



**ASYST TECHNOLOGIES TEST REPORT**

**FOR THE**

**SINGLE ANTENNA MULTIPLEXER, ATR-9100 ROHS**

**FCC PART 15 SUBPART C SECTIONS 15.207 & 15.209,**  
**SUBPART B SECTIONS 15.107 & 15.109 CLASS A AND RSS-210**

**COMPLIANCE**

**DATE OF ISSUE: AUGUST 17, 2006**

**PREPARED FOR:**

Asyst Technologies  
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Fremont, CA 94538-6572

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**PREPARED BY:**

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Date of test: August 4-10, 2006

**Report No.: FC06-046**

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## TABLE OF CONTENTS

Administrative Information .....	4
FCC to Canada Standard Correlation Matrix.....	5
Conditions for Compliance .....	5
Approvals.....	5
FCC 15.31(m) Number Of Channels .....	6
FCC 15.33(a) Frequency Ranges Tested .....	6
FCC 15.35 Analyzer Bandwidth Settings.....	6
FCC 15.203 Antenna Requirements .....	6
FCC 15.205 Restricted Bands.....	6
EUT Operating Frequency .....	6
Temperature And Humidity During Testing.....	6
Equipment Under Test (EUT) Description .....	7
Equipment Under Test .....	7
Peripheral Devices .....	7
Report of Measurements .....	8
FCC 15.31(e) Voltage Variation.....	8
Table 1: FCC 15.107 Six Highest Conducted Emission Levels .....	11
Table 2: FCC 15.109 Six Highest Radiated Emission Levels .....	12
Table 3: FCC 15.207 Six Highest Conducted Emission Levels .....	13
Table 4: FCC 15.209 Fundamental Emission Levels .....	14
Table 5: FCC 15.209 Six Highest Radiated Emission Levels: 9 kHz - 30 MHz.....	15
Table 6: FCC 15.209 Six Highest Radiated Emission Levels: 30-1000 MHz.....	16
20dB Bandwidth Plot.....	17
EUT Setup.....	18
Correction Factors.....	18
Table A: Sample Calculations .....	18
Test Instrumentation and Analyzer Settings .....	19
Spectrum Analyzer Detector Functions .....	19
Peak.....	19
Quasi-Peak .....	19
Average .....	19
EUT Testing.....	20
Mains Conducted Emissions.....	20
Radiated Emissions.....	20
Appendix A: Test Setup Photographs.....	21
Photograph Showing Mains Conducted Emissions .....	22
Photograph Showing Mains Conducted Emissions .....	23
Photograph Showing Mains Conducted Emissions .....	24
Photograph Showing Mains Conducted Emissions .....	25
Photograph Showing Radiated Emissions .....	26
Photograph Showing Radiated Emissions .....	27

Photograph Showing Radiated Emissions .....	28
Photograph Showing Radiated Emissions .....	29
Appendix B: Test Equipment List .....	30
Appendix C: Measurement Data Sheets .....	31

## ADMINISTRATIVE INFORMATION

**DATE OF TEST:** August 4-10, 2006

**DATE OF RECEIPT:** August 4, 2006

**MANUFACTURER:** Asyst Technologies  
46897 Bayside Parkway  
Fremont, CA 94538-6572

**REPRESENTATIVE:** Tou Vang

**TEST LOCATION:** CKC Laboratories, Inc.  
1120 Fulton Place  
Fremont, CA 94539

**TEST METHOD:** ANSI C63.4 (2003), RSS GEN and RSS-210

**PURPOSE OF TEST:** To demonstrate the compliance of the Single Antenna Multiplexer, ATR-9100 RoHS with the requirements for FCC Part 15 Subpart C Sections 15.207 & 15.209, Subpart B Sections 15.107 & 15.109 Class A and RSS-210 devices.

### FCC TO CANADA STANDARD CORRELATION MATRIX

Canadian Standard	Canadian Section	FCC Standard	FCC Section	Test Description
RSS GEN	7.1.4	47CFR	15.203	Antenna Connector Requirements
RSS GEN	7.2.1	47CFR	15.35(c)	Pulsed Operation
RSS GEN	7.2.2	47CFR	15.207	AC Mains Conducted Emissions Requirement
RSS 210	2.1	47CFR	15.215(c)	Frequency Stability Recommendation
RSS 210	2.2	47CFR	15.205	Restricted Bands of Operation
RSS 210	2.6	47CFR	15.209	General Radiated Emissions Requirement
	IC 5933		958979	Site File No.

#### CONDITIONS FOR COMPLIANCE

No modifications to the EUT were necessary to comply.

#### APPROVALS

Steve Behm, Director of Engineering Services

#### QUALITY ASSURANCE:



Joyce Walker, Quality Assurance Administrative Manager

#### TEST PERSONNEL:



Amrinder Brar, Lab Manager



Art Rice, EMC Test Engineer

**FCC 15.31(m) Number Of Channels**

This device operates on a single channel.

**FCC 15.33(a) Frequency Ranges Tested**

15.107 Conducted Emissions: 150 kHz – 30 MHz

15.109 Radiated Emissions: 30 MHz – 1000 MHz

15.207 Conducted Emissions: 150 kHz – 30 MHz

15.209 Radiated Emissions: 9 kHz – 1000 MHz

<b>FCC SECTION 15.35: ANALYZER BANDWIDTH SETTINGS PER FREQUENCY RANGE</b>			
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**

The antenna is removable and does not employ a unique connector, however the device is professionally installed and maintained. Therefore the EUT complies with 15.203. For more information refer to the installation/user’s manual.

**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 135 kHz.

**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 customer declares the EUT tested by CKC Laboratories was representative of a production unit.

### **EQUIPMENT UNDER TEST**

#### **Single Antenna Multiplexer**

Manuf: Asyst Technologies  
Model: ATR-9100 RoHS  
Serial: 10-1907-104391  
FCC ID: pending

#### **Antenna**

Manuf: Asyst Technologies  
Model: PN: 9700-9097-03  
Serial: None

### **PERIPHERAL DEVICES**

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

#### **Laptop PS**

Manuf: Compaq  
Model: PP2040  
Serial: 3J08FBJ34803S88

#### **Laptop**

Manuf: Compaq  
Model: PN 386315-002  
Serial: 00035544

#### **32mm Glass Transponder**

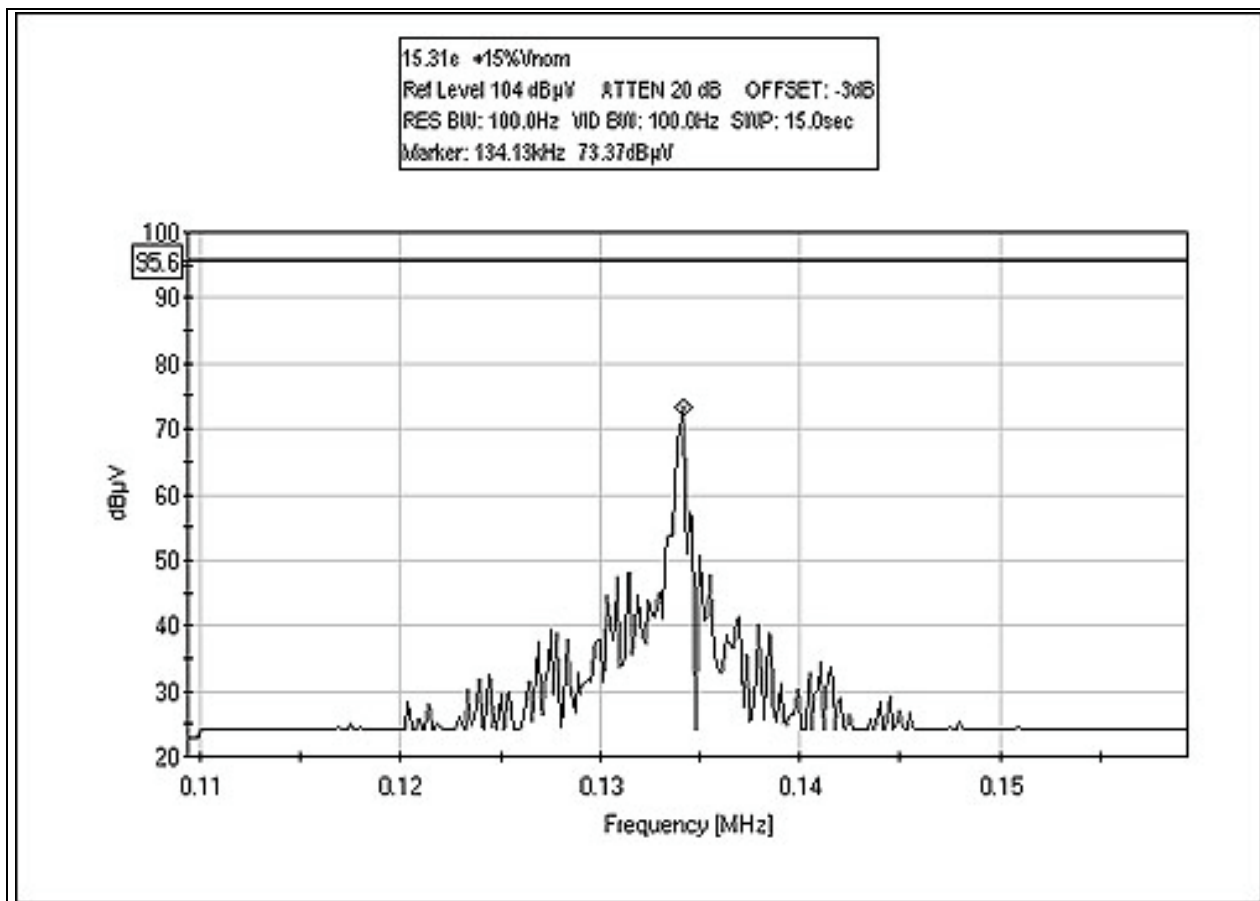
Manuf: Texas Instruments  
Model: RI-TRP-RR2B  
Serial: NA

