



ESCORT MEMORY SYSTEMS TEST REPORT

FOR THE

PASS THRU SYSTEM, LRP2000-26

FCC PART 15 SUBPART C SECTIONS 15.207, 15.209 & 15.225 AND RSS 210

COMPLIANCE

DATE OF ISSUE: JUNE 24, 2003

PREPARED FOR:

Escort Memory Systems
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Scotts Valley, CA 95066

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Date of test: May 28 - June 17, 2003

Report No.: FC03-042

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ADMINISTRATIVE INFORMATION

DATE OF TEST: May 28 - June 17, 2003

DATE OF RECEIPT: May 28, 2003

PURPOSE OF TEST: To demonstrate the compliance of the Pass Thru System, LRP2000-26 with the requirements for FCC Part 15 Subpart C Sections 15.207, 15.209, 15.225 and RSS 210 devices.

TEST METHOD: ANSI C63.4 (1992) and RSS 212

MANUFACTURER: Escort Memory Systems
170 Technology Circle
Scotts Valley, CA 95066

REPRESENTATIVE: Russell Barber

TEST LOCATION: CKC Laboratories, Inc.
480 Los Viboras Road, Hollister, CA 95023
5473A Clouds Rest, Mariposa, CA 95338

SUMMARY OF RESULTS

As received, the Escort Memory Systems Pass Thru System, LRP2000-26 was found to be fully compliant with the following standards and specifications:

United States	Canada	
15.203	5.5	Antenna Requirements
NA	6.2.2(d)	Field Strength
15.207	6.6	AC Mains Conducted Emissions
15.209	6.2.1	General Field Strength Requirements (RSS 210 Table 3)
FCC 15.225	RSS 210	
15.225(a)	6.2.2(e)	Field Strength
15.225(b)	6.2.2(e)	Radiated Emissions
15.225(b)	6.2.2(e)	Bandedge Compliance
15.225(c)	6.2.2(e)	Frequency Tolerance
NA	6.2.2(e)	Emissions Mask
ANSI C63.4 (1992) method	RSS 212 method	
		Industry of Canada File No. IC 3171-D Industry of Canada File No. IC 3171-B Industry of Canada File No. IC 3082-B

CONDITIONS FOR COMPLIANCE

Note 1: Added Fair Rite ferrite P/N- 0443164151 to ethernet cable. Note 2: Shielded filtered power cord in use. Note 3: Ferrites added to both ends of DC power cord.

APPROVALS

QUALITY ASSURANCE:



Steve Behm, Director of Engineering Services and Quality Assurance



Joyce Walker, Quality Assurance Administrative Manager



Mike Wilkinson, Lab Manager

TEST PERSONNEL:



Randy Clark, EMC Engineer



Matthew Pettersen, EMC Test Engineer



Hosai Omarkhil, EMC Engineer

FCC 15.31(e) Voltage Variations

Antenna	FREQUENCY MHz	CORRECTED READING dBμV/m 85%	CORRECTED READING dBμV/m 100%	CORRECTED READING dBμV/m 115%	SPEC LIMIT dBμV/m
LRP-PT-ANT03	13.56	71.8	71.8	72.4	80.0
LRP-PT-ANT06	13.56	78.4	78.4	79.0	80.0

Test Method: ANSI C63.4 (1992)
Spec Limit: FCC Part 15 Subpart C Section 15.31(e)
Test Distance: 30 meters

FCC 15.31(m) Number Of Channels

This device operates on a single channel.

FCC 15.33(a) Frequency Ranges Tested

15.207 Conducted: 150 kHz – 30 MHz

15.209 Radiated: 30 MHz – 1 GHz

15.225 Radiated: 9 kHz – 30 MHz

FCC SECTION 15.35: 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

FCC 15.203 Antenna Requirements

This device must be professionally installed to comply with Section 15.203 of the FCC rules.

FCC 15.205 Restricted Bands

The fundamental operating frequency lies outside the restricted bands and therefore complies with the requirements of Section 15.205 of the FCC rules. Any spurious emission coming from the EUT was investigated to determine if any portion lies inside the restricted band. If any portion of a spurious emissions signal was found to be within a restricted band, investigation was performed to ensure compliance with Section 15.209.

Eut Operating Frequency

The EUT was operating at 13.56 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%.

EQUIPMENT UNDER TEST (EUT) DESCRIPTION

The EUT tested by CKC Laboratories was a production unit.

EQUIPMENT UNDER TEST

The Pass Thru System, LRP2000-26 consists of:

FCC: Pending

Controller Box

Manuf: Escort Memory Systems

Model: LRP-PT-CTL20

Serial: 03D1879

Reader/Pass Thru Antenna

Manuf: Escort Memory Systems

Model: LRP-PT-ANT03

Serial: 03D1494

Power Supply

Manuf: Escort Memory Systems

Model: 00-1142

Serial: 03D1880

Reader/Pass Thru Antenna

Manuf: Escort Memory Systems

Model: LRP-PT-ANT06

Serial: 22N1697

PERIPHERAL DEVICES

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

Laptop PC

Manuf: IBM

Model: Thinkpad 2645

Serial: Z9M8N100301TT326

RS422/RS232 Converter

Manuf: B&B Electronics

Model: 485COR

Serial: NA

REPORT OF MEASUREMENTS

The following tables report the worst case emissions levels recorded during the tests performed on the EUT. All readings taken were peak readings unless otherwise stated. The data sheets from which the emissions tables were compiled are contained in Appendix C.

Table 1: FCC 15.207 Six Highest Conducted Emission Levels

FREQUENCY MHz	METER READING dB μ V	CORRECTION FACTORS				CORRECTED READING dB μ V	SPEC LIMIT dB μ V	MARGIN dB	NOTES
		Lisn dB		Cable dB					
0.150000	49.7	0.1		0.2		50.0	56.0	-6.0	B-3
0.150727	49.0	0.0		0.2		49.2	56.0	-6.8	W-3
0.151454	49.0	0.1		0.2		49.3	55.9	-6.6	B-3
1.115168	40.1	0.1		0.3		40.5	46.0	-5.5	W-3
1.119421	38.4	0.1		0.3		38.8	46.0	-7.2	B-6
1.519203	38.1	0.1		0.2		38.4	46.0	-7.6	W-3

Test Method: ANSI C63.4 (1992)
Spec Limit: FCC Part 15 Subpart C Section 15.207

NOTES:
B = Black Lead
W = White Lead
3 = LRP-PT-ANT03
6 = LRP-PT-ANT06

COMMENTS: The loop antenna is placed at the center of the turntable. The transmitter and support equipment are placed behind the loop on top of the wooden table. Note 1: Standard Mode. Note 2: Added Fair Rite ferrite P/N- 0443164151 to ethernet cable. Note 3: Shielded filtered power cord in use. Note 4: Ferrites added to both ends of DC power cord. Conducted emissions 150kHz - 30MHz. **LRP-PT-ANT03** - Half High antenna loop coil area is 0.406m². **LRP-PT-ANT06** - Two High Antenna loop coil area is

Table 2: FCC 15.209 Six Highest Radiated Emission Levels

FREQUENCY MHz	METER READING dB μ V	CORRECTION FACTORS				CORRECTED READING dB μ V/m	SPEC LIMIT dB μ V/m	MARGIN dB	NOTES
		Ant dB	Amp dB	Cable dB	Dist dB				
40.003	38.7	12.5	-26.7	1.9	10.0	36.4	40.0	-3.6	V-3
81.374	43.8	7.7	-26.6	2.6	10.0	37.5	40.0	-2.5	V-3
144.001	43.2	11.2	-26.4	3.5	10.0	41.5	43.5	-2.0	H-6
149.159	41.9	10.9	-26.3	3.6	10.0	40.1	43.5	-3.4	H-3
300.000	40.8	13.0	-25.9	5.5	10.0	43.4	46.0	-2.6	HQ-6
300.043	39.3	13.0	-25.9	5.5	10.0	41.9	46.0	-4.1	V-3

Test Method: ANSI C63.4 (1992)
Spec Limit: FCC Part 15 Subpart C Section 15.209
Test Distance: 10 Meters

NOTES:
H = Horizontal Polarization
V = Vertical Polarization
Q = Quasi Peak Reading
3 = LRP-PT-ANT03
6 = LRP-PT-ANT06

COMMENTS: The loop antenna is placed at the center of the turntable. The transmitter and support equipment are placed behind the loop on top of the wooden table. Note 1: Standard Mode Note 2: Added Fair Rite ferrite P/N- 0443164151 to ethernet cable. Note 3: Shielded filtered power cord in use. Note 4: Ferrites added to both ends of DC power cord. Radiated emissions 30MHz - 1GHz. **LRP-PT-ANT03** - Half High antenna loop coil area is 0.406m². **LRP-PT-ANT06** - Two High Antenna loop coil area is 0.812m².

Table 3: FCC 15.225(a) Fundamental Emission Levels

FREQUENCY MHz	METER READING dB μ V	CORRECTION FACTORS				CORRECTED READING dB μ V/m	SPEC LIMIT dB μ V/m	MARGIN dB	NOTES
		Ant dB	Amp dB	Cable dB	Dist dB				
13.560	68.3	8.9		1.2		78.4	80.0	-1.6	V-6
13.560	59.2	8.9		1.2		69.3	80.0	-10.7	H-3
13.560	61.7	8.9		1.2		71.8	80.0	-8.2	V-3
13.560	62.3	8.9		1.2		72.4	80.0	-7.6	H-6

Test Method: ANSI C63.4 (1992)
Spec Limit: FCC Part 15 Subpart C Section 15.225(a)
Test Distance: 30 Meters

NOTES:
H = Horizontal Polarization
V = Vertical Polarization
3 = LRP-PT-ANT03
6 = LRP-PT-ANT06

COMMENTS: The loop antenna is placed at the center of the turntable. The transmitter and support equipment are placed behind the loop on top of the wooden table. Note 1: Standard Mode Note 2: Added Fair Rite ferrite P/N- 0443164151 to ethernet cable. Note 3: Shielded filtered power cord in use. Note 4: Ferrites added to both ends of DC power cord. Frequency Range Investigated: Fundamental, 13.56 MHz. **LRP-PT-ANT03** - Half High antenna loop coil area is 0.406m². **LRP-PT-ANT06** - Two High Antenna loop coil area is 0.812m².

