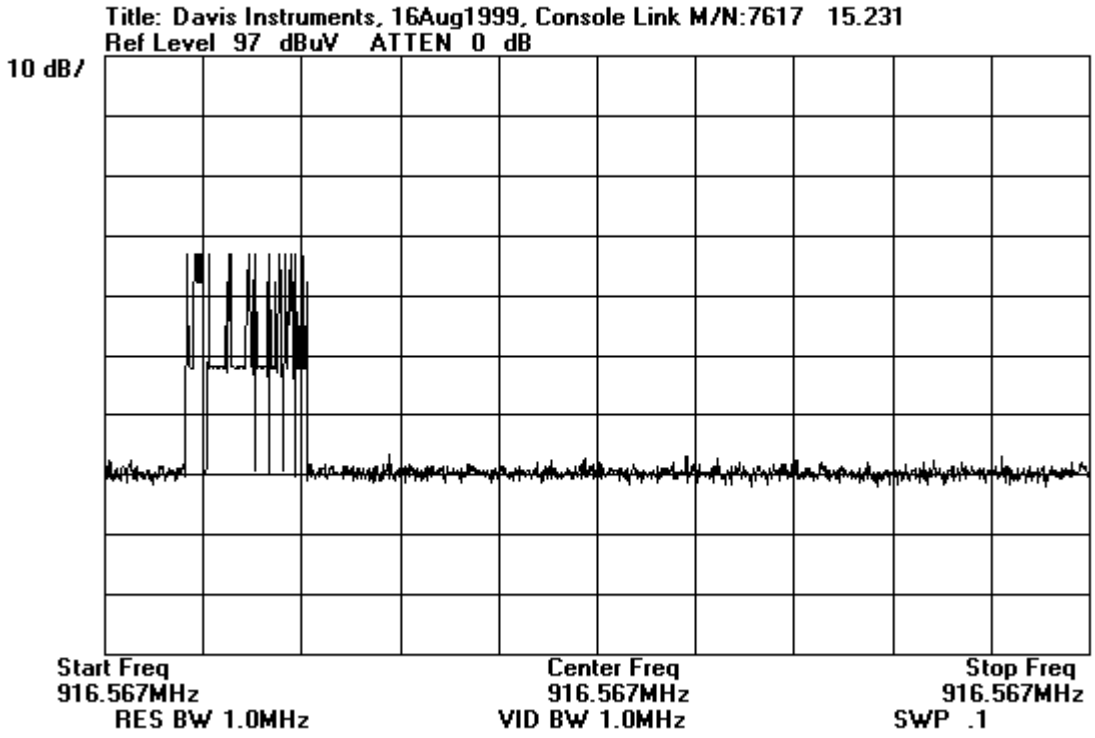
APPENDIX B

MEASUREMENT DATA SHEETS

Averaging for Pulsed Modulated Systems



Averaging for Pulsed Modulated Systems



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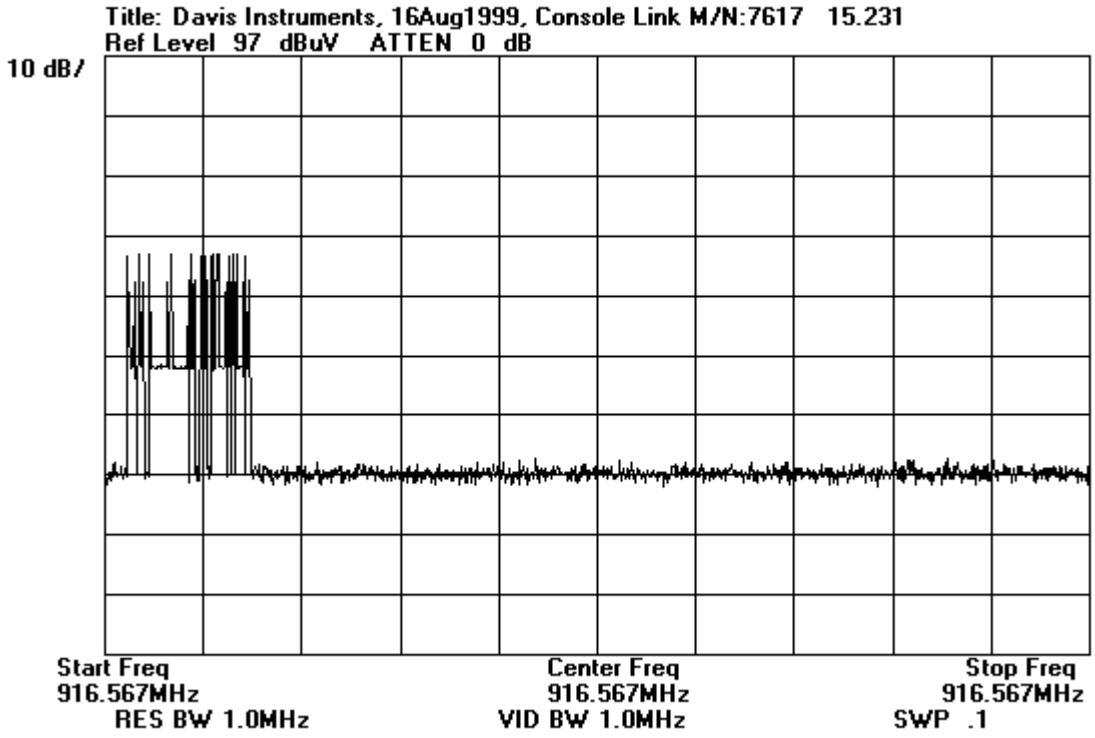