#### **PS**

Manuf: ITE  
Model: PW102  
Serial: 06151A/Rev B

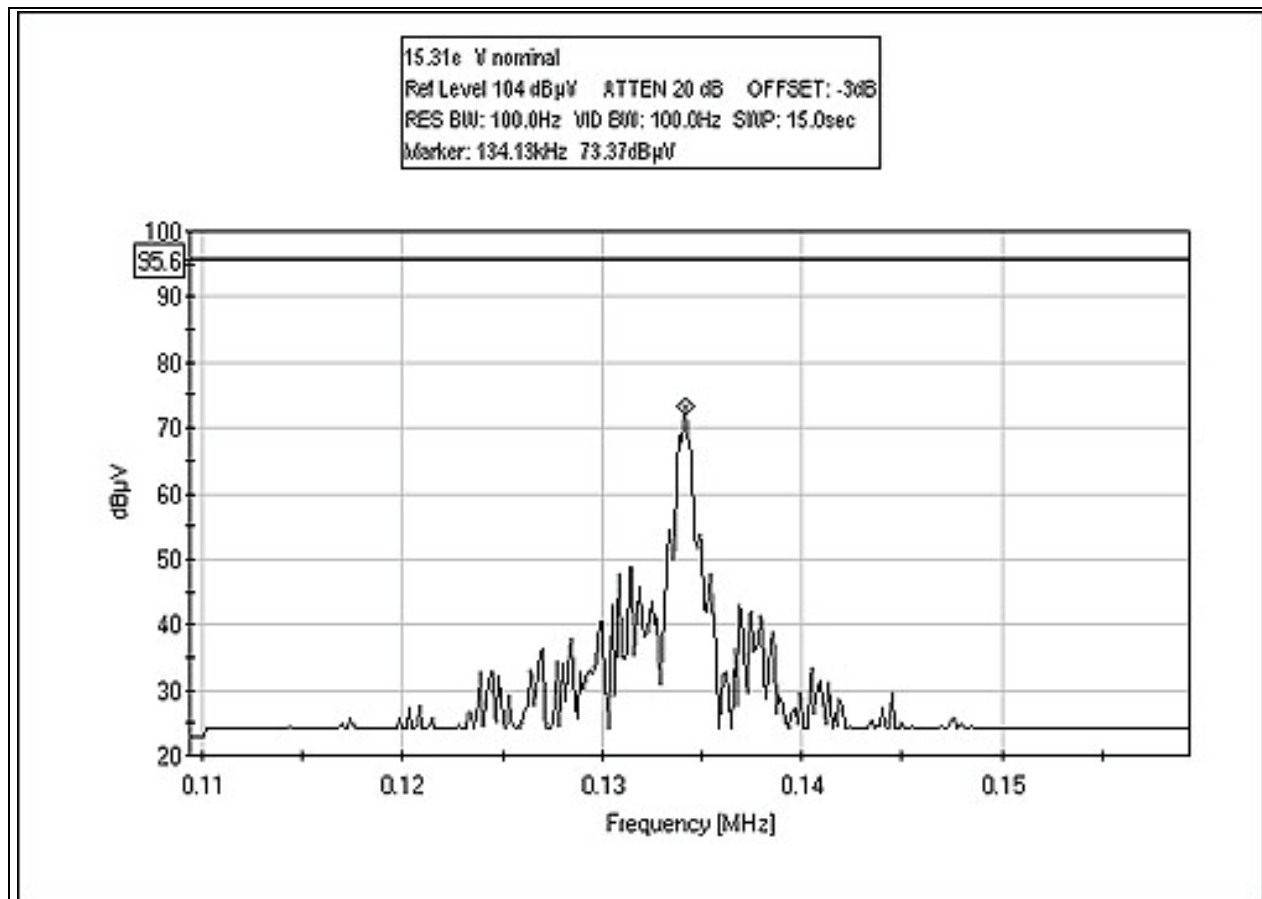
### REPORT OF MEASUREMENTS

#### FCC 15.31(e) VOLTAGE VARIATION +15%

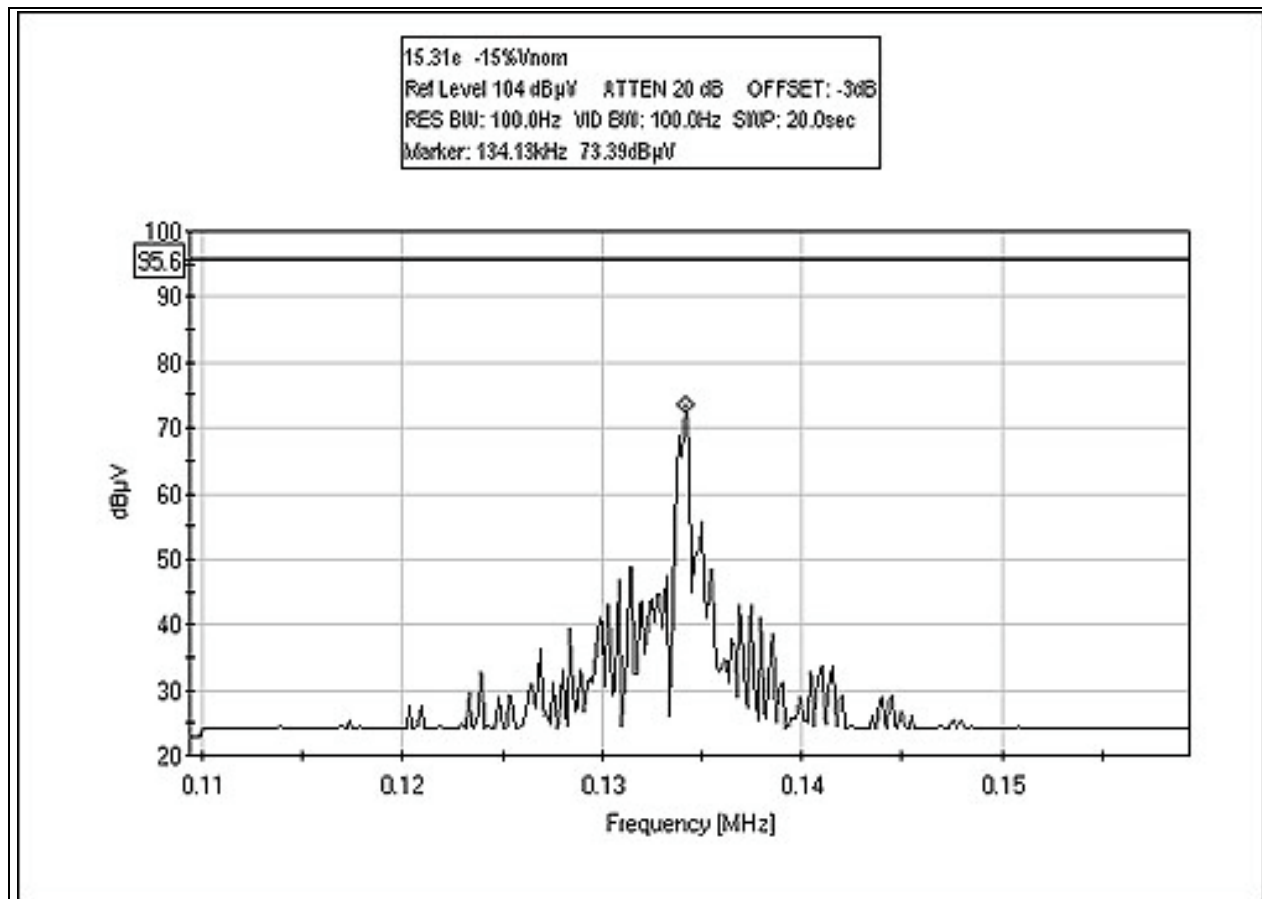




### FCC 15.31(e) VOLTAGE VARIATION



**FCC 15.31(e) VOLTAGE VARIATION -15%**



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 15.107 Six Highest Conducted Emission Levels**

FREQUENCY MHz	METER READING dB $\mu$ V	CORRECTION FACTORS				CORRECTED READING dB $\mu$ V	SPEC LIMIT dB $\mu$ V	MARGIN dB	NOTES
		Att dB	Cable dB	Lisn dB	HPF dB				
2.145000	30.4	10.1		0.1		40.6	60.0	-19.4	BA
2.191000	30.6	10.1		0.1		40.8	60.0	-19.2	BA
2.234000	30.1	10.1		0.1		40.3	60.0	-19.7	BA
2.589000	30.2	10.2		0.1		40.5	60.0	-19.5	BA
2.633000	30.4	10.2		0.1		40.7	60.0	-19.3	BA
2.679000	30.1	10.2		0.1		40.4	60.0	-19.6	BA

Test Method: ANSI C63.4 (2003)  
Spec Limit: FCC Part 15 Subpart B Section 15.107 Class A

NOTES: A = Average Reading  
B = Black Lead  
W = White Lead

COMMENTS: EUT, antenna & transponder are on the test table. The antenna and transponder are 1 inch away from each other and they are sitting on a 20 cm foam standoff. The laptop is outside of the chamber connected to the EUT via Ethernet cable. The laptop is used to control communications between the transponder and the EUT. Conducted emissions 0.15-30 MHz.