Table 4: FCC 15.225(b) Six Highest Radiated Emission Levels

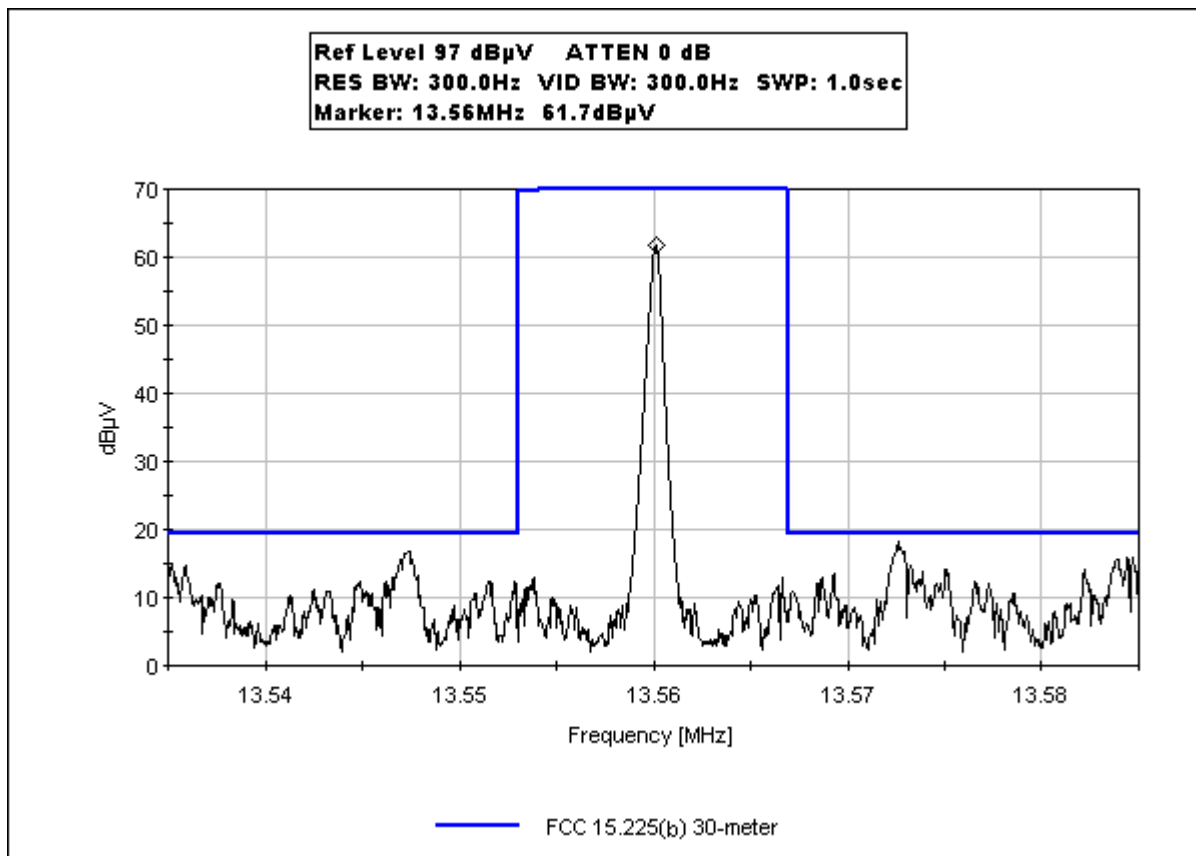
FREQUENCY MHz	METER READING dB μ V	CORRECTION FACTORS				CORRECTED READING dB μ V/m	SPEC LIMIT dB μ V/m	MARGIN dB	NOTES
		Ant dB	Amp dB	Cable dB	Dist dB				
16.002	12.6	8.8		1.3		22.7	29.5	-6.8	V-6
13.572	16.4	8.9		1.2		26.5	29.5	-3.0	H-3
13.573	18.4	8.9		1.2		28.5	29.5	-1.0	H-6
27.121	18.4	6.5		1.9		26.8	29.5	-2.7	V-6
27.124	15.1	6.5		1.9		23.5	29.5	-6.0	V-3
27.131	16.3	6.5		1.9		24.7	29.5	-4.8	V-6

Test Method: ANSI C63.4 (1992)
Spec Limit: FCC Part 15 Subpart C Section 15.225(b)
Test Distance: 30 Meters

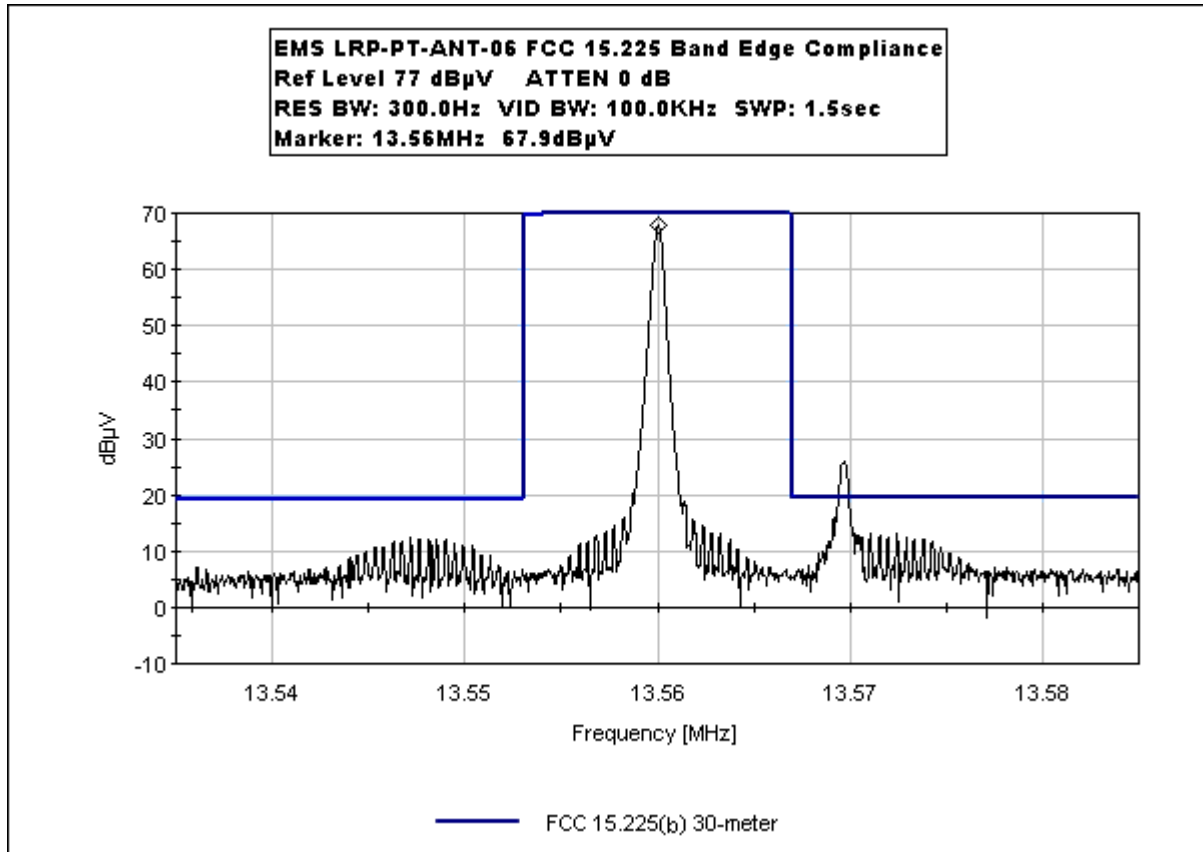
NOTES:
H = Horizontal Polarization
V = Vertical Polarization
3 = LRP-PT-ANT03
6 = LRP-PT-ANT06

COMMENTS: The loop antenna is placed at the center of the turntable. The transmitter and support equipment are placed behind the loop on top of the wooden table. Note 1: Standard Mode Note 2: Added Fair Rite ferrite P/N- 0443164151 to ethernet cable. Note 3: Shielded filtered power cord in use. Note 4: Ferrites added to both ends of DC power cord. Frequency Range Investigated: Spurious Measurements 9kHz - 30MHz. **LRP-PT-ANT03** - Half High antenna loop coil area is 0.406m². **LRP-PT-ANT06** - Two High Antenna loop coil area is 0.812m².