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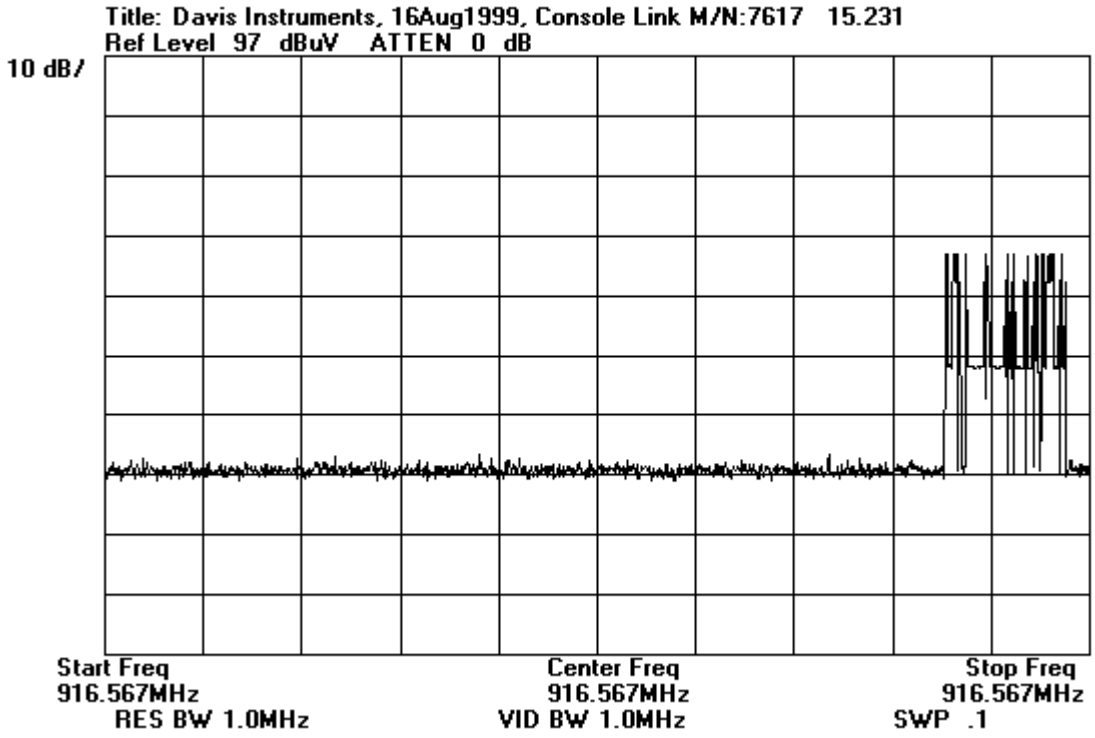
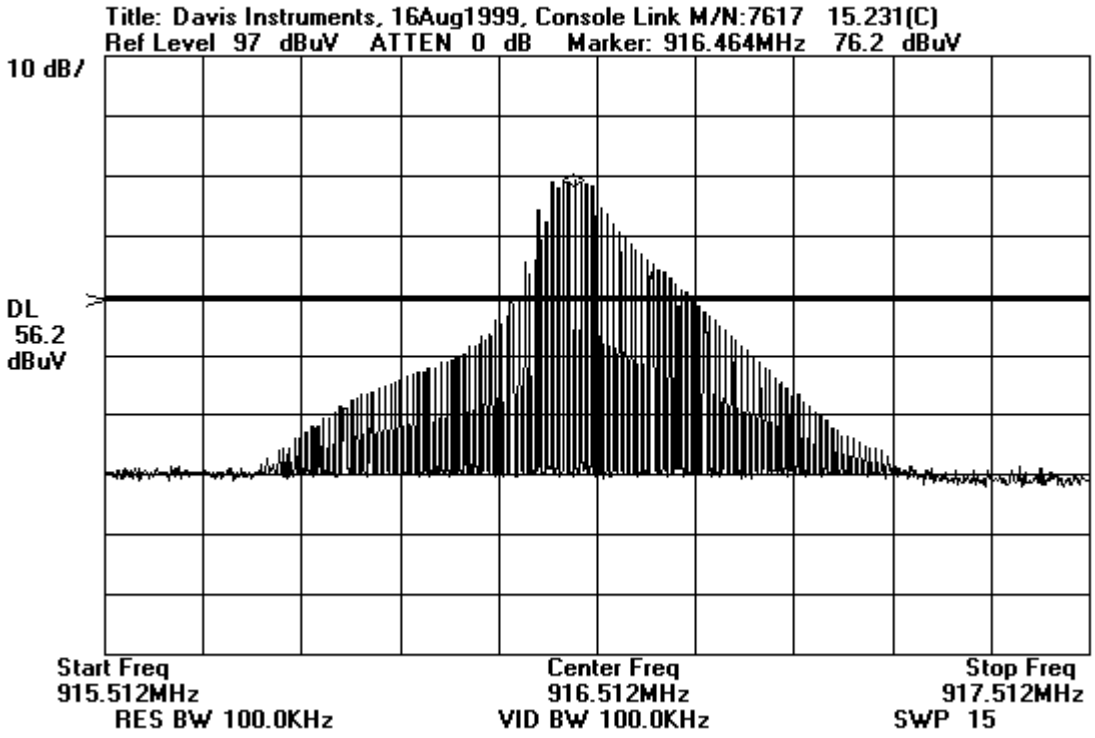
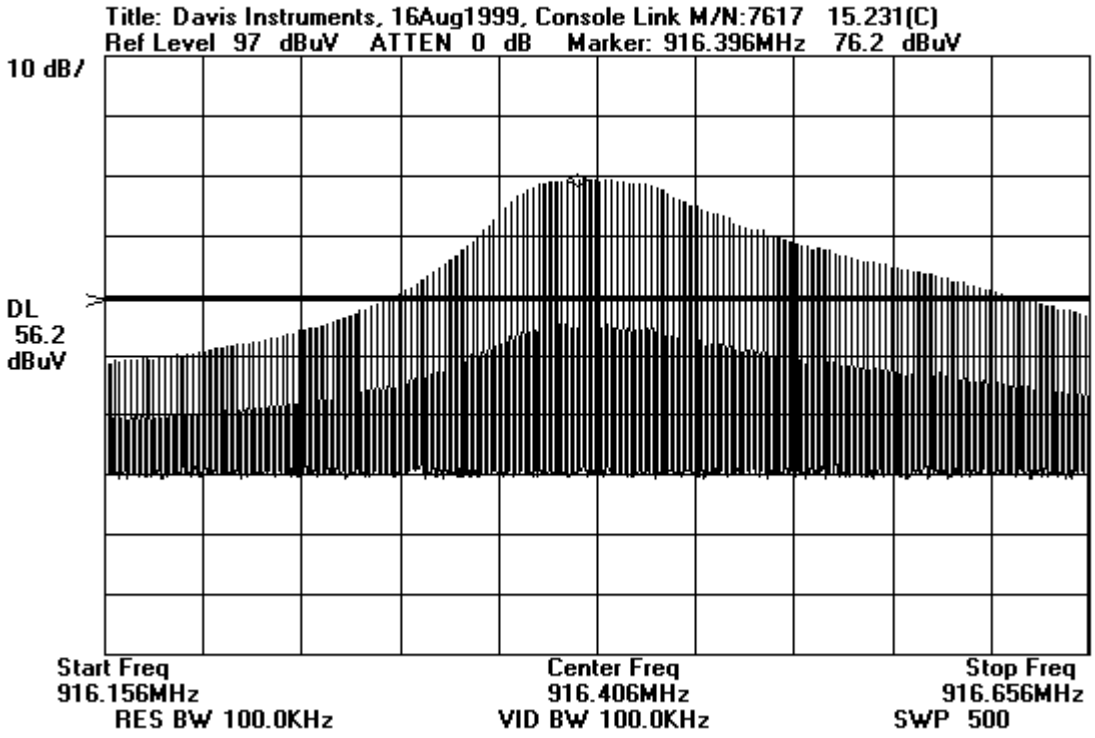