**Table 2: FCC 15.109 Six Highest Radiated Emission Levels**

FREQUENCY MHz	METER READING dB $\mu$ V	CORRECTION FACTORS				CORRECTED READING dB $\mu$ V/m	SPEC LIMIT dB $\mu$ V/m	MARGIN dB	NOTES
		Ant dB	Amp dB	Cable dB	Dist dB				
43.514	50.4	12.0	-26.2	0.8	-10.0	27.0	39.1	-12.1	H
125.009	60.9	11.2	-25.7	1.1	-10.0	37.5	43.5	-6.0	VQ
140.017	54.0	11.1	-25.6	1.2	-10.0	30.7	43.5	-12.8	V
250.010	53.3	12.3	-25.1	1.5	-10.0	32.0	46.4	-14.4	H
500.006	54.9	17.5	-26.7	2.2	-10.0	37.9	46.4	-8.5	V
500.007	56.3	17.5	-26.7	2.2	-10.0	39.3	46.4	-7.1	HQ

Test Method: ANSI C63.4 (2003)  
 Spec Limit: FCC Part 15 Subpart B Section 15.109 Class A  
 Test Distance: 3 Meters

NOTES: H = Horizontal Polarization  
 V = Vertical Polarization  
 Q = Quasi Peak Reading

COMMENTS: EUT, antenna & transponder are on the test table. The antenna and transponder are 1 inch away from each other and they are sitting on a 20 cm foam standoff. The laptop is outside of the chamber connected to the EUT via Ethernet cable. The laptop is used to control communications between the transponder and the EUT.

**Table 3: FCC 15.207 Six Highest Conducted Emission Levels**

FREQUENCY MHz	METER READING dB $\mu$ V	CORRECTION FACTORS				CORRECTED READING dB $\mu$ V	SPEC LIMIT dB $\mu$ V	MARGIN dB	NOTES
		Att dB	Cable dB	Lisn dB	HPF dB				
0.415000	32.3	9.7	0.1	0.3	0.0	42.4	47.5	-5.1	WA
0.416000	32.5	9.7	0.1	0.3	0.0	42.6	47.5	-4.9	BA
0.460000	34.4	9.7	0.1	0.3	0.0	44.5	46.7	-2.2	BA
0.460000	34.0	9.7	0.1	0.3	0.0	44.1	46.7	-2.6	WA
2.191000	30.6	9.7	0.1	0.3	0.1	40.8	46.0	-5.2	BA
2.633000	30.4	9.7	0.1	0.4	0.1	40.7	46.0	-5.3	BA

Test Method: ANSI C63.4 (2003)  
Spec Limit: FCC Part 15 Subpart C Section 15.207

NOTES: A = Average Reading  
B = Black Lead  
W = White Lead

COMMENTS: EUT, antenna & transponder are on the test table. The antenna and transponder are 1 inch away from each other and they are sitting on a 20 cm foam standoff. The laptop is outside of the chamber connected to the EUT via Ethernet cable. The laptop is used to control communications between the transponder and the EUT. Conducted emissions 0.15-30 MHz.

**Table 4: FCC 15.209 Fundamental Emission Levels**

FREQUENCY MHz	METER READING dB $\mu$ V	CORRECTION FACTORS			CORRECTED READING dB $\mu$ V/m	SPEC LIMIT dB $\mu$ V/m	MARGIN dB	NOTES	
		Ant dB	Cable dB	Corr dB					
0.135	73.0	9.3		0.1	-80.0	2.4	25.0	-22.6	H
0.135	71.0	9.3		0.1	-80.0	0.4	25.0	-24.6	V

Test Method: ANSI C63.4 (2003)  
 Spec Limit: FCC Part 15 Subpart C Section 15.209  
 Test Distance: 3 Meters

NOTES: H = Horizontal Polarization  
 V = Vertical Polarization

COMMENTS: EUT, antenna & transponder are on the test table. The antenna and transponder are 1 inch away from each other and they are sitting on a 20 cm foam standoff. The laptop is outside of the chamber connected to the EUT via Ethernet cable. The laptop is used to control communications between the transponder and the EUT. Fall off factor of 40dB/decade applied to readings.

**Table 5: FCC 15.209 Six Highest Radiated Emission Levels: 9 kHz - 30 MHz**

FREQUENCY MHz	METER READING dB $\mu$ V	CORRECTION FACTORS			CORRECTED READING dB $\mu$ V/m	SPEC LIMIT dB $\mu$ V/m	MARGIN dB	NOTES	
		Ant dB	Cable dB	Corr dB					
0.265	52.6	9.4		0.1	-80.0	-17.9	19.1	-37.0	H
4.786	35.7	9.2		0.3	-40.0	5.2	29.5	-24.3	V
5.342	38.6	9.2		0.3	-40.0	8.1	29.5	-21.4	H
6.381	31.0	9.2		0.3	-40.0	0.5	29.5	-29.0	H
7.461	35.3	9.1		0.4	-40.0	4.8	29.5	-24.7	V
15.592	32.9	8.5		0.6	-40.0	2.0	29.5	-27.5	V

Test Method: ANSI C63.4 (2003)  
 Spec Limit: FCC Part 15 Subpart C Section 15.209  
 Test Distance: 3 Meters

NOTES: H = Horizontal Polarization  
 V = Vertical Polarization

COMMENTS: EUT, antenna & transponder are on the test table. The antenna and transponder are 1 inch away from each other and they are sitting on a 20 cm foam standoff. The laptop is outside of the chamber connected to the EUT via Ethernet cable. The laptop is used to control communications between the transponder and the EUT. Fall off factor of 40dB/decade applied to readings.

**Table 6: FCC 15.209 Six Highest Radiated Emission Levels: 30-1000 MHz**

FREQUENCY MHz	METER READING dB $\mu$ V	CORRECTION FACTORS				CORRECTED READING dB $\mu$ V/m	SPEC LIMIT dB $\mu$ V/m	MARGIN dB	NOTES
		Ant dB	Amp dB	Cable dB	Dist dB				
42.027	45.2	12.8	-26.2	0.7		32.5	40.0	-7.5	HQ
49.524	45.1	8.8	-26.1	0.7		28.5	40.0	-11.5	V
124.985	48.5	11.2	-25.7	1.1		35.1	43.5	-8.4	V
139.994	47.5	11.1	-25.6	1.2		34.2	43.5	-9.3	V
499.984	52.2	17.5	-26.7	2.2		45.2	46.0	-0.8	VQ
499.985	47.0	17.5	-26.7	2.2		40.0	46.0	-6.0	HQ