FCC 15.225(b) BANDEDGE - LRP-PT-ANT03



FCC 15.225(b) BANDEDGE - LRP-PT-ANT06



FCC 15.225(c) FREQUENCY STABILITY

Customer: Escort Memory Systems

WO#: 80506

Date: 13-Jun-03

Test Engineer: Randal Clark

Device Model #: LRP-PT-ANT0x

Operating Voltage: 28 VDC

Frequency Limit: 0.01 %

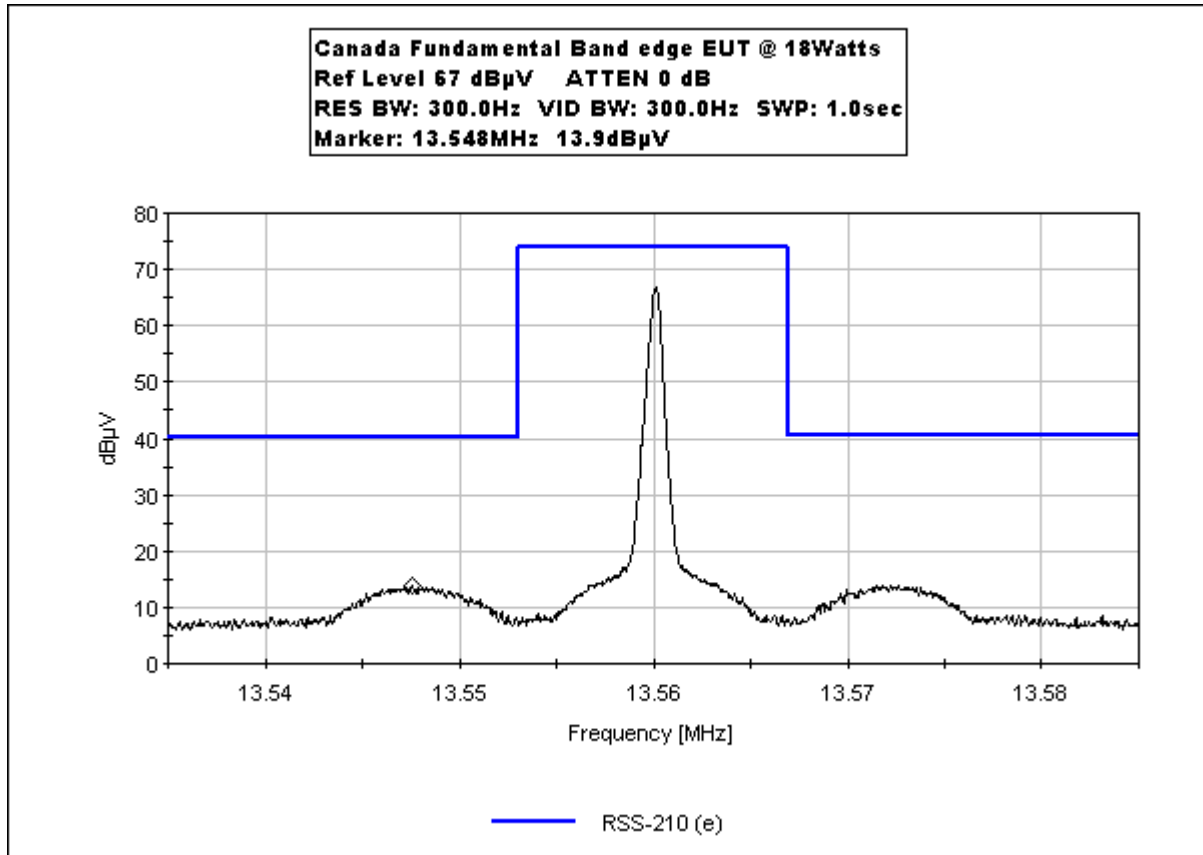
Temperature Variations

		Channel 1 (MHz)	Dev. (MHz)
Channel Frequency:		13.56	
Temp (°C)	Voltage		
-30	28	13.560017	0.00002
-20	28	13.560014	0.00001
-10	28	13.560015	0.00001
0	28	13.560002	0.00000
10	28	13.560000	0.00000
20	28	13.560000	0.00000
30	28	13.559992	0.00001
40	28	13.569996	0.01000
50	28	13.559995	0.00000

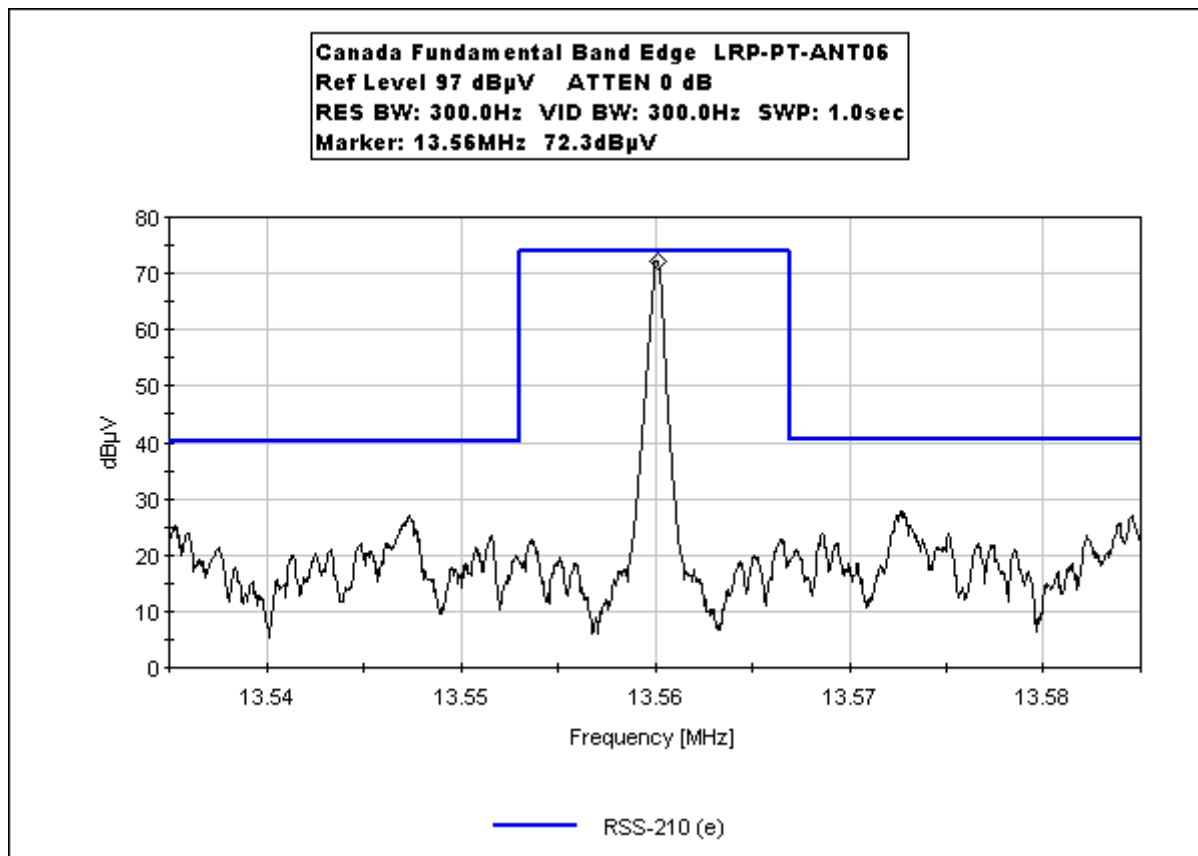
Voltage Variations (±15%)

20	23.8	13.56000	0.00000
20	28	13.56000	0.00000
20	32.2	13.56000	0.00000
Max Deviation (MHz)			0.01000
Max Deviation (%)			0.00074
			PASS

RSS 210 6.2.2(e) EMISSIONS MASK - LRP-PT-ANT03



RSS 210 6.2.2(e) EMISSIONS MASK - LRP-PT-ANT06



MEASUREMENT UNCERTAINTY

TEST	HIGHEST UNCERTAINTY
Radiated Emissions	+/- 2.94 dB
Conducted Emissions	+/- 1.56 dB

Note: Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k=2. Statements of compliance are based on the nominal values only.

EUT SETUP

The equipment under test (EUT) was set up in a manner that represented its normal use, as shown in the photographs in Appendix A. Any special conditions required for the EUT to operate normally are identified in the comments that accompany the emissions tables. The corrected data was then compared to the applicable emission limits to determine compliance.

The cables were routed consistent with the typical application by varying the configuration of the test sample. Interface cables were connected to the available I/O ports of the test unit. The effect of varying the position of the cables was investigated to find the configuration that produced maximum emissions. I/O cables were of the type and length specified in the individual requirements. The length of cable that produced maximum emissions was selected.

The radiated and conducted emissions data of the EUT 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 Table A.

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

CORRECTION FACTORS

The basic spectrum analyzer reading was converted using correction factors as shown in the highest emissions readings in the tables. For radiated emissions in dB μ V/m, the spectrum analyzer reading in dB μ V was corrected by using the following formula in Table A. This reading was then compared to the applicable specification limit to determine compliance.

TABLE A: SAMPLE CALCULATIONS		
	Meter reading	(dB μ V)
+	Antenna Factor	(dB)
+	Cable Loss	(dB)
-	Distance Correction	(dB)
-	Preamplifier Gain	(dB)
=	Corrected Reading	(dB μ V/m)

TEST INSTRUMENTATION AND ANALYZER SETTINGS

The test instrumentation and equipment listed in Appendix B were used to collect both the radiated and conducted emissions data. For radiated measurements from 9 kHz to 30 MHz, the magnetic loop antenna was used. For frequencies from 30 to 1000 MHz, the biconilog antenna was used. Conducted emissions tests required the use of the FCC type LISNs.

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.

SPECTRUM ANALYZER DETECTOR FUNCTIONS

The notes that accompany the measurements contained in the Tables 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.

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

For certain frequencies, 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.

EUT TESTING

Mains Conducted Emissions

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 was 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.

The LISNs used were 50 μ H/+50 ohms. Above 150 kHz, a 0.15 μ F series capacitor was added in-line prior to connecting the analyzer to restore the proper impedance for the range. A 30 to 50 second sweep time was used for automated measurements in the frequency bands of 150 kHz to 500 kHz, and 500 kHz to 30 MHz. All readings within 20 dB of the limit were recorded, and those within 6 dB of the limit were examined with additional measurements using a slower sweep time.

Radiated Emissions

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.

During the preliminary radiated scan, the EUT was powered up and operating in its defined FCC test mode. For radiated measurements from 9 kHz to 30 MHz, the magnetic loop antenna was used. The frequency range of 30 MHz to 1000 MHz was scanned with the biconilog antenna located about 1.5 meter above the ground plane in the vertical polarity. During this scan, the turntable was rotated and all peaks at or near the limit were recorded. A scan of the FM band from 88 to 110 MHz was then made using a reduced resolution bandwidth and frequency span. The biconilog antenna was changed to the horizontal polarity and the above steps were repeated. 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.