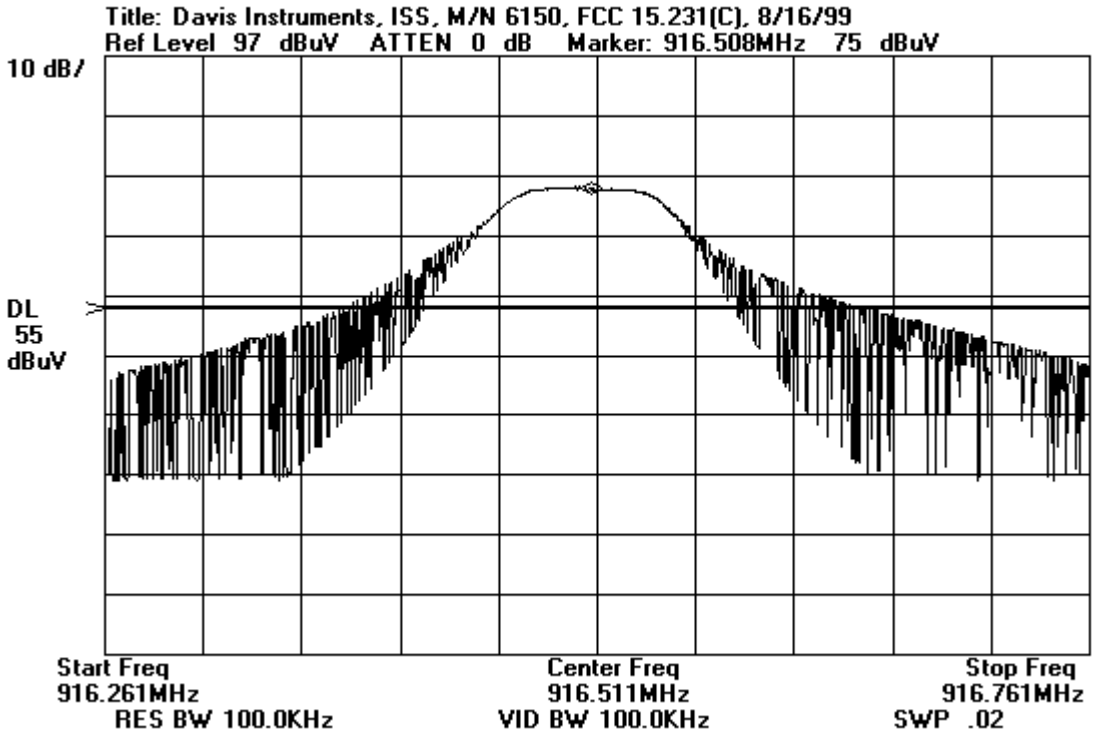
Occupied Bandwidth Plot



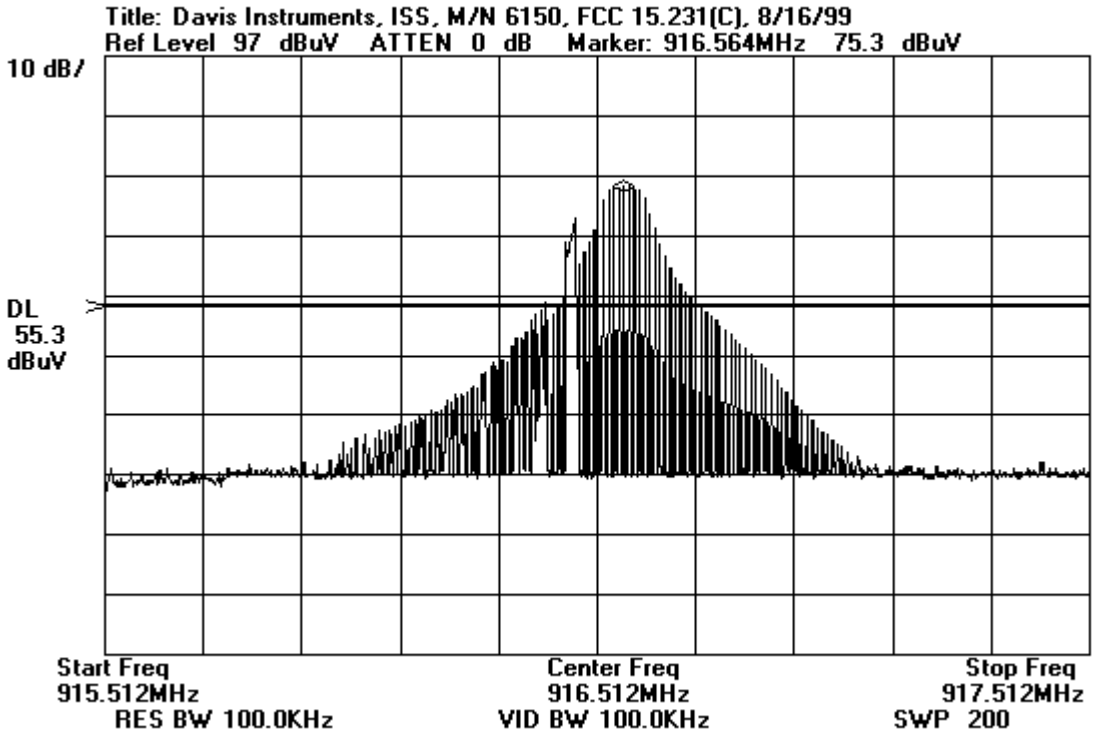
Occupied Bandwidth Plot



Occupied Bandwidth Plot



Occupied Bandwidth Plot



Test Location: CKC Laboratories, Inc. • 1653 Los Viboras Rd., Site A • Hollister, Ca 95023 • (831) 637-0485

Customer:	**Davis Instruments**	Date:	Aug-06-99
Specification:	**FCC15.209/15.231(e)**	Time:	16:17
Test Type:	**Maximized Emissions**	Sequence#:	2
Equipment:	**Weather Data Telemetry**		
Manufacturer:	Davis Instruments	Tested By:	Wes Norris
Model:	7617		
S/N:	Prototype		

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Weather Data Telemetry*	Davis Instruments	7617	Prototype

Support Devices:

Function	Manufacturer	Model #	S/N
Weather Console	Davis Instruments	7425	WC80921B67
PC Link	Davis Instruments	7862	LC90802A32
AC Adaptor	Ablex	7916	N/A

Test Conditions / Notes:

Testing to FCC Part 15 Subpart C, Section 15.209/15.231(e). The EUT is fully operational, receiving weather data from the Weather Console. The EUT is transmitting continuously, at full power, in CW Mode. The EUT is receiving its power from the Weather Console, which is powered from the AC Adaptor powered from a 115V/60Hz source.

Measurement Data: Sorted by Margin Test Distance: 3 Meters

#	Freq MHz	Rdng dBµV	Amp. dB	dB	Bicon dB	Cable dB	Dist dB	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar
1	60.072	56.4	-26.7		+8.4	+1.1	+0.0	39.2	40.0	-0.8	Vert
	Quasi Peak										
^	60.072	56.8	-26.7		+8.4	+1.1	+0.0	39.6	40.0	-0.4	Vert
3	48.580	52.4	-26.6		+11.5	+1.1	+0.0	38.4	40.0	-1.6	Vert
	Quasi Peak										
^	48.582	52.3	-26.6		+11.5	+1.1	+0.0	38.3	40.0	-1.7	Vert
5	59.038	54.9	-26.7		+8.6	+1.1	+0.0	37.9	40.0	-2.1	Vert
	Quasi Peak										
^	59.038	55.1	-26.7		+8.6	+1.1	+0.0	38.1	40.0	-1.9	Vert
7	58.539	54.6	-26.7		+8.7	+1.1	+0.0	37.7	40.0	-2.3	Vert
	Quasi Peak										
^	58.539	54.5	-26.7		+8.7	+1.1	+0.0	37.6	40.0	-2.4	Vert
9	59.566	54.4	-26.7		+8.5	+1.1	+0.0	37.3	40.0	-2.7	Vert
	Quasi Peak										
^	59.589	55.1	-26.7		+8.5	+1.1	+0.0	38.0	40.0	-2.0	Vert