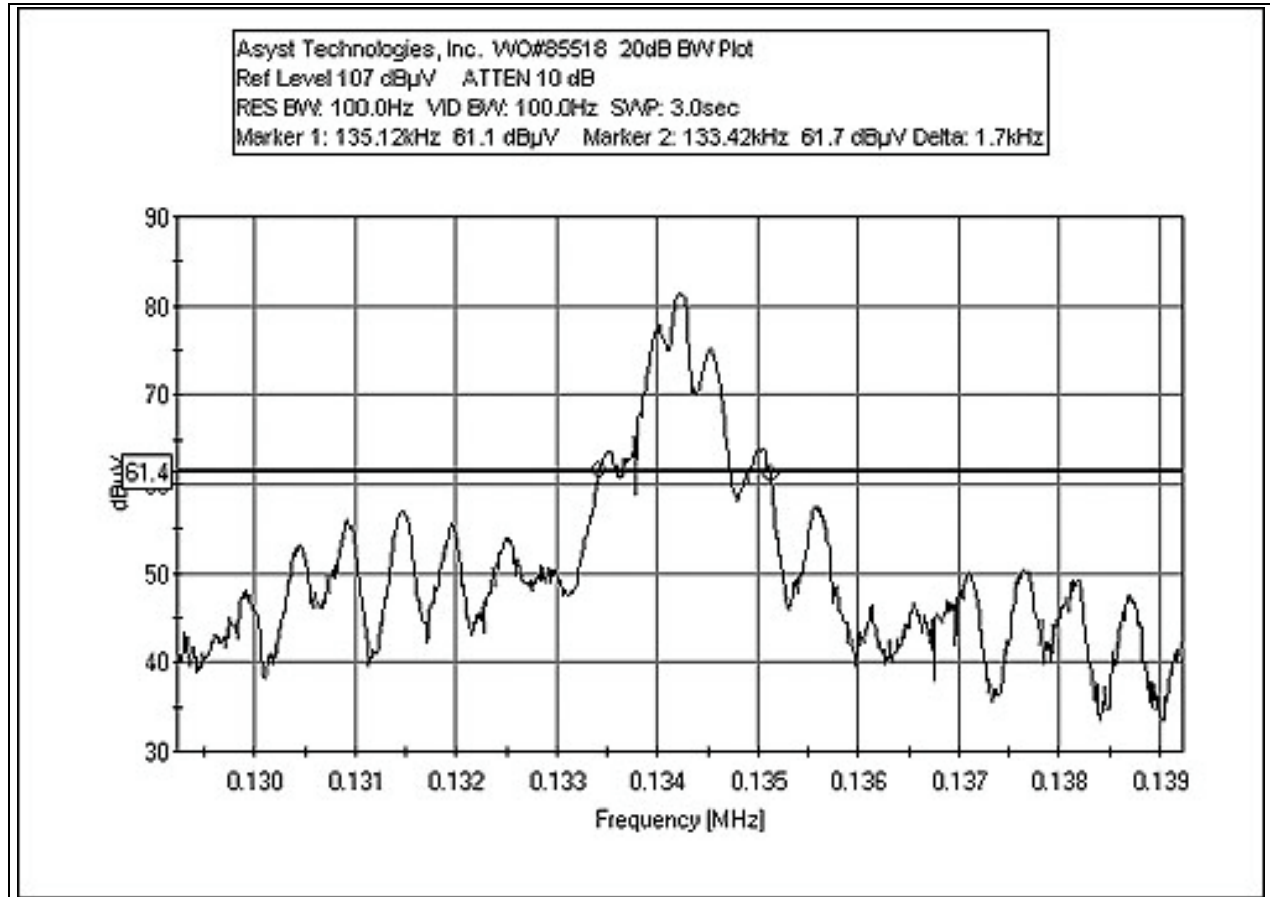
Test Method: ANSI C63.4 (2003)  
 Spec Limit: FCC Part 15 Subpart C Section 15.209  
 Test Distance: 3 Meters

NOTES: H = Horizontal Polarization  
 V = Vertical Polarization  
 Q = Quasi Peak Reading

COMMENTS: EUT, antenna & transponder are on the test table. The antenna and transponder are 1 inch away from each other and they are sitting on a 20 cm foam standoff. The laptop is outside of the chamber connected to the EUT via Ethernet cable. The laptop is used to control communications between the transponder and the EUT.



### 20dB BANDWIDTH PLOT



## 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 $\mu$ V/m, the spectrum analyzer reading in dB $\mu$ V was corrected by using the following formula in Table A. This reading was then compared to the applicable specification limit to determine compliance.

<b>TABLE A: SAMPLE CALCULATIONS</b>		
	Meter reading	(dB $\mu$ V)
+	Antenna Factor	(dB)
+	Cable Loss	(dB)
-	Distance Correction	(dB)
-	Preamplifier Gain	(dB)
=	Corrected Reading	(dB $\mu$ 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. The horn antenna was used for frequencies above 1000 MHz. 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 dB $\mu$ V, 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  $\mu$ H/+50 ohms. 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.

A thorough scan of all frequencies was made manually using a small frequency span, rotating the turntable and raising and lowering the antenna from one to four meters 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 PHOTOGRAPHS**