A thorough scan of all frequencies was made manually using a small frequency span, rotating the turntable as needed. The test engineer maximized the readings with respect to the table rotation, antenna height, and configuration of EUT. Maximizing of the EUT was achieved by monitoring the spectrum analyzer on a closed circuit television monitor.

APPENDIX A

TEST SETUP DIAGRAM AND PHOTOGRAPHS

PHOTOGRAPH SHOWING MAINS CONDUCTED EMISSIONS



Mains Conducted Emissions - Front View - LRP-PT-ANT03

PHOTOGRAPH SHOWING MAINS CONDUCTED EMISSIONS



Mains Conducted Emissions - Side View - LRP-PT-ANT03

PHOTOGRAPH SHOWING MAINS CONDUCTED EMISSIONS



Mains Conducted Emissions - Back View - LRP-PT-ANT03

PHOTOGRAPH SHOWING MAINS CONDUCTED EMISSIONS



Mains Conducted Emissions - Front View - LRP-PT-ANT06

PHOTOGRAPH SHOWING MAINS CONDUCTED EMISSIONS



Mains Conducted Emissions - Side View - LRP-PT-ANT06

PHOTOGRAPH SHOWING MAINS CONDUCTED EMISSIONS



Mains Conducted Emissions - Back View - LRP-PT-ANT06

PHOTOGRAPH SHOWING RADIATED EMISSIONS



Radiated Emissions - Front View - LRP-PT-ANT03

PHOTOGRAPH SHOWING RADIATED EMISSIONS



Radiated Emissions - Side View - LRP-PT-ANT03

PHOTOGRAPH SHOWING RADIATED EMISSIONS



Radiated Emissions - Back View - LRP-PT-ANT03

PHOTOGRAPH SHOWING RADIATED EMISSIONS



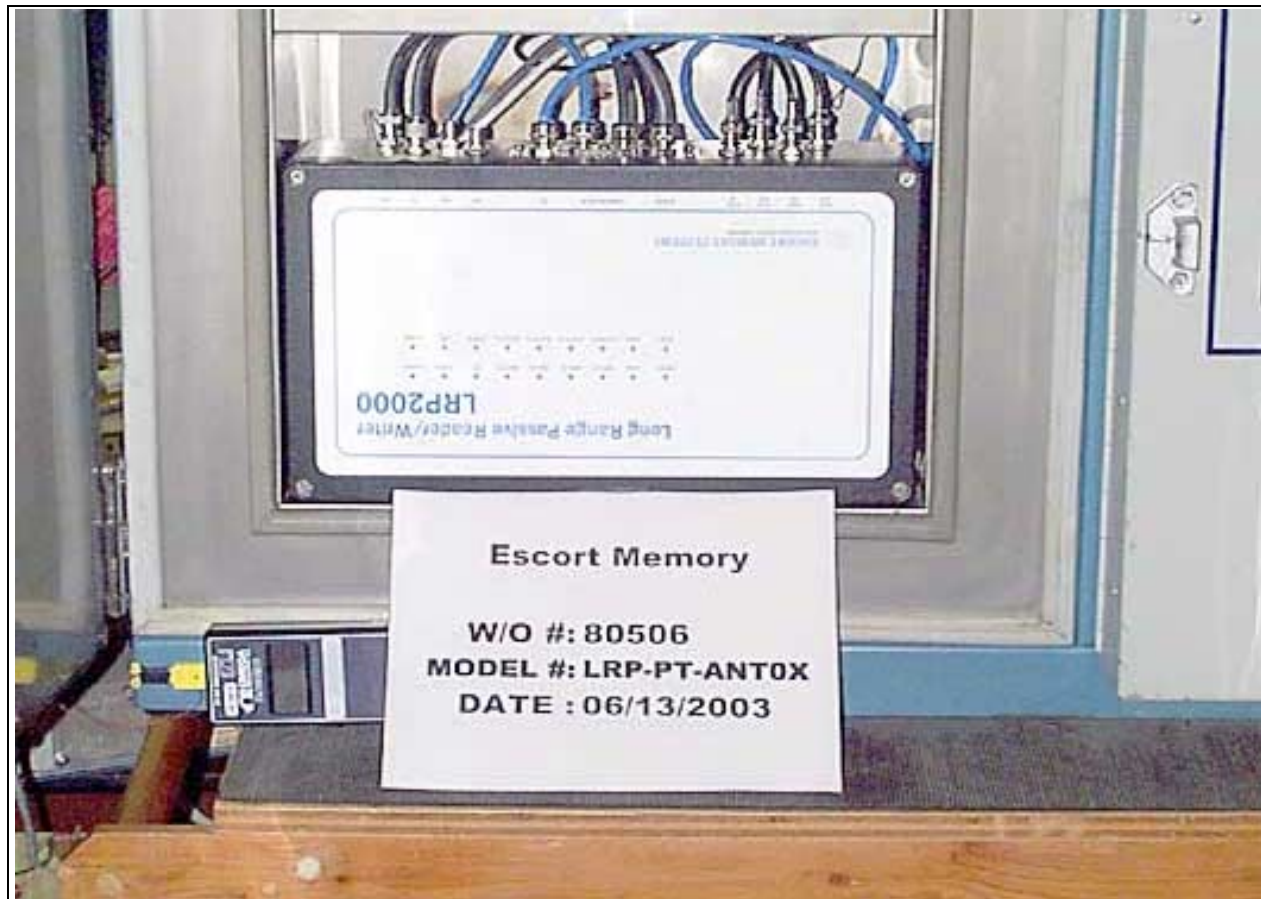
Radiated Emissions - Front View - LRP-PT-ANT06

PHOTOGRAPH SHOWING RADIATED EMISSIONS



Radiated Emissions - Side View - LRP-PT-ANT06

PHOTOGRAPH SHOWING TEMPERATURE TESTING



APPENDIX B

TEST EQUIPMENT LIST

FCC 15.207

Function	S/N	Calibration Date	Cal Due Date	Asset #
S.A. Display HP 85662A	2403A06676	10/08/2002	10/08/2003	684
S.A. RF Section HP 8568B	2413A00208	10/08/2002	10/08/2003	685
QP Adapter HP 85650A	2043A00188	10/08/2002	10/08/2003	1508
Cable, Cond + .12uF cap HD	cond_cbl_hd_02	11/11/2002	11/11/2003	0
LISN, Solar 927109	9252-50-R-24-BNC	09/23/2002	09/23/2003	612

FCC 15.209

Function	S/N	Calibration Date	Cal Due Date	Asset #
S.A. Display HP 85662A	2403A06676	10/08/2002	10/08/2003	684
S.A. RF Section HP 8568B	2413A00208	10/08/2002	10/08/2003	685
QP Adapter HP 85650A	2043A00188	10/08/2002	10/08/2003	1508
Cable, Rad., Site D 3M or 10M	rad_cab_10M_01_hd	06/24/2002	06/24/2003	0
Preamplifier, HP-8447D	2944A08285	03/05/2003	03/05/2004	502
Ant., Bilog, Chase CBL6111C	2451	10/04/2002	10/04/2003	1995

FCC 15.225(a) & (b)

Function	S/N	Calibration Date	Cal Due Date	Asset #
S.A. Display HP 85662A	2403A06676	10/08/2002	10/08/2003	684
S.A. RF Section HP 8568B	2413A00208	10/08/2002	10/08/2003	685
QP Adapter HP 85650A	2043A00188	10/08/2002	10/08/2003	1508
Cable, Rad., Site D 3M or 10M	rad_cab_10M_01_hd	06/24/2002	06/24/2003	0
Preamplifier, HP-8447D	2944A08285	03/05/2003	03/05/2004	502
Ant., Bilog, Chase CBL6111C	2451	10/04/2002	10/04/2003	1995

APPENDIX C:
MEASUREMENT DATA SHEETS

Test Location: CKC Laboratories, Inc. • 480 Las Viboras Road, Site D • Hollister, CA 95023 • 831-637-8176

Customer: **Escort Memory Systems**
 Specification: **FCC 15.207 COND [AVE]**
 Work Order #: **80506**
 Test Type: **Conducted Emissions**
 Equipment: **Reader/Pass Thru Antenna**
 Manufacturer: Escort Memory Systems
 Model: LRP-PT-ANT03
 S/N: 03D1494

Date: 06/20/2003
 Time: 14:40:46
 Sequence#: 11
 Tested By: Randal Clark
 120V 60Hz

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Controller Box	Escort Memory Systems	LRP-PT-CTL20	03D1879
Reader/Pass Thru Antenna*	Escort Memory Systems	LRP-PT-ANT03	03D1494
Power Supply	Escort Memory Systems	00-1142	03D1880

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop PC	IBM	Thinkpad 2645	Z9M8N100301TT326
RS422/RS232 Converter	B&B Electronics	485COR	none

Test Conditions / Notes:

The loop antenna is placed at the center of the turntable. The transmitter and support equipment are placed behind the loop on top of the wooden table. Half High antenna loop coil area is 0.406m². Note 1: Standard Mode. Note 2: Added Fair Rite ferrite P/N- 0443164151 to ethernet cable. Note 3: Shielded filtered power cord in use. Note 4: Ferrites added to both ends of DC power cord. Conducted emissions 150kHz - 30MHz.