11	32.300	48.4	-26.7	+14.1	+0.8	+0.0	36.6	40.0	-3.4	Vert
	Quasi Peak									
^	32.325	49.1	-26.7	+14.1	+0.8	+0.0	37.3	40.0	-2.7	Vert
13	58.000	53.3	-26.7	+8.8	+1.1	+0.0	36.5	40.0	-3.5	Vert
	Quasi Peak									
^	58.019	54.0	-26.7	+8.8	+1.1	+0.0	37.2	40.0	-2.8	Vert
15	57.470	52.6	-26.7	+8.9	+1.1	+0.0	35.9	40.0	-4.1	Vert
	Quasi Peak									
^	57.493	53.6	-26.7	+8.9	+1.1	+0.0	36.9	40.0	-3.1	Vert
17	70.070	53.9	-26.6	+7.1	+1.1	+0.0	35.5	40.0	-4.5	Vert
	Quasi Peak									
^	70.070	53.8	-26.6	+7.1	+1.1	+0.0	35.4	40.0	-4.6	Vert
19	56.969	51.6	-26.7	+9.0	+1.1	+0.0	35.0	40.0	-5.0	Vert
20	52.249	50.6	-26.6	+9.9	+1.1	+0.0	35.0	40.0	-5.0	Vert
21	55.918	51.3	-26.7	+9.2	+1.1	+0.0	34.9	40.0	-5.1	Vert
22	54.870	51.0	-26.7	+9.4	+1.1	+0.0	34.8	40.0	-5.2	Vert
23	51.198	50.1	-26.6	+10.1	+1.1	+0.0	34.7	40.0	-5.3	Vert
24	52.773	50.3	-26.6	+9.8	+1.1	+0.0	34.6	40.0	-5.4	Vert
25	50.675	49.7	-26.6	+10.3	+1.1	+0.0	34.5	40.0	-5.5	Vert
26	69.027	52.7	-26.6	+7.2	+1.1	+0.0	34.4	40.0	-5.6	Vert
27	48.034	48.0	-26.6	+12.0	+1.0	+0.0	34.4	40.0	-5.6	Vert
	Quasi Peak									
^	48.054	49.0	-26.6	+11.9	+1.0	+0.0	35.3	40.0	-4.7	Vert
29	55.375	50.6	-26.7	+9.3	+1.1	+0.0	34.3	40.0	-5.7	Vert
	Quasi Peak									
^	55.394	51.6	-26.7	+9.3	+1.1	+0.0	35.3	40.0	-4.7	Vert
31	67.978	52.5	-26.6	+7.3	+1.1	+0.0	34.3	40.0	-5.7	Vert
32	60.637	51.4	-26.7	+8.3	+1.1	+0.0	34.1	40.0	-5.9	Vert
33	67.457	52.1	-26.6	+7.4	+1.1	+0.0	34.0	40.0	-6.0	Vert
34	32.846	45.8	-26.7	+14.1	+0.8	+0.0	34.0	40.0	-6.0	Vert
	Quasi Peak									
^	32.848	48.4	-26.7	+14.1	+0.8	+0.0	36.6	40.0	-3.4	Vert
36	53.823	49.8	-26.6	+9.6	+1.1	+0.0	33.9	40.0	-6.1	Vert
37	53.297	49.5	-26.6	+9.7	+1.1	+0.0	33.7	40.0	-6.3	Vert

38	54.343	49.6	-26.6	+9.5	+1.1	+0.0	33.5	40.0	-6.5	Vert
39	56.447	50.0	-26.7	+9.1	+1.1	+0.0	33.5	40.0	-6.5	Vert
40	33.372	45.1	-26.7	+14.0	+0.8	+0.0	33.2	40.0	-6.8	Vert
41	31.780	44.7	-26.6	+14.2	+0.8	+0.0	33.1	40.0	-6.9	Vert
Quasi Peak										
^	31.798	46.0	-26.6	+14.1	+0.8	+0.0	34.3	40.0	-5.7	Vert
43	66.931	51.0	-26.6	+7.5	+1.1	+0.0	33.0	40.0	-7.0	Vert
44	68.503	51.1	-26.6	+7.3	+1.1	+0.0	32.9	40.0	-7.1	Vert
45	31.277	44.4	-26.6	+14.2	+0.8	+0.0	32.8	40.0	-7.2	Vert
46	69.553	50.5	-26.6	+7.2	+1.1	+0.0	32.2	40.0	-7.8	Vert
47	66.405	49.0	-26.6	+7.5	+1.1	+0.0	31.0	40.0	-9.0	Vert

Test Location: CKC Laboratories, Inc. • 1653 Los Viboras Rd., Site A • Hollister, Ca 95023 • (831) 637-0485