**PHOTOGRAPH SHOWING MAINS CONDUCTED EMISSIONS**



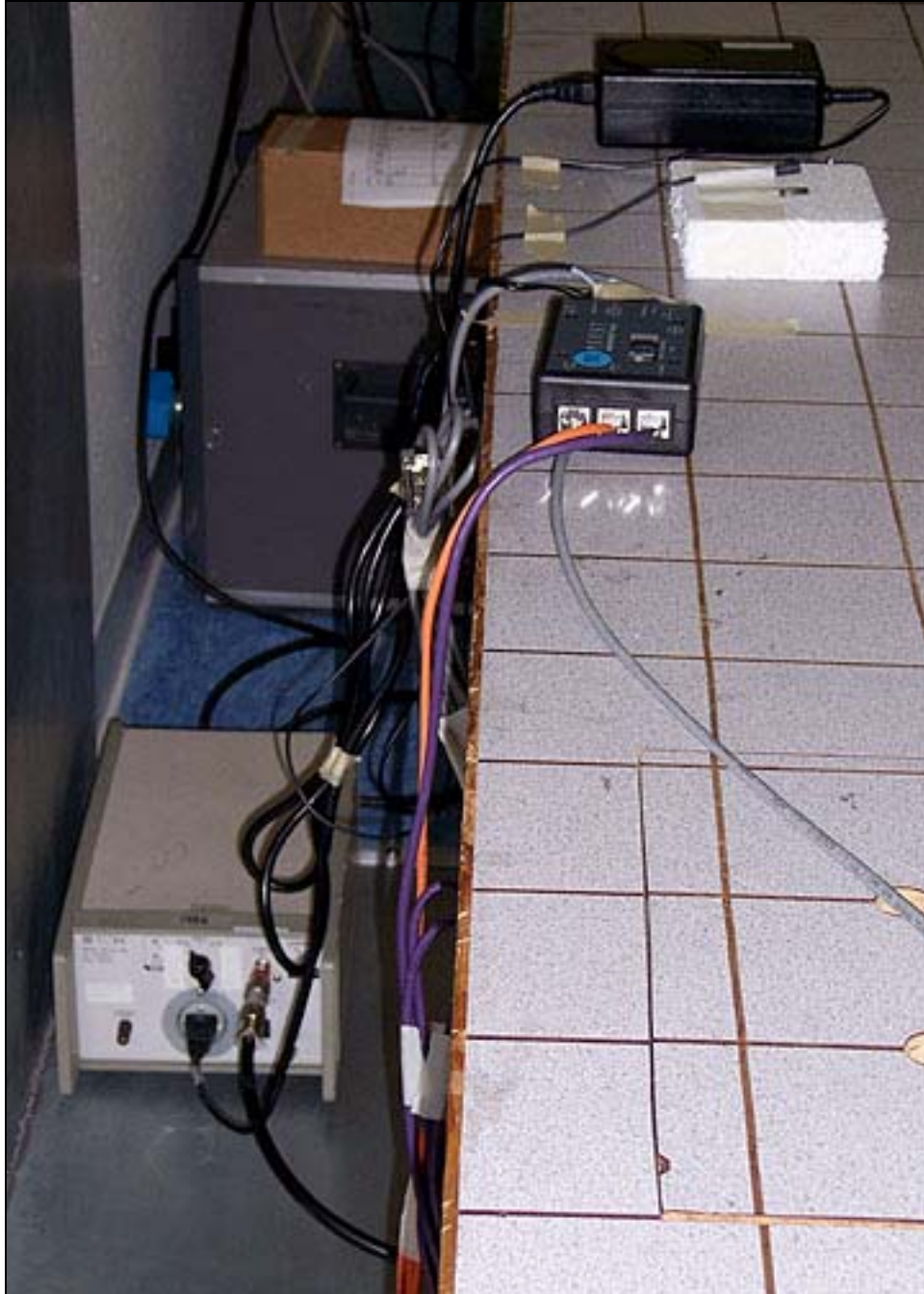
Mains Conducted Emissions - Front View

**PHOTOGRAPH SHOWING MAINS CONDUCTED EMISSIONS**



Mains Conducted Emissions - Front View

**PHOTOGRAPH SHOWING MAINS CONDUCTED EMISSIONS**



Mains Conducted Emissions - Side View



**PHOTOGRAPH SHOWING MAINS CONDUCTED EMISSIONS**



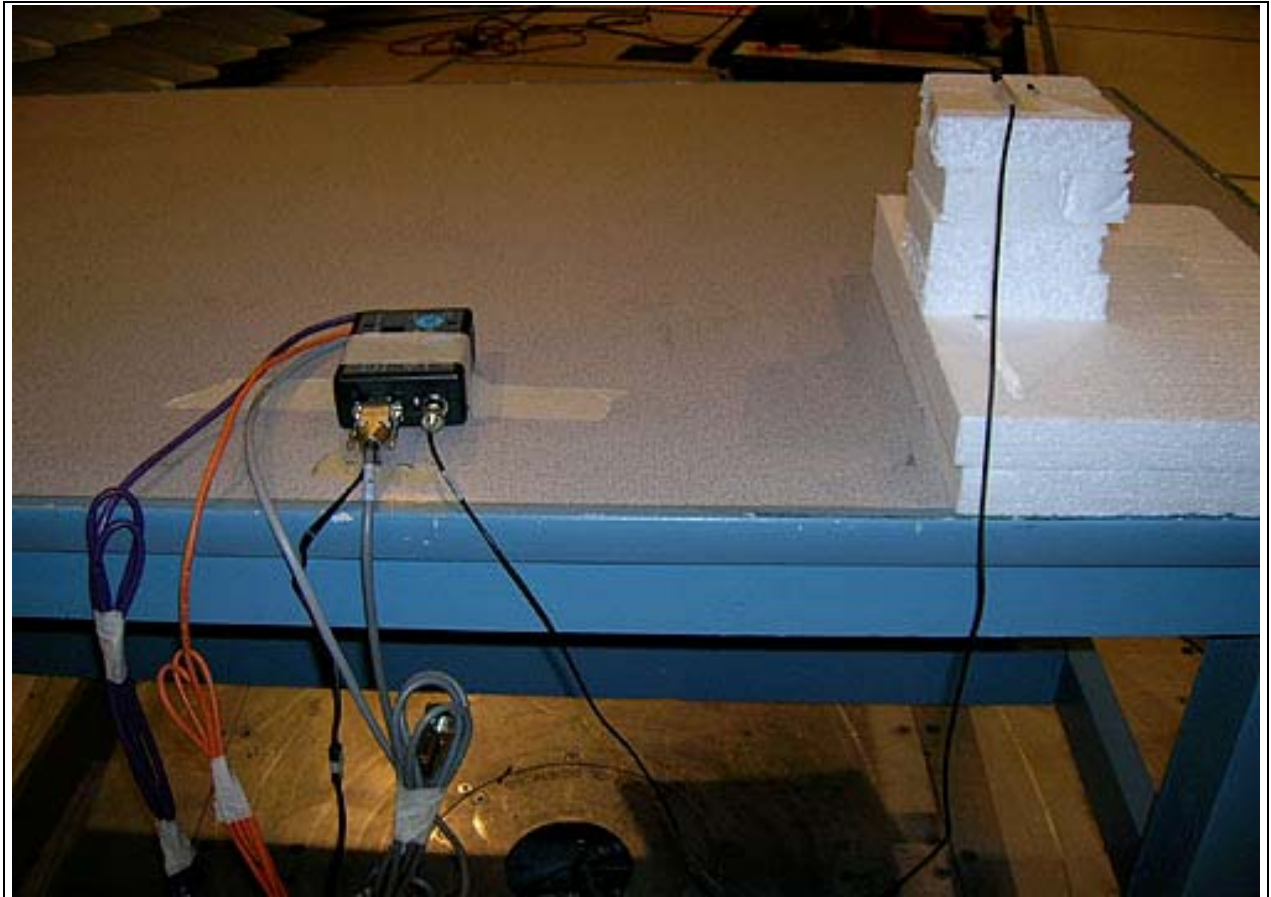
Mains Conducted Emissions - Side View

**PHOTOGRAPH SHOWING RADIATED EMISSIONS**



Radiated Emissions - Front View

**PHOTOGRAPH SHOWING RADIATED EMISSIONS**



Radiated Emissions - Back View

**PHOTOGRAPH SHOWING RADIATED EMISSIONS**



Radiated Emissions - Mag Loop

**PHOTOGRAPH SHOWING RADIATED EMISSIONS**



Radiated Emissions - Mag Loop

## APPENDIX B

### TEST EQUIPMENT LIST

***FCC 15.31(e)***

Function	S/N	Calibration Date	Cal Due Date	Asset #
S.A., Display HP-85662A	2542A12169	11/28/2005	11/28/2007	02662
S.A., RF Section HP-8568B	2601A02492	11/28/2005	11/28/2007	02663
QP Adapter HP-85650A	2043A00188	10/23/2004	10/23/2006	01508
CABLE	82' RG8	08/24/2005	08/24/2007	05012
Mag Loop - 6502	2078	05/13/2005	05/13/2007	00432
Digital Multi-Meter	65380320	7/18/06	7/18/08	02361
Tenna	0201714	NCR	NCR	Customer equipment

NCR = No Cal Required

***FCC 15.107/15.207***

Function	S/N	Calibration Date	Cal Due Date	Asset #
S.A., RF Section HP-8568B	2517A01665	04/21/2005	04/21/2007	02468
S.A., Display HP-85662A	2534A10178	04/21/2005	04/21/2007	2444
QP Adapter HP-85650A	2043A00286	11/18/2004	11/18/2006	00445
10 dB Pad		10/20/2005	10/20/2007	02223
15' RG214		03/01/2006	03/01/2008	P00875
TTE High Pass Filter	H4120	04/20/2005	04/20/2007	05258
LISN, Emco 3816/2	9408-1006	05/23/2005	05/13/2007	00493

***FCC 15.209 9 kHz – 30 MHz***

Function	S/N	Calibration Date	Cal Due Date	Asset #
S.A., Display HP-85662A	2542A12169	11/28/2005	11/28/2007	02662
S.A., RF Section HP-8568B	2601A02492	11/28/2005	11/28/2007	02663
QP Adapter HP-85650A	2043A00188	10/23/2004	10/23/2006	01508
CABLE	82' RG8	08/24/2005	08/24/2007	05012
Mag Loop - 6502	2078	05/13/2005	05/13/2007	00432

***FCC 15.109/15.209 30-1000 MHz***

Function	S/N	Calibration Date	Cal Due Date	Asset #
S.A., Display HP-85662A	2542A12169	11/28/2005	11/28/2007	02662
S.A., RF Section HP-8568B	2601A02492	11/28/2005	11/28/2007	02663
HP8447F opt H64 preamp	2944A03850	03/05/2005	03/05/2007	00501
QP Adapter HP-85650A	2043A00188	10/23/2004	10/23/2006	01508
Cable	None	06/21/2005	06/21/2007	P05299
Cable	None	06/21/2005	06/21/2007	P05300
Cable	None	06/21/2005	06/21/2007	P05296
Chase Bilog CBL6111C	2630	01/24/2005	01/24/2007	00852

**APPENDIX C:**  
**MEASUREMENT DATA SHEETS**

Test Location: CKC Laboratories, Inc. • 1120 Fulton Place • Fremont, CA 94539 • 510-249-1170

Customer: **Asyst Technologies**  
 Specification: **FCC 15.107A COND [AVE]**  
 Work Order #: **85518** Date: 8/7/2006  
 Test Type: **Conducted Emissions** Time: 16:28:21  
 Equipment: **Single Antenna Multiplexer** Sequence#: 11  
 Manufacturer: Asyst Technologies Tested By: Art Rice  
 Model: ATR-9100RoHS 120V 60Hz  
 S/N: 10-1907-104391

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

Function	Manufacturer	Model #	S/N
Antenna	Asyst Technologies	PN: 9700-9097-03	None
Single Antenna Multiplexer*	Asyst Technologies	ATR-9100RoHS	10-1907-104391

**Support Devices:**

Function	Manufacturer	Model #	S/N
32mm Glass Transponder	Texas Instruments	RI-TRP-RR2B	None
PS	ITE	PW102	06151A/Rev B
Laptop PS	Compaq	PP2040	3J08FBJ34803S88
Laptop	Compaq	PN 386315-002	00035544

**Test Conditions / Notes:**

EUT, antenna & transponder are on the test table. The antenna and transponder are 1 inch away from each other and they are sitting on a 20 cm foam standoff. The laptop is outside of the chamber connected to the EUT via Ethernet cable. The laptop is used to control communications between the transponder and the EUT. Conducted emissions 0.15-30 MHz.

**Transducer Legend:**

T1=ANP02223 10dB Attenuator	T2=Cable P00875, 15' RG214/U
T3=LISN - AN00493 - Black - ELC "OUT"	T4=TTE HP Filter P05258

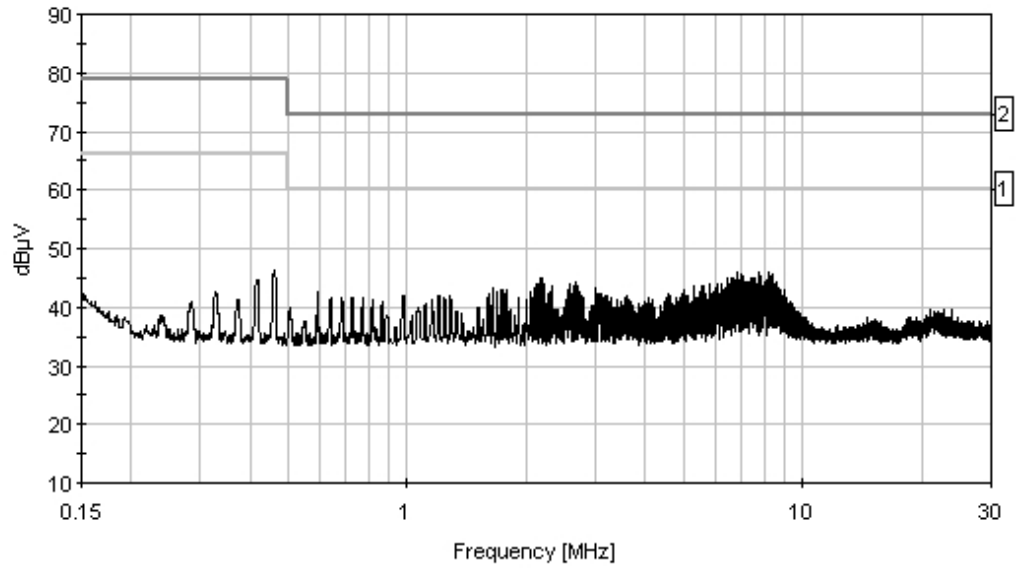
**Measurement Data:** Reading listed by margin. Test Lead: Black