Transducer Legend:

T1=Site D Conducted cable with .12uF cap	T2=LISN loss, Black, a/n 00612, Solar 9252
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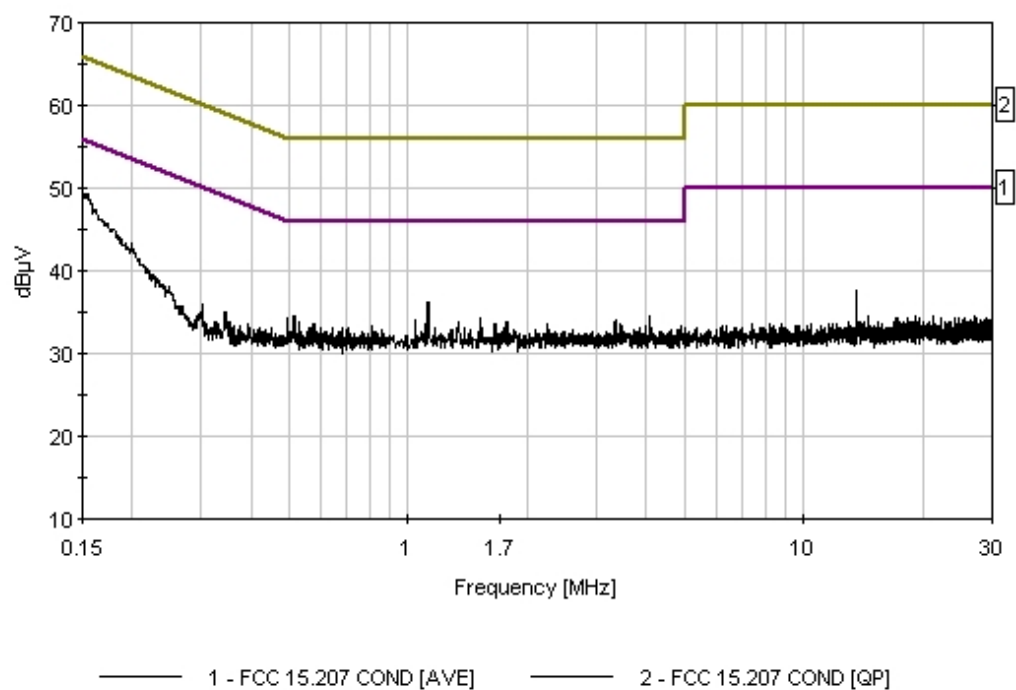
Measurement Data:

Reading listed by margin.

Test Lead: Black

#	Freq MHz	Rdng dBμV	T1 dB	T2 dB		Dist dB	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	150.000k	49.7	+0.2	+0.1		+0.0	50.0	56.0	-6.0	Black
2	151.454k	49.0	+0.2	+0.1		+0.0	49.3	55.9	-6.6	Black
3	1.119M	35.9	+0.3	+0.1		+0.0	36.3	46.0	-9.7	Black
4	13.562M	36.7	+0.8	+0.2		+0.0	37.7	50.0	-12.3	Black
5	14.616M	33.4	+0.9	+0.2		+0.0	34.5	50.0	-15.5	Black
6	27.013M	33.0	+1.3	+0.2		+0.0	34.5	50.0	-15.5	Black
7	312.650k	33.8	+0.2	+0.1		+0.0	34.1	50.2	-16.1	Black

CKC Laboratories, Inc. Date: 06/20/2003 Time: 14:40:46 Escort Memory Systems WVO#: 80506
 FCC 15.207 COND [AVE] Test Lead: Black 120V 60Hz Sequence#: 11



Test Location: CKC Laboratories, Inc. • 480 Las Viboras Road, Site D • Hollister, CA 95023 • 831-637-8176

Customer: **Escort Memory Systems**
 Specification: **FCC 15.207 COND [AVE]**
 Work Order #: **80506**
 Test Type: **Conducted Emissions**
 Equipment: **Reader/Pass Thru Antenna**
 Manufacturer: Escort Memory Systems
 Model: LRP-PT-ANT03
 S/N: 03D1494

Date: 05/29/2003
 Time: 2:43:19 PM
 Sequence#: 12
 Tested By: Randal Clark
 120V 60Hz

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Controller Box	Escort Memory Systems	LRP-PT-CTL20	03D1879
Reader/Pass Thru Antenna*	Escort Memory Systems	LRP-PT-ANT03	03D1494
Power Supply	Escort Memory Systems	00-1142	03D1880

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop PC	IBM	Thinkpad 2645	Z9M8N100301TT326
RS422/RS232 Converter	B&B Electronics	485COR	none

Test Conditions / Notes:

The loop antenna is placed at the center of the turntable. The transmitter and support equipment are placed behind the loop on top of the wooden table. Half High antenna loop coil area is 0.406m². Note 1: Standard Mode. Note 2: Added Fair Rite ferrite P/N- 0443164151 to ethernet cable. Note 3: Shielded filtered power cord in use. Note 4: Ferrites added to both ends of DC power cord. Conducted emissions 150kHz - 30MHz.

Transducer Legend:

T1=Site D Conducted cable with .12uF cap	T2=LISN loss, White, a/n 00612, Solar 9252
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Measurement Data:

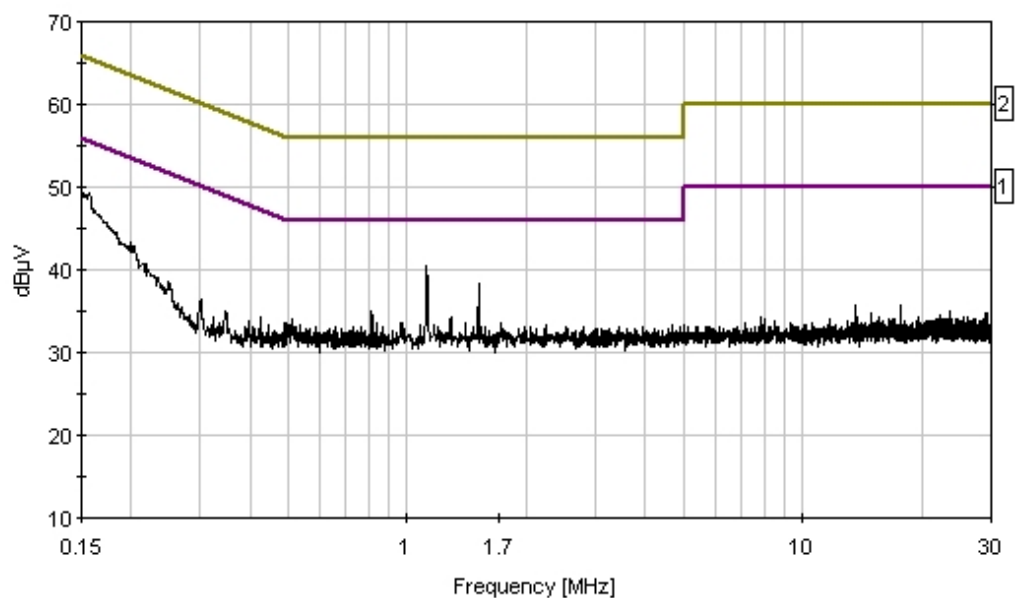
Reading listed by margin.

Test Lead: White

#	Freq MHz	Rdng dBμV	T1 dB	T2 dB		Dist dB	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	1.115M	40.1	+0.3	+0.1		+0.0	40.5	46.0	-5.5	White
2	150.727k	49.0	+0.2	+0.0		+0.0	49.2	56.0	-6.8	White
3	1.519M	38.1	+0.2	+0.1		+0.0	38.4	46.0	-7.6	White
4	1.290M	34.0	+0.2	+0.1		+0.0	34.3	46.0	-11.7	White
5	301.258k	36.1	+0.2	+0.1		+0.0	36.4	50.2	-13.8	White
6	13.562M	34.5	+0.8	+0.3		+0.0	35.6	50.0	-14.4	White
7	17.616M	34.5	+0.9	+0.2		+0.0	35.6	50.0	-14.4	White

8	23.470M	33.6	+1.2	+0.2	+0.0	35.0	50.0	-15.0	White
9	14.932M	33.6	+0.9	+0.3	+0.0	34.8	50.0	-15.2	White
10	22.265M	33.2	+1.1	+0.2	+0.0	34.5	50.0	-15.5	White

CKC Laboratories, Inc. Date: 05/29/2003 Time: 2:43:19 PM Escort Memory Systems W/O#: 80506
FCC 15.207 COND [AVE] Test Lead: White 120V 60Hz Sequence#: 12



—— 1 - FCC 15.207 COND [AVE] —— 2 - FCC 15.207 COND [QP]

Test Location: CKC Laboratories, Inc. • 480 Las Viboras Road, Site D • Hollister, CA 95023 • 831-637-8176

Customer: **Escort Memory Systems**
 Specification: **FCC 15.207 COND [AVE]**
 Work Order #: **80506**
 Test Type: **Conducted Emissions**
 Equipment: **Reader/Pass Thru Antenna**
 Manufacturer: Escort Memory Systems
 Model: LRP-PT-ANT06
 S/N: 02N1697

Date: 05/29/2003
 Time: 2:51:05 PM
 Sequence#: 13
 Tested By: Randal Clark
 120V 60Hz

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Controller Box	Escort Memory Systems	LRP-PT-CTL20	03D1879
Power Supply	Escort Memory Systems	00-1142	03D1880
Reader/Pass Thru Antenna*	Escort Memory Systems	LRP-PT-ANT06	02N1697

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop PC	IBM	Thinkpad 2645	Z9M8N100301TT326
RS422/RS232 Converter	B&B Electronics	485COR	none

Test Conditions / Notes:

The loop antenna is placed at the center of the turntable. The transmitter and support equipment are placed behind the loop on top of the wooden table. Two High Antenna loop coil area is 0.812m². Note 1: Standard Mode. Note 2: Added Fair Rite ferrite P/N- 0443164151 to ethernet cable. Note 3: Shielded filtered power cord in use. Note 4: Ferrites added to both ends of DC power cord. Conducted emissions 150kHz - 30MHz.