Customer:	**Davis Instruments**	Date:	Aug-09-99
Specification:	**15.209/15.231(e)**	Time:	14:33
Test Type:	**Maximized Emissions**	Sequence#:	2
Equipment:	**Weather Data Telemetry**		
Manufacturer:	Davis Instruments	Tested By:	Wes Norris
Model:	7617		
S/N:	Prototype		

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Weather Data Telemetry*	Davis Instruments	7617	Prototype

Support Devices:

Function	Manufacturer	Model #	S/N
Weather Console	Davis Instruments	7425	WC80921B67
PC Link	Davis Instruments	7862	LC90802A32
AC Adaptor	Ablex	7916	N/A

Test Conditions / Notes:

Testing to FCC Part 15 Subpart C, Section 15.209/15.231(e). The EUT is fully operational, receiving weather data from the Weather Console. The EUT is transmitting continuously, at full power, in CW Mode. The frequencies which are close to limit have the specification limit raised from 54dBuV to 74dBuV based on a 20dB correction factor for pulsed systems (noted as "P Factor" on data sheets) derived from the duty cycle of the transmitter. The on time of the transmitter in a 100ms period is measured. This on time divided by the 100ms period is the duty cycle. A 20Log(duty cycle) calculation is then performed and this factor (not to exceed 20dB) is then added to the limit. This method is specified in CFR 47 Section 15.35(c). The EUT is receiving its power from the Weather Console, which is powered from the AC Adaptor powered from a 115V/60Hz source.

Measurement Data: Sorted by Margin Test Distance: 3 Meters

#	Freq MHz	Rdng dBµV	Horn P Factor dB	Amp dB	Cable dB	Cable dB	Dist dB	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar
1	1833.000	73.9	+26.5 +0.0	-38.6	+0.3	+3.9	+0.0	66.0	74.0	-8.0	Horiz
2	3666.000	62.5	+32.4 -20.0	-38.9	+0.5	+5.8	+0.0	42.3	54.0	-11.7	Horiz
3	1833.000	66.8	+26.5 +0.0	-38.6	+0.3	+3.9	+0.0	58.9	74.0	-15.1	Vert
4	9165.000	47.8	+38.5 -20.0	-39.0	+0.6	+9.4	+0.0	37.3	54.0	-16.7	Vert
5	4582.500	57.1	+32.3 -20.0	-39.7	+0.6	+6.6	+0.0	36.9	54.0	-17.1	Horiz
6	9165.100	46.5	+38.5 -20.0	-39.0	+0.6	+9.4	+0.0	36.0	54.0	-18.0	Horiz
7	4582.500	55.9	+32.3 -20.0	-39.7	+0.6	+6.6	+0.0	35.7	54.0	-18.3	Vert
8	7332.000	49.0	+36.6 -20.0	-39.2	+0.3	+8.3	+0.0	35.0	54.0	-19.0	Vert

9	8248.500	47.2	+37.6 -20.0	-40.2	+0.8	+9.1	+0.0	34.5	54.0	-19.5	Horiz
10	8248.500	46.8	+37.6 -20.0	-40.2	+0.8	+9.1	+0.0	34.1	54.0	-19.9	Vert
11	5499.000	51.2	+34.9 +0.0	-39.9	+0.4	+7.3	+0.0	53.9	74.0	-20.1	Vert
12	7332.000	47.3	+36.6 -20.0	-39.2	+0.3	+8.3	+0.0	33.3	54.0	-20.7	Horiz
13	5499.000	50.5	+34.9 +0.0	-39.9	+0.4	+7.3	+0.0	53.2	74.0	-20.8	Horiz
14	3666.000	52.3	+32.4 -20.0	-38.9	+0.5	+5.8	+0.0	32.1	54.0	-21.9	Vert
15	6415.500	47.7	+35.4 +0.0	-40.3	+0.6	+7.9	+0.0	51.3	74.0	-22.7	Vert
16	6415.500	46.0	+35.4 +0.0	-40.3	+0.6	+7.9	+0.0	49.6	74.0	-24.4	Horiz
17	2749.500	52.0	+29.7 -20.0	-37.6	+0.4	+5.0	+0.0	29.5	54.0	-24.5	Horiz
18	2749.500	49.9	+29.7 -20.0	-37.6	+0.4	+5.0	+0.0	27.4	54.0	-26.6	Vert

Test Location: CKC Laboratories, Inc. • 1653 Los Viboras Rd., Site A • Hollister, Ca 95023 • (831) 637-0485

Customer:	**Davis Instruments**	Date:	Aug-16-99
Specification:	**FCC 15.207 COND**	Time:	09:44
Test Type:	**Conducted Emissions**	Sequence#:	2
Equipment:	**Weather Data Telemetry**		
Manufacturer:	Davis Instruments	Tested By:	Wes Norris
Model:	7617		
S/N:	Prototype		

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Weather Data Telemetry*	Davis Instruments	7617	Prototype

Support Devices:

Function	Manufacturer	Model #	S/N
Weather Console	Davis Instruments	7425	WC80921B67
PC Link	Davis Instruments	7862	LC90802A32
AC Adaptor	Ablex	7916	N/A