#	Freq MHz	Rdng dB $\mu$ V	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dB $\mu$ V	Spec dB $\mu$ V	Margin dB	Polar Ant	
1	2.191M	30.6	+9.7	+0.1	+0.3	+0.1	+0.0	40.8	60.0	-19.2	Black	
Ave	^	2.183M	34.6	+9.7	+0.1	+0.3	+0.1	+0.0	44.8	60.0	-15.2	Black
3	2.633M	30.4	+9.7	+0.1	+0.4	+0.1	+0.0	40.7	60.0	-19.3	Black	
Ave	^	2.633M	33.4	+9.7	+0.1	+0.4	+0.1	+0.0	43.7	60.0	-16.3	Black
5	2.145M	30.4	+9.7	+0.1	+0.3	+0.1	+0.0	40.6	60.0	-19.4	Black	
Ave	^	2.142M	33.6	+9.7	+0.1	+0.3	+0.1	+0.0	43.8	60.0	-16.2	Black
7	2.589M	30.2	+9.7	+0.1	+0.4	+0.1	+0.0	40.5	60.0	-19.6	Black	
Ave	^	2.582M	33.7	+9.7	+0.1	+0.4	+0.1	+0.0	44.0	60.0	-16.0	Black



9	2.679M	30.1	+9.7	+0.1	+0.4	+0.1	+0.0	40.4	60.0	-19.6	Black
Ave											
^	2.676M	34.1	+9.7	+0.1	+0.4	+0.1	+0.0	44.4	60.0	-15.6	Black
11	2.234M	30.1	+9.7	+0.1	+0.3	+0.1	+0.0	40.3	60.0	-19.7	Black
Ave											
^	2.231M	33.9	+9.7	+0.1	+0.3	+0.1	+0.0	44.1	60.0	-15.9	Black
13	460.000k	34.4	+9.7	+0.1	+0.3	+0.0	+0.0	44.5	66.0	-21.5	Black
Ave											
^	463.423k	36.3	+9.7	+0.1	+0.3	+0.0	+0.0	46.4	66.0	-19.6	Black
15	416.000k	32.5	+9.7	+0.1	+0.3	+0.0	+0.0	42.6	66.0	-23.4	Black
Ave											
^	416.882k	34.6	+9.7	+0.1	+0.3	+0.0	+0.0	44.7	66.0	-21.3	Black
17	991.000k	24.6	+9.8	+0.0	+0.3	+0.0	+0.0	34.7	60.0	-25.3	Black
Ave											
^	994.819k	31.8	+9.8	+0.0	+0.3	+0.0	+0.0	41.9	60.0	-18.1	Black
19	594.000k	24.6	+9.7	+0.1	+0.3	+0.0	+0.0	34.7	60.0	-25.3	Black
Ave											
^	594.319k	32.5	+9.7	+0.1	+0.3	+0.0	+0.0	42.6	60.0	-17.4	Black

CKC Laboratories, Inc. Date: 8/7/2006 Time: 16:28:21 Asyst Technologies WVO#: 85518  
 FCC 15.107A COND [AVE] Test Lead: Black 120V 60Hz Sequence#: 11  
 AC Adapter is connected to LISN



— Sweep Data      — 1 - FCC 15.107A COND [AVE]      - - - 2 - FCC 15.107A COND [QP]

Test Location: CKC Laboratories, Inc. • 1120 Fulton Place • Fremont, CA 94539 • 510-249-1170

Customer: **Asyst Technologies**  
 Specification: **FCC 15.107A COND [AVE]**  
 Work Order #: **85518** Date: 8/7/2006  
 Test Type: **Conducted Emissions** Time: 16:45:35  
 Equipment: **Single Antenna Multiplexer** Sequence#: 12  
 Manufacturer: Asyst Technologies Tested By: Art Rice  
 Model: ATR-9100RoHS 120V 60Hz  
 S/N: 10-1907-104391

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

Function	Manufacturer	Model #	S/N
Antenna	Asyst Technologies	PN: 9700-9097-03	None
Single Antenna Multiplexer*	Asyst Technologies	ATR-9100RoHS	10-1907-104391

**Support Devices:**

Function	Manufacturer	Model #	S/N
PS	ITE	PW102	06151A/Rev B
Laptop PS	Compaq	PP2040	3J08FBJ34803S88
Laptop	Compaq	PN 386315-002	00035544
32mm Glass Transponder	Texas Instruments	RI-TRP-RR2B	None

**Test Conditions / Notes:**

EUT, antenna & transponder are on the test table. The antenna and transponder are 1 inch away from each other and they are sitting on a 20 cm foam standoff. The laptop is outside of the chamber connected to the EUT via Ethernet cable. The laptop is used to control communications between the transponder and the EUT. Conducted emissions 0.15-30 MHz.

**Transducer Legend:**

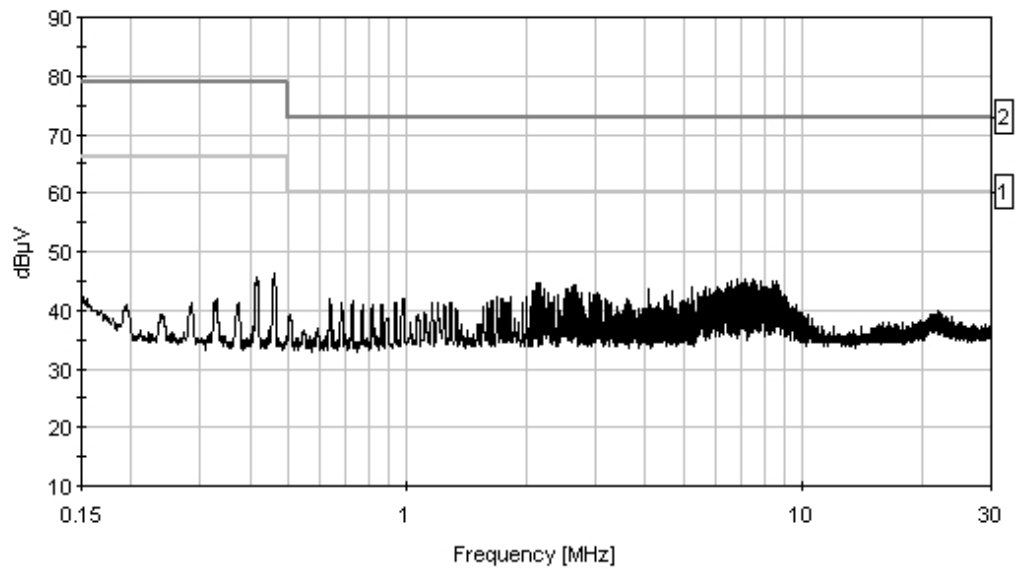
T1=ANP02223 10dB Attenuator	T2=Cable P00875, 15' RG214/U
T3=LISN - AN00493 - White - ELC "OUT"	T4=TTE HP Filter P05258

**Measurement Data:** Reading listed by margin. Test Lead: White

#	Freq MHz	Rdng dB $\mu$ V	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dB $\mu$ V	Spec dB $\mu$ V	Margin dB	Polar Ant
1	2.188M	30.0	+9.7	+0.1	+0.3	+0.1	+0.0	40.2	60.0	-19.9	White
Ave											
^	2.178M	34.4	+9.7	+0.1	+0.3	+0.1	+0.0	44.6	60.0	-15.4	White
3	2.144M	29.9	+9.7	+0.1	+0.3	+0.1	+0.0	40.1	60.0	-19.9	White
Ave											
^	2.142M	34.5	+9.7	+0.1	+0.3	+0.1	+0.0	44.7	60.0	-15.3	White
5	2.631M	29.6	+9.7	+0.1	+0.4	+0.1	+0.0	39.9	60.0	-20.1	White
Ave											
^	2.625M	34.1	+9.7	+0.1	+0.4	+0.1	+0.0	44.4	60.0	-15.6	White
7	2.676M	29.5	+9.7	+0.1	+0.4	+0.1	+0.0	39.8	60.0	-20.2	White
Ave											
^	2.668M	33.9	+9.7	+0.1	+0.4	+0.1	+0.0	44.2	60.0	-15.8	White