Transducer Legend:

T1=Site D Conducted cable with .12uF cap	T2=LISN loss, Black, a/n 00612, Solar 9252
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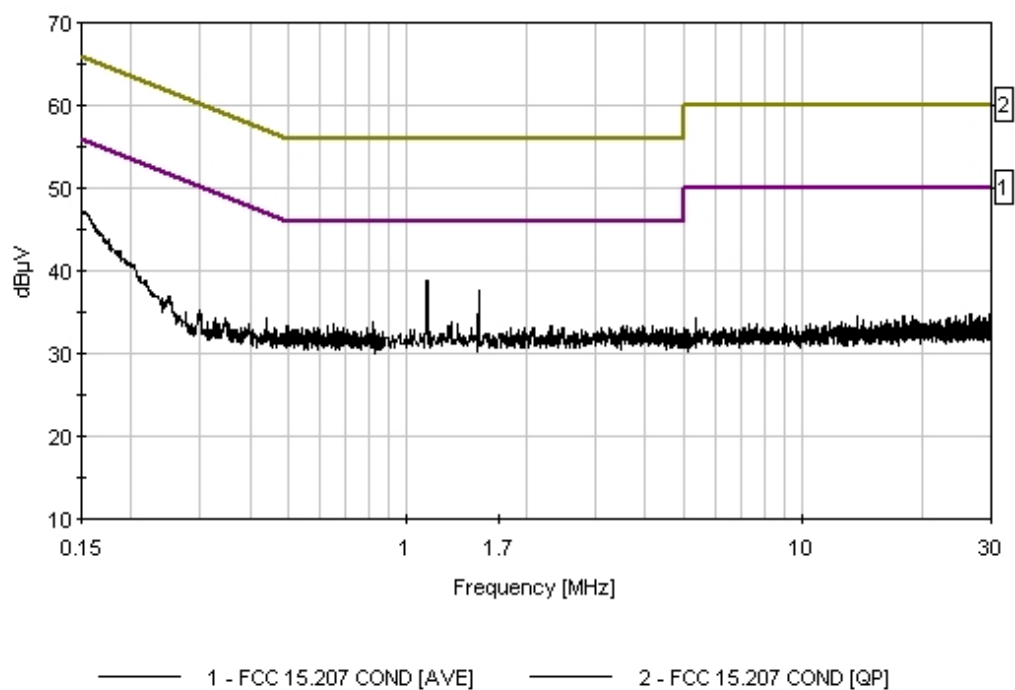
Measurement Data:

Reading listed by margin.

Test Lead: Black

#	Freq MHz	Rdng dBμV	T1 dB	T2 dB		Dist dB	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	1.119M	38.4	+0.3	+0.1		+0.0	38.8	46.0	-7.2	Black
2	1.515M	37.3	+0.2	+0.1		+0.0	37.6	46.0	-8.4	Black
3	152.182k	46.8	+0.2	+0.1		+0.0	47.1	55.9	-8.8	Black
4	818.297k	33.4	+0.2	+0.1		+0.0	33.7	46.0	-12.3	Black
5	26.499M	33.3	+1.2	+0.2		+0.0	34.7	50.0	-15.3	Black
6	13.806M	33.5	+0.8	+0.3		+0.0	34.6	50.0	-15.4	Black
7	18.004M	33.2	+1.0	+0.3		+0.0	34.5	50.0	-15.5	Black
8	5.391M	33.6	+0.5	+0.1		+0.0	34.2	50.0	-15.8	Black

CKC Laboratories, Inc. Date: 05/29/2003 Time: 2:51:05 PM Escort Memory Systems WO#: 80506
 FCC 15.207 COND [AVE] Test Lead: Black 120V 60Hz Sequence#: 13



Test Location: CKC Laboratories, Inc. • 480 Las Viboras Road, Site D • Hollister, CA 95023 • 831-637-8176

Customer: **Escort Memory Systems**
 Specification: **FCC 15.207 COND [AVE]**
 Work Order #: **80506**
 Test Type: **Conducted Emissions**
 Equipment: **Reader/Pass Thru Antenna**
 Manufacturer: Escort Memory Systems
 Model: LRP-PT-ANT06
 S/N: 02N1697

Date: 05/29/2003
 Time: 2:56:06 PM
 Sequence#: 14
 Tested By: Randal Clark
 120V 60Hz

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Controller Box	Escort Memory Systems	LRP-PT-CTL20	03D1879
Power Supply	Escort Memory Systems	00-1142	03D1880
Reader/Pass Thru Antenna*	Escort Memory Systems	LRP-PT-ANT06	02N1697

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop PC	IBM	Thinkpad 2645	Z9M8N100301TT326
RS422/RS232 Converter	B&B Electronics	485COR	none

Test Conditions / Notes:

The loop antenna is placed at the center of the turntable. The transmitter and support equipment are placed behind the loop on top of the wooden table. Two High Antenna loop coil area is 0.812m². Note 1: Standard Mode. Note 2: Added Fair Rite ferrite P/N- 0443164151 to ethernet cable. Note 3: Shielded filtered power cord in use. Note 4: Ferrites added to both ends of DC power cord. Conducted emissions 150kHz - 30MHz.

Transducer Legend:

T1=Site D Conducted cable with .12uF cap	T2=LISN loss, White, a/n 00612, Solar 9252
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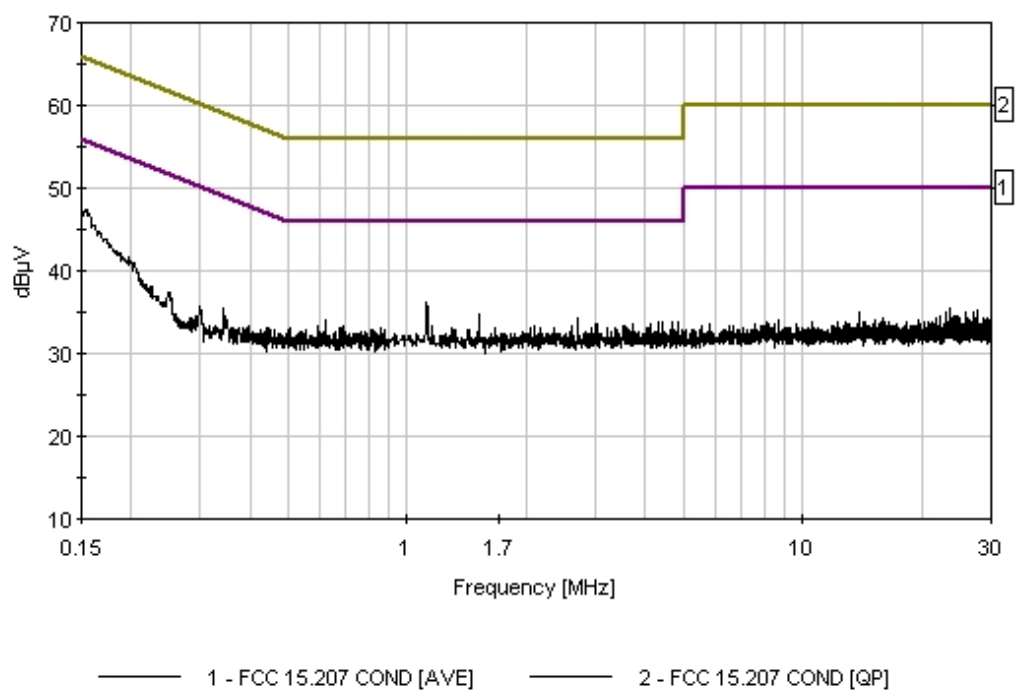
Measurement Data:

Reading listed by margin.

Test Lead: White

#	Freq MHz	Rdng dBμV	T1 dB	T2 dB		Dist dB	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	153.636k	47.1	+0.2	+0.0		+0.0	47.3	55.8	-8.5	White
2	1.115M	35.9	+0.3	+0.1		+0.0	36.3	46.0	-9.7	White
3	619.771k	33.7	+0.2	+0.1		+0.0	34.0	46.0	-12.0	White
4	23.600M	34.0	+1.2	+0.2		+0.0	35.4	50.0	-14.6	White
5	27.616M	33.8	+1.3	+0.1		+0.0	35.2	50.0	-14.8	White
6	13.968M	33.8	+0.8	+0.3		+0.0	34.9	50.0	-15.1	White
7	25.861M	33.5	+1.2	+0.2		+0.0	34.9	50.0	-15.1	White
8	27.102M	33.4	+1.3	+0.2		+0.0	34.9	50.0	-15.1	White
9	22.238M	33.3	+1.1	+0.2		+0.0	34.6	50.0	-15.4	White

CKC Laboratories, Inc. Date: 05/29/2003 Time: 2:56:06 PM Escort Memory Systems WO#: 80506
 FCC 15.207 COND [AVE] Test Lead: White 120V 60Hz Sequence#: 14



Test Location: CKC Laboratories, Inc. • 480 Las Viboras Road, Site D • Hollister, CA 95023 • 831-637-8176

Customer: **Escort Memory Systems**

Specification: **FCC 15.209**

Work Order #: **80506**

Date: 06/06/2003

Test Type: **Radiated Scan**

Time: 17:30:12

Equipment: **Reader/Pass Thru Antenna**

Sequence#: 9

Manufacturer: Escort Memory Systems

Tested By: Matthew Pettersen

Model: LRP-PT-ANT03

S/N: 03D1494

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Controller Box	Escort Memory Systems	LRP-PT-CTL20	03D1879
Reader/Pass Thru Antenna*	Escort Memory Systems	LRP-PT-ANT03	03D1494
Power Supply	Escort Memory Systems	00-1142	03D1880

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop PC	IBM	Thinkpad 2645	Z9M8N100301TT326
RS422/RS232 Converter	B&B Electronics	485COR	none

Test Conditions / Notes:

The loop antenna is placed at the center of the turntable. The transmitter and support equipment are placed behind the loop on top of the wooden table. Half High antenna loop coil area is 0.406m². Note 1: Standard Mode. Note 2: Added Fair Rite ferrite P/N- 0443164151 to ethernet cable. Note 3: Shielded filtered power cord in use. Note 4: Ferrites added to both ends of DC power cord. Radiated emissions 30MHz - 1GHz.