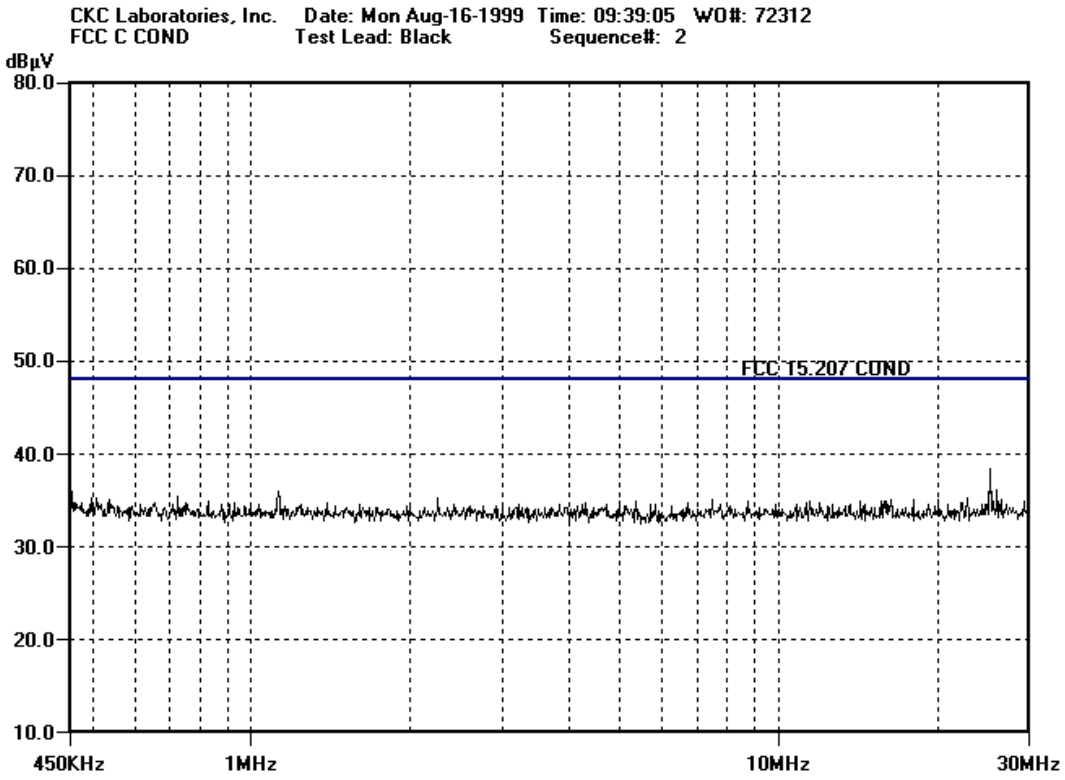
Test Conditions / Notes:

Testing to FCC Part 15 Subpart C, Section 15.207. The EUT is fully operational, receiving weather data from the Weather Console. The EUT is transmitting this data in 12.5 milli-second bursts each 2.5 seconds. The EUT is receiving its power from the Weather Console, which is powered from the AC Adaptor powered from a 115V/60Hz source.

Measurement Data: Sorted by Margin Test Lead: Black

#	Freq	Rdng dBµV	dB	dB	dB	dB	Dist dB	Corr dBµV	Spec dBµV	Margin dB	Polar
1	25.181M	38.5					+0.0	38.5	48.0	-9.5	Black
2	25.978M	36.1					+0.0	36.1	48.0	-11.9	Black
3	25.455M	36.0					+0.0	36.0	48.0	-12.0	Black
4	1.126M	36.0					+0.0	36.0	48.0	-12.0	Black
5	456.825k	36.0					+0.0	36.0	48.0	-12.0	Black
6	726.019k	35.4					+0.0	35.4	48.0	-12.6	Black
7	22.815M	35.2					+0.0	35.2	48.0	-12.8	Black
8	2.259M	35.2					+0.0	35.2	48.0	-12.8	Black
9	509.147k	35.2					+0.0	35.2	48.0	-12.8	Black
10	494.739k	35.2					+0.0	35.2	48.0	-12.8	Black

11	26.501M	35.1	+0.0	35.1	48.0	-12.9	Black
12	20.101M	35.1	+0.0	35.1	48.0	-12.9	Black
13	18.083M	35.1	+0.0	35.1	48.0	-12.9	Black
14	16.331M	35.1	+0.0	35.1	48.0	-12.9	Black
15	7.463M	35.1	+0.0	35.1	48.0	-12.9	Black
16	539.479k	35.1	+0.0	35.1	48.0	-12.9	Black
17	11.447M	35.0	+0.0	35.0	48.0	-13.0	Black
18	8.719M	35.0	+0.0	35.0	48.0	-13.0	Black
19	5.352M	35.0	+0.0	35.0	48.0	-13.0	Black
20	828.768k	35.0	+0.0	35.0	48.0	-13.0	Black


CKC Laboratories, Inc. Date: Mon Aug-16-1999 Time: 09:39:05 WO#: 72312
FCC C COND Test Lead: Black Sequence#: 2
dBµV
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
FCC 15.207 COND
450KHz
1MHz
10MHz
30MHz

Test Location: CKC Laboratories, Inc. • 1653 Los Viboras Rd., Site A • Hollister, Ca 95023 • (831) 637-0485

Customer:	**Davis Instruments**	Date:	Aug-16-99
Specification:	**FCC 15.207 COND**	Time:	09:51
Test Type:	**Conducted Emissions**	Sequence#:	3
Equipment:	**Weather Data Telemetry**		
Manufacturer:	Davis Instruments	Tested By:	Wes Norris
Model:	7617		
S/N:	Prototype		

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Weather Data Telemetry*	Davis Instruments	7617	Prototype