9	460.000k	34.0	+9.7	+0.1	+0.3	+0.0	+0.0	44.1	66.0	-22.0	White
Ave											
^	461.242k	36.1	+9.7	+0.1	+0.3	+0.0	+0.0	46.2	66.0	-19.8	White
11	415.000k	32.3	+9.7	+0.1	+0.3	+0.0	+0.0	42.4	66.0	-23.6	White
Ave											
^	414.701k	35.4	+9.7	+0.1	+0.3	+0.0	+0.0	45.5	66.0	-20.5	White

CKC Laboratories, Inc. Date: 8/7/2006 Time: 16:45:35 Asyst Technologies WVO#: 85518  
 FCC 15.107A COND [AVE] Test Lead: White 120V 60Hz Sequence#: 12  
 AC Adapter is connected to LISN



— Sweep Data      — 1 - FCC 15.107A COND [AVE]      — 2 - FCC 15.107A COND [QP]

Test Location: CKC Laboratories, Inc. • 1120 Fulton Place • Fremont, CA 94539 • 510-249-1170

Customer: **Asyst Technologies**  
 Specification: **FCC 15.109 Class A Radiated**  
 Work Order #: **85518** Date: 8/4/2006  
 Test Type: **Maximized Emissions** Time: 15:51:19  
 Equipment: **Single Antenna Multiplexer** Sequence#: 9  
 Manufacturer: Asyst Technologies Tested By: A. Brar  
 Model: ATR-9100RoHS  
 S/N: 10-1907-104391

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

Function	Manufacturer	Model #	S/N
Single Antenna Multiplexer*	Asyst Technologies	ATR-9100RoHS	10-1907-104391
Antenna	Asyst Technologies	PN: 9700-9097-03	None

**Support Devices:**

Function	Manufacturer	Model #	S/N
PS	ITE	PW102	06151A/Rev B
Laptop PS	Compaq	PP2040	3J08FBJ34803S88
Laptop	Compaq	PN 386315-002	00035544
32mm Glass Transponder	Texas Instruments	RI-TRP-RR2B	None

**Test Conditions / Notes:**

EUT, antenna & transponder are on the test table. The antenna and transponder are 1 inch away from each other and they are sitting on a 20 cm foam standoff. The laptop is outside of the chamber connected to the EUT via Ethernet cable. The laptop is used to control communications between the transponder and the EUT.

**Transducer Legend:**

T1=0852-Bi-Log Antenna	T2=Cable P05296 25' RG214 N-N
T3=Cable P05299 2' RG214 N-N	T4=Cable P05300 12' RG214 N-N
T5=Amp Cal.HP-8447F OPT H64- AN 00501	

**Measurement Data:** Reading listed by margin. Test Distance: 3 Meters

#	Freq MHz	Rdng dB $\mu$ V	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dB $\mu$ V/m	Spec dB $\mu$ V/m	Margin dB	Polar Ant
1	125.009M QP	60.9	+11.2 -25.7	+0.6	+0.1	+0.4	-10.0 305	37.4	43.5	-6.0	Vert 99
^	125.009M	61.4	+11.2 -25.7	+0.6	+0.1	+0.4	-10.0 305	38.0	43.5	-5.5	Vert 99
3	500.007M QP	56.3	+17.5 -26.7	+1.3	+0.2	+0.7	-10.0 186	39.3	46.4	-7.1	Horiz 147
^	500.007M	57.5	+17.5 -26.7	+1.3	+0.2	+0.7	-10.0 186	40.5	46.4	-5.9	Horiz 147
5	500.006M	54.9	+17.5 -26.7	+1.3	+0.2	+0.7	-10.0 146	37.9	46.4	-8.5	Vert 99
6	43.514M	50.4	+12.0 -26.2	+0.4	+0.1	+0.3	-10.0 40	27.0	39.1	-12.1	Horiz 121

7	140.017M	54.0	+11.1 -25.6	+0.7	+0.1	+0.4	-10.0 276	30.7	43.5	-12.8	Vert 99
8	250.010M	53.3	+12.3 -25.1	+0.9	+0.1	+0.5	-10.0 200	32.0	46.4	-14.4	Horiz 101
9	150.014M	50.2	+10.7 -25.7	+0.7	+0.1	+0.4	-10.0 130	26.4	43.5	-17.1	Vert 99
10	50.015M	46.5	+8.5 -26.1	+0.4	+0.1	+0.2	-10.0 271	19.6	39.1	-19.5	Vert 100

Test Location: CKC Laboratories, Inc. • 1120 Fulton Place • Fremont, CA 94539 • 510-249-1170

Customer: **Asyst Technologies**  
 Specification: **FCC 15.207 COND [AVE]**  
 Work Order #: **85518** Date: 8/7/2006  
 Test Type: **Conducted Emissions** Time: 16:28:21  
 Equipment: **Single Antenna Multiplexer** Sequence#: 11  
 Manufacturer: Asyst Technologies Tested By: Art Rice  
 Model: ATR-9100RoHS 120V 60Hz  
 S/N: 10-1907-104391

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

Function	Manufacturer	Model #	S/N
Antenna	Asyst Technologies	PN: 9700-9097-03	None
Single Antenna Multiplexer*	Asyst Technologies	ATR-9100RoHS	10-1907-104391

**Support Devices:**

Function	Manufacturer	Model #	S/N
32mm Glass Transponder	Texas Instruments	RI-TRP-RR2B	None
PS	ITE	PW102	06151A/Rev B
Laptop PS	Compaq	PP2040	3J08FBJ34803S88
Laptop	Compaq	PN 386315-002	00035544

**Test Conditions / Notes:**

EUT, antenna & transponder are on the test table. The antenna and transponder are 1 inch away from each other and they are sitting on a 20 cm foam standoff. The laptop is outside of the chamber connected to the EUT via Ethernet cable. The laptop is used to control communications between the transponder and the EUT. Conducted emissions 0.15-30 MHz.

**Transducer Legend:**

T1=ANP02223 10dB Attenuator	T2=Cable P00875, 15' RG214/U
T3=LISN - AN00493 - Black - ELC "OUT"	T4=TTE HP Filter P05258

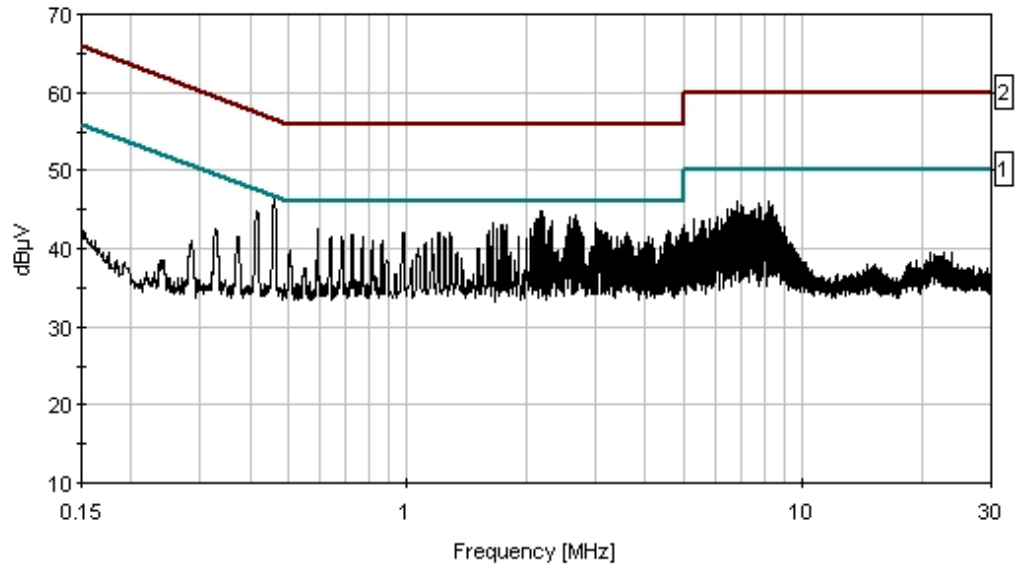
**Measurement Data:** Reading listed by margin. Test Lead: Black

#	Freq MHz	Rdng dB $\mu$ V	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dB $\mu$ V	Spec dB $\mu$ V	Margin dB	Polar Ant
1	460.000k	34.4	+9.7	+0.1	+0.3	+0.0	+0.0	44.5	46.7	-2.2	Black
Ave	^	463.423k	36.3	+9.7	+0.1	+0.3	+0.0	46.4	46.6	-0.2	Black
3	416.000k	32.5	+9.7	+0.1	+0.3	+0.0	+0.0	42.6	47.5	-4.9	Black
Ave	^	416.882k	34.6	+9.7	+0.1	+0.3	+0.0	44.7	47.5	-2.8	Black
5	2.191M	30.6	+9.7	+0.1	+0.3	+0.1	+0.0	40.8	46.0	-5.2	Black
Ave	^	2.183M	34.6	+9.7	+0.1	+0.3	+0.1	44.8	46.0	-1.2	Black
7	2.633M	30.4	+9.7	+0.1	+0.4	+0.1	+0.0	40.7	46.0	-5.3	Black
Ave	^	2.633M	33.4	+9.7	+0.1	+0.4	+0.1	43.7	46.0	-2.3	Black