Transducer Legend:

T1=10m or 3m radiated cable Site D	T2=Chase bilog a/n 01995, s/n 2451
T3=Amp Calibration-HP-8447D, S/N 2944A08285	

Measurement Data:

Reading listed by margin.

Test Distance: 10 Meters

#	Freq MHz	Rdng dBμV	T1 dB	T2 dB	T3 dB	dB	Dist Table	Corr dBμV/m	Spec dBμV/m	Margin dB	Polar Ant
1	81.374M	43.8	+2.6	+7.7	-26.6		+10.0	37.5	40.0	-2.5	Vert
2	149.159M	41.9	+3.6	+10.9	-26.3		+10.0	40.1	43.5	-3.4	Horiz
3	40.003M	38.7	+1.9	+12.5	-26.7		+10.0	36.4	40.0	-3.6	Vert
4	300.043M	39.3	+5.5	+13.0	-25.9		+10.0	41.9	46.0	-4.1	Vert
5	720.000M	28.8	+8.9	+20.9	-27.1		+10.0	41.5	46.0	-4.5	Horiz
QP	^ 720.000M	32.2	+8.9	+20.9	-27.1		+10.0	44.9	46.0	-1.1	Horiz
7	149.169M	40.3	+3.6	+10.9	-26.3		+10.0	38.5	43.5	-5.0	Vert
QP	^ 149.169M	47.8	+3.6	+10.9	-26.3		+10.0	46.0	43.5	+2.5	Vert

9	660.011M QP	29.3	+8.5	+20.1	-27.1	+10.0	40.8	46.0	-5.2	Horiz
^	660.029M	33.2	+8.5	+20.1	-27.1	+10.0	44.7	46.0	-1.3	Horiz
11	840.000M QP	25.4	+10.0	+22.1	-26.8	+10.0	40.7	46.0	-5.3	Horiz
^	840.000M	27.8	+10.0	+22.1	-26.8	+10.0	43.1	46.0	-2.9	Horiz
13	339.519M	37.0	+5.7	+13.9	-26.0	+10.0	40.6	46.0	-5.4	Horiz
14	420.044M	34.8	+6.5	+15.8	-26.7	+10.0	40.4	46.0	-5.6	Vert
15	240.045M	39.4	+4.6	+11.8	-25.9	+10.0	39.9	46.0	-6.1	Vert
16	480.018M QP	32.6	+7.0	+17.1	-26.9	+10.0	39.8	46.0	-6.2	Horiz
^	480.018M	35.8	+7.0	+17.1	-26.9	+10.0	43.0	46.0	-3.0	Horiz
18	257.736M	38.2	+4.8	+12.6	-25.8	+10.0	39.8	46.0	-6.2	Horiz
19	540.006M QP	30.4	+7.4	+18.7	-27.2	+10.0	39.3	46.0	-6.7	Horiz
^	540.006M	35.0	+7.4	+18.7	-27.2	+10.0	43.9	46.0	-2.1	Horiz
21	360.030M	35.2	+5.9	+14.4	-26.3	+10.0	39.2	46.0	-6.8	Vert
22	420.497M	33.4	+6.5	+15.8	-26.7	+10.0	39.0	46.0	-7.0	Horiz
23	176.301M	39.4	+3.9	+9.1	-26.1	+10.0	36.3	43.5	-7.2	Vert
24	500.049M	30.7	+7.1	+17.6	-27.1	+10.0	38.3	46.0	-7.7	Horiz
25	162.720M	38.1	+3.7	+10.2	-26.2	+10.0	35.8	43.5	-7.7	Vert
26	122.076M	37.2	+3.2	+11.3	-26.5	+10.0	35.2	43.5	-8.3	Vert
27	112.126M	37.9	+3.1	+10.7	-26.5	+10.0	35.2	43.5	-8.3	Vert
28	339.044M	34.0	+5.7	+13.9	-26.0	+10.0	37.6	46.0	-8.4	Vert
29	32.006M	29.3	+1.7	+16.3	-26.7	+10.0	30.6	40.0	-9.4	Vert
30	67.760M	38.4	+2.3	+6.4	-26.7	+10.0	30.4	40.0	-9.6	Horiz
31	54.287M	37.5	+2.1	+7.5	-26.7	+10.0	30.4	40.0	-9.6	Vert

32	80.038M	36.8	+2.6	+7.5	-26.6	+10.0	30.3	40.0	-9.7	Vert
33	60.042M	36.2	+2.3	+6.3	-26.7	+10.0	28.1	40.0	-11.9	Vert
34	67.798M	34.8	+2.3	+6.4	-26.7	+10.0	26.8	40.0	-13.2	Vert

Test Location: CKC Laboratories, Inc. • 480 Las Viboras Road, Site D • Hollister, CA 95023 • 831-637-8176

Customer: **Escort Memory Systems**

Specification: **FCC 15.209**

Work Order #: **80506**

Date: 05/30/2003

Test Type: **Radiated Scan**

Time: 15:30:33

Equipment: **Reader/Pass Thru Antenna**

Sequence#: 15

Manufacturer: Escort Memory Systems

Tested By: Randal Clark

Model: LRP-PT-ANT06

S/N: 02N1697

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Controller Box	Escort Memory Systems	LRP-PT-CTL20	03D1879
Power Supply	Escort Memory Systems	00-1142	03D1880
Reader/Pass Thru Antenna*	Escort Memory Systems	LRP-PT-ANT06	02N1697

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop PC	IBM	Thinkpad 2645	Z9M8N100301TT326
RS422/RS232 Converter	B&B Electronics	485COR	none

Test Conditions / Notes:

The loop antenna is placed at the center of the turntable. The transmitter and support equipment are placed behind the loop on top of the wooden table. Two High Antenna loop coil area is 0.812m². Note 1: Standard Mode. Note 2: Added Fair Rite ferrite P/N- 0443164151 to ethernet cable. Note 3: Shielded filtered power cord in use. Note 4: Ferrites added to both ends of DC power cord. Radiated emissions 30MHz - 1GHz.

Transducer Legend:

T1=10m or 3m radiated cable Site D	T2=Chase bilog a/n 01995, s/n 2451
T3=Amp Calibration-HP-8447D, S/N 2944A08285	

Measurement Data: Reading listed by margin. Test Distance: 10 Meters

#	Freq MHz	Rdng dBμV	T1 dB	T2 dB	T3 dB	dB	Dist Table	Corr dBμV/m	Spec dBμV/m	Margin dB	Polar Ant
1	144.001M	43.2	+3.5	+11.2	-26.4		+10.0	41.5	43.5	-2.0	Horiz
2	300.000M	40.8	+5.5	+13.0	-25.9		+10.0	43.4	46.0	-2.6	Horiz
^	300.000M	43.7	+5.5	+13.0	-25.9		+10.0	46.3	46.0	+0.3	Horiz
^	299.999M	34.4	+5.5	+13.0	-25.9		+10.0	37.0	46.0	-9.0	Horiz
5	40.691M	38.3	+1.9	+12.3	-26.7		+10.0	35.8	40.0	-4.2	Horiz
6	840.006M	26.4	+10.0	+22.1	-26.8		+10.0	41.7	46.0	-4.3	Horiz
^	840.007M	30.2	+10.0	+22.1	-26.8		+10.0	45.5	46.0	-0.5	Horiz
8	660.007M	30.0	+8.5	+20.1	-27.1		+10.0	41.5	46.0	-4.5	Horiz
^	660.005M	32.6	+8.5	+20.1	-27.1		+10.0	44.1	46.0	-1.9	Horiz

10	359.999M	37.3	+5.9	+14.4	-26.3	+10.0	41.3	46.0	-4.7	Horiz
11	40.692M	37.4	+1.9	+12.3	-26.7	+10.0	34.9	40.0	-5.1	Vert
12	540.000M QP	31.3	+7.4	+18.7	-27.2	+10.0	40.2	46.0	-5.8	Horiz
^	540.003M	33.6	+7.4	+18.7	-27.2	+10.0	42.5	46.0	-3.5	Horiz
14	54.239M	41.3	+2.1	+7.5	-26.7	+10.0	34.2	40.0	-5.8	Horiz
15	299.999M	37.4	+5.5	+13.0	-25.9	+10.0	40.0	46.0	-6.0	Vert
16	420.006M	33.7	+6.5	+15.8	-26.7	+10.0	39.3	46.0	-6.7	Horiz
17	719.990M QP	26.2	+8.9	+20.9	-27.1	+10.0	38.9	46.0	-7.1	Horiz
^	719.982M	29.3	+8.9	+20.9	-27.1	+10.0	42.0	46.0	-4.0	Horiz
19	420.015M	33.1	+6.5	+15.8	-26.7	+10.0	38.7	46.0	-7.3	Vert
20	420.007M	33.0	+6.5	+15.8	-26.7	+10.0	38.6	46.0	-7.4	Horiz
21	360.022M	34.3	+5.9	+14.4	-26.3	+10.0	38.3	46.0	-7.7	Vert
22	480.022M	31.0	+7.0	+17.1	-26.9	+10.0	38.2	46.0	-7.8	Vert
23	480.004M QP	30.7	+7.0	+17.1	-26.9	+10.0	37.9	46.0	-8.1	Horiz
^	480.010M	33.3	+7.0	+17.1	-26.9	+10.0	40.5	46.0	-5.5	Horiz
25	500.015M	30.1	+7.1	+17.6	-27.1	+10.0	37.7	46.0	-8.3	Horiz
26	100.000M	38.7	+3.0	+9.9	-26.5	+10.0	35.1	43.5	-8.4	Horiz
27	515.278M	29.4	+7.2	+18.0	-27.1	+10.0	37.5	46.0	-8.5	Vert
28	540.033M	28.4	+7.4	+18.7	-27.2	+10.0	37.3	46.0	-8.7	Vert
29	80.003M	37.2	+2.6	+7.5	-26.6	+10.0	30.7	40.0	-9.3	Horiz
30	240.003M	36.1	+4.6	+11.8	-25.9	+10.0	36.6	46.0	-9.4	Horiz
31	240.029M	36.1	+4.6	+11.8	-25.9	+10.0	36.6	46.0	-9.4	Horiz
32	119.997M	36.0	+3.2	+11.2	-26.5	+10.0	33.9	43.5	-9.6	Horiz
33	480.021M	28.9	+7.0	+17.1	-26.9	+10.0	36.1	46.0	-9.9	Vert
34	339.027M	31.6	+5.7	+13.9	-26.0	+10.0	35.2	46.0	-10.8	Horiz