Support Devices:

Function	Manufacturer	Model #	S/N
Weather Console	Davis Instruments	7425	WC80921B67
PC Link	Davis Instruments	7862	LC90802A32

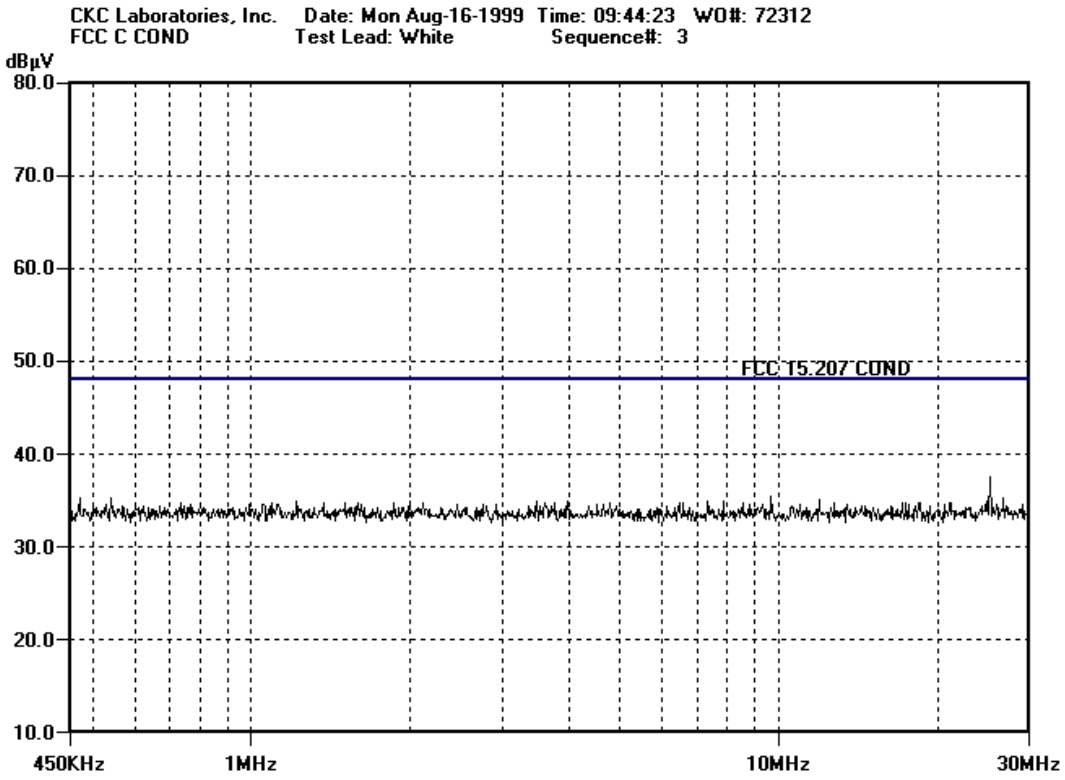
Test Conditions / Notes:

Testing to FCC Part 15 Subpart C, Section 15.207. The EUT is fully operational, receiving weather data from the Weather Console. The EUT is transmitting this data in 12.5 milli-second bursts each 2.5 seconds. The EUT is receiving its power from the Weather Console, which is powered from the AC Adaptor powered from a 115V/60Hz source.

Measurement Data: Sorted by Margin Test Lead: White

#	Freq	Rdng dBµV	dB	dB	dB	dB	Dist dB	Corr dBµV	Spec dBµV	Margin dB	Polar
1	25.194M	37.5					+0.0	37.5	48.0	-10.5	White
2	9.696M	35.5					+0.0	35.5	48.0	-12.5	White
3	471.991k	35.3					+0.0	35.3	48.0	-12.7	White
4	26.825M	35.2					+0.0	35.2	48.0	-12.8	White
5	540.237k	35.2					+0.0	35.2	48.0	-12.8	White
6	11.961M	35.1					+0.0	35.1	48.0	-12.9	White
7	7.358M	35.0					+0.0	35.0	48.0	-13.0	White
8	3.981M	35.0					+0.0	35.0	48.0	-13.0	White
9	3.484M	35.0					+0.0	35.0	48.0	-13.0	White
10	1.220M	35.0					+0.0	35.0	48.0	-13.0	White
11	25.455M	34.9					+0.0	34.9	48.0	-13.1	White

12	24.857M	34.9	+0.0	34.9	48.0	-13.1	White
13	7.864M	34.9	+0.0	34.9	48.0	-13.1	White
14	2.000M	34.9	+0.0	34.9	48.0	-13.1	White
15	6.625M	34.8	+0.0	34.8	48.0	-13.2	White
16	6.468M	34.8	+0.0	34.8	48.0	-13.2	White
17	4.791M	34.8	+0.0	34.8	48.0	-13.2	White
18	3.616M	34.8	+0.0	34.8	48.0	-13.2	White
19	2.114M	34.8	+0.0	34.8	48.0	-13.2	White
20	1.090M	34.8	+0.0	34.8	48.0	-13.2	White


CKC Laboratories, Inc. Date: Mon Aug-16-1999 Time: 09:44:23 WO#: 72312
FCC C COND Test Lead: White Sequence#: 3
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70.0
60.0
50.0
40.0
30.0
20.0
10.0
FCC T5.207 COND
450KHz
1MHz
10MHz
30MHz