35	80.039M	35.4	+2.6	+7.5	-26.6	+10.0	28.9	40.0	-11.1	Vert
36	67.828M	36.3	+2.3	+6.4	-26.7	+10.0	28.3	40.0	-11.7	Horiz
37	122.007M	33.8	+3.2	+11.3	-26.5	+10.0	31.8	43.5	-11.7	Horiz
38	352.560M	30.4	+5.8	+14.2	-26.2	+10.0	34.2	46.0	-11.8	Horiz
39	80.005M	34.5	+2.6	+7.5	-26.6	+10.0	28.0	40.0	-12.0	Horiz
40	311.896M	31.0	+5.4	+13.3	-25.8	+10.0	33.9	46.0	-12.1	Horiz
41	366.118M	29.5	+5.9	+14.6	-26.2	+10.0	33.8	46.0	-12.2	Vert
42	127.997M	32.7	+3.3	+11.4	-26.5	+10.0	30.9	43.5	-12.6	Horiz
43	160.018M	32.7	+3.8	+10.4	-26.2	+10.0	30.7	43.5	-12.8	Vert
44	257.647M	30.1	+4.8	+12.6	-25.8	+10.0	31.7	46.0	-14.3	Vert
45	128.042M	31.0	+3.3	+11.4	-26.5	+10.0	29.2	43.5	-14.3	Horiz
46	60.014M	33.1	+2.3	+6.3	-26.7	+10.0	25.0	40.0	-15.0	Horiz
47	240.024M	30.4	+4.6	+11.8	-25.9	+10.0	30.9	46.0	-15.1	Vert
48	120.001M	30.3	+3.2	+11.2	-26.5	+10.0	28.2	43.5	-15.3	Horiz
49	59.994M	32.2	+2.3	+6.3	-26.7	+10.0	24.1	40.0	-15.9	Horiz
50	67.807M	31.7	+2.3	+6.4	-26.7	+10.0	23.7	40.0	-16.3	Vert
51	160.023M	28.3	+3.8	+10.4	-26.2	+10.0	26.3	43.5	-17.2	Vert

Test Location: CKC Laboratories, Inc. • 480 Las Viboras Road, Site D • Hollister, CA 95023 • 831-637-8176

Customer: **Escort Memory Systems**
 Specification: **FCC 15.225(a) & (b) 30-meter**
 Work Order #: **80506**
 Test Type: **Radiated Scan**
 Equipment: **Reader/Pass Thru Antenna**
 Manufacturer: Escort Memory Systems
 Model: LRP-PT-ANT03
 S/N: 03D1494

Date: 06/06/2003
 Time: 11:24:18
 Sequence#: 16
 Tested By: Randal Clark

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Controller Box	Escort Memory Systems	LRP-PT-CTL20	03D1879
Power Supply	Escort Memory Systems	00-1142	03D1880
Reader/Pass Thru Antenna*	Escort Memory Systems	LRP-PT-ANT03	03D1494

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop PC	IBM	Thinkpad 2645	Z9M8N100301TT326
RS422/RS232 Converter	B&B Electronics	485COR	none

Test Conditions / Notes:

The loop antenna is placed at the center of the turntable. The transmitter and support equipment are placed behind the loop on top of the wooden table. Half High antenna loop coil area is 0.406m². The EUT loop coil antenna area is greater than 0.16m². Note 1: Standard Mode. Note 2: Added Fair Rite ferrite P/N- 0443164151 to ethernet cable. Note 3: Shielded filtered power cord in use. Note 4: Ferrites added to both ends of DC power cord. Fundamental & Spurious Measurements 9kHz - 30MHz.

Transducer Legend:

T1=30m Radiated Cable Site D	T2=Mag Loop A/N 00432, S/N 2078
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Measurement Data: Reading listed by margin. Test Distance: 30 Meters

#	Freq MHz	Rdng dB μ V	T1 dB	T2 dB	dB	dB	Dist Table	Corr dB μ V/m	Spec dB μ V/m	Margin dB	Polar Ant
1	13.572M	16.4	+1.2	+8.9			+0.0	26.5	29.5	-3.0	Horiz
2	27.124M	15.1	+1.9	+6.5			+0.0	23.5	29.5	-6.0	Vert
3	13.560M	62.3	+1.2	+8.9			+0.0	72.4	80.0 Carrier +15% of nominal voltage	-7.6	Vert
4	13.560M	61.7	+1.2	+8.9			+0.0	71.8	80.0 Carrier -15% of nominal voltage	-8.2	Vert
5	13.560M	61.7	+1.2	+8.9			+0.0	71.8	80.0 Carrier	-8.2	Vert
6	16.007M	10.3	+1.3	+8.8			+0.0	20.4	29.5	-9.1	Horiz
7	27.141M	11.4	+1.9	+6.5			+0.0	19.8	29.5	-9.7	Horiz
8	20.000M	9.1	+1.6	+8.5			+0.0	19.2	29.5	-10.3	Horiz

9	13.560M	59.2	+1.2	+8.9	+0.0	69.3	80.0	-10.7	Horiz
							Carrier		
10	16.022M	5.5	+1.3	+8.8	+0.0	15.6	29.5	-13.9	Vert
11	20.000M	0.4	+1.6	+8.5	+0.0	10.5	29.5	-19.0	Vert

Test Location: CKC Laboratories, Inc. • 480 Las Viboras Road, Site D • Hollister, CA 95023 • 831-637-8176

Customer: **Escort Memory Systems**
 Specification: **FCC 15.225(a) & (b) 30-meter**
 Work Order #: **80506**
 Test Type: **Radiated Scan**
 Equipment: **Reader/Pass Thru Antenna**
 Manufacturer: Escort Memory Systems
 Model: LRP-PT-ANT06
 S/N: 02N1697

Date: 06/06/2003
 Time: 09:49:13
 Sequence#: 15
 Tested By: Randal Clark

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Controller Box	Escort Memory Systems	LRP-PT-CTL20	03D1879
Power Supply	Escort Memory Systems	00-1142	03D1880
Reader/Pass Thru Antenna*	Escort Memory Systems	LRP-PT-ANT06	02N1697

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop PC	IBM	Thinkpad 2645	Z9M8N100301TT326
RS422/RS232 Converter	B&B Electronics	485COR	none

Test Conditions / Notes:

The loop antenna is placed at the center of the turntable. The transmitter and support equipment are placed behind the loop on top of the wooden table. Two High Antenna loop coil area is 0.812m². Note 1: Standard Mode. Note 2: Added Fair Rite ferrite P/N- 0443164151 to ethernet cable. Note 3: Shielded filtered power cord in use. Note 4: Ferrites added to both ends of DC power cord. Frequency Range Investigated: 13.56 MHz, 9kHz - 30MHz.

Transducer Legend:

T1=30m Radiated Cable Site D	T2=Mag Loop A/N 00432, S/N 2078
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Measurement Data:

Reading listed by margin.

Test Distance: 30 Meters

#	Freq MHz	Rdng dBμV	T1 dB	T2 dB			Dist Table	Corr dBμV/m	Spec dBμV/m	Margin dB	Polar Ant
1	13.560M	68.9	+1.2	+8.9			+0.0	79.0	80.0	-1.0	Vert
									Carrier +15% of nominal voltage		
2	13.573M	18.4	+1.2	+8.9			+0.0	28.5	29.5	-1.0	Horiz
3	13.560M	68.3	+1.2	+8.9			+0.0	78.4	80.0	-1.6	Vert
									Carrier -15% of nominal voltage		
4	13.560M	68.3	+1.2	+8.9			+0.0	78.4	80.0	-1.6	Vert
									Carrier		
5	27.121M	18.4	+1.9	+6.5			+0.0	26.8	29.5	-2.7	Vert
6	27.131M	16.3	+1.9	+6.5			+0.0	24.7	29.5	-4.8	Vert
7	16.002M	12.6	+1.3	+8.8			+0.0	22.7	29.5	-6.8	Vert
8	13.560M	62.3	+1.2	+8.9			+0.0	72.4	80.0	-7.6	Horiz
									Carrier		

9	20.000M	10.1	+1.6	+8.5	+0.0	20.2	29.5	-9.3	Vert
10	20.000M	9.9	+1.6	+8.5	+0.0	20.0	29.5	-9.5	Horiz
11	13.573M	27.6	+1.2	+8.9	+0.0	37.7	50.5	-12.8	Vert
12	16.025M	5.8	+1.3	+8.8	+0.0	15.9	29.5	-13.6	Horiz
13	27.121M	6.7	+1.9	+6.5	+0.0	15.1	29.5	-14.4	Vert
14	27.155M	4.9	+1.9	+6.5	+0.0	13.3	29.5	-16.2	Horiz