9	2.145M	30.4	+9.7	+0.1	+0.3	+0.1	+0.0	40.6	46.0	-5.4	Black
Ave											
^	2.142M	33.6	+9.7	+0.1	+0.3	+0.1	+0.0	43.8	46.0	-2.2	Black
11	2.589M	30.2	+9.7	+0.1	+0.4	+0.1	+0.0	40.4	46.0	-5.6	Black
Ave											
^	2.582M	33.7	+9.7	+0.1	+0.4	+0.1	+0.0	44.0	46.0	-2.0	Black
13	2.679M	30.1	+9.7	+0.1	+0.4	+0.1	+0.0	40.4	46.0	-5.6	Black
Ave											
^	2.676M	34.1	+9.7	+0.1	+0.4	+0.1	+0.0	44.4	46.0	-1.6	Black
15	2.234M	30.1	+9.7	+0.1	+0.3	+0.1	+0.0	40.3	46.0	-5.7	Black
Ave											
^	2.231M	33.9	+9.7	+0.1	+0.3	+0.1	+0.0	44.1	46.0	-1.9	Black
17	991.000k	24.6	+9.8	+0.0	+0.3	+0.0	+0.0	34.7	46.0	-11.3	Black
Ave											
^	994.819k	31.8	+9.8	+0.0	+0.3	+0.0	+0.0	41.9	46.0	-4.1	Black
19	594.000k	24.6	+9.7	+0.1	+0.3	+0.0	+0.0	34.7	46.0	-11.3	Black
Ave											
^	594.319k	32.5	+9.7	+0.1	+0.3	+0.0	+0.0	42.6	46.0	-3.4	Black



CKC Laboratories, Inc. Date: 8/7/2006 Time: 16:28:21 Asyst Technologies WVO#: 85518  
 FCC 15.207 COND [AVE] Test Lead: Black 120V 60Hz Sequence#: 11  
 AC Adapter is connected to LISN



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

Test Location: CKC Laboratories, Inc. • 1120 Fulton Place • Fremont, CA 94539 • 510-249-1170

Customer: **Asyst Technologies**  
 Specification: **FCC 15.207 COND [AVE]**  
 Work Order #: **85518** Date: 8/7/2006  
 Test Type: **Conducted Emissions** Time: 16:45:35  
 Equipment: **Single Antenna Multiplexer** Sequence#: 12  
 Manufacturer: Asyst Technologies Tested By: Art Rice  
 Model: ATR-9100RoHS 120V 60Hz  
 S/N: 10-1907-104391

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

Function	Manufacturer	Model #	S/N
Antenna	Asyst Technologies	PN: 9700-9097-03	None
Single Antenna Multiplexer*	Asyst Technologies	ATR-9100RoHS	10-1907-104391

**Support Devices:**

Function	Manufacturer	Model #	S/N
32mm Glass Transponder	Texas Instruments	RI-TRP-RR2B	None
PS	ITE	PW102	06151A/Rev B
Laptop PS	Compaq	PP2040	3J08FBJ34803S88
Laptop	Compaq	PN 386315-002	00035544

**Test Conditions / Notes:**

EUT, antenna & transponder are on the test table. The antenna and transponder are 1 inch away from each other and they are sitting on a 20 cm foam standoff. The laptop is outside of the chamber connected to the EUT via Ethernet cable. The laptop is used to control communications between the transponder and the EUT. Conducted emissions 0.15-30 MHz.

**Transducer Legend:**

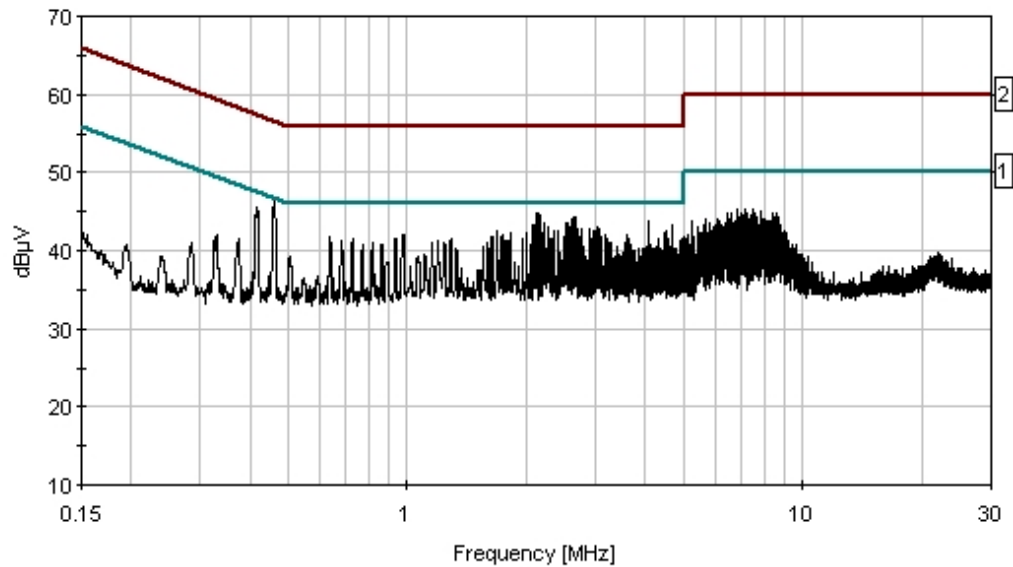
T1=ANP02223 10dB Attenuator	T2=Cable P00875, 15' RG214/U
T3=LISN - AN00493 - White - ELC "OUT"	T4=TTE HP Filter P05258

**Measurement Data:** Reading listed by margin. Test Lead: White

#	Freq MHz	Rdng dB $\mu$ V	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dB $\mu$ V	Spec dB $\mu$ V	Margin dB	Polar Ant
1	460.000k	34.0	+9.7	+0.1	+0.3	+0.0	+0.0	44.1	46.7	-2.6	White
Ave											
^	461.242k	36.1	+9.7	+0.1	+0.3	+0.0	+0.0	46.2	46.7	-0.5	White
3	415.000k	32.3	+9.7	+0.1	+0.3	+0.0	+0.0	42.4	47.5	-5.1	White
Ave											
^	414.701k	35.4	+9.7	+0.1	+0.3	+0.0	+0.0	45.5	47.6	-2.1	White
5	2.188M	30.0	+9.7	+0.1	+0.3	+0.1	+0.0	40.2	46.0	-5.8	White
Ave											
^	2.178M	34.4	+9.7	+0.1	+0.3	+0.1	+0.0	44.6	46.0	-1.4	White
7	2.144M	29.9	+9.7	+0.1	+0.3	+0.1	+0.0	40.1	46.0	-5.9	White
Ave											
^	2.142M	34.5	+9.7	+0.1	+0.3	+0.1	+0.0	44.7	46.0	-1.3	White

9	2.631M	29.6	+9.7	+0.1	+0.4	+0.1	+0.0	39.9	46.0	-6.1	White
Ave											
^	2.625M	34.1	+9.7	+0.1	+0.4	+0.1	+0.0	44.4	46.0	-1.6	White
11	2.676M	29.5	+9.7	+0.1	+0.4	+0.1	+0.0	39.8	46.0	-6.2	White
Ave											
^	2.668M	33.9	+9.7	+0.1	+0.4	+0.1	+0.0	44.2	46.0	-1.8	White

CKC Laboratories, Inc. Date: 8/7/2006 Time: 16:45:35 Asyst Technologies WWO#: 85518  
 FCC 15.207 COND [AVE] Test Lead: White 120V 60Hz Sequence#: 12  
 AC Adapter is connected to LISN



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

Test Location: CKC Laboratories, Inc. • 1120 Fulton Place • Fremont, CA 94539 • 510-249-1170

Customer: **Asyst Technologies**  
 Specification: **FCC 15.209**  
 Work Order #: **85518** Date: 8/8/2006  
 Test Type: **Maximized Emissions** Time: 16:59:44  
 Equipment: **Single Antenna Multiplexer** Sequence#: 20  
 Manufacturer: Asyst Technologies Tested By: A. Brar  
 Model: ATR-9100RoHS  
 S/N: 10-1907-104391

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

Function	Manufacturer	Model #	S/N
Antenna	Asyst Technologies	PN: 9700-9097-03	None
Single Antenna Multiplexer*	Asyst Technologies	ATR-9100RoHS	10-1907-104391

**Support Devices:**

Function	Manufacturer	Model #	S/N
32mm Glass Transponder	Texas Instruments	RI-TRP-RR2B	None
PS	ITE	PW102	06151A/Rev B
Laptop PS	Compaq	PP2040	3J08FBJ34803S88
Laptop	Compaq	PN 386315-002	00035544

**Test Conditions / Notes:**

EUT, antenna & transponder are on the test table. The antenna and transponder are 1 inch away from each other and they are sitting on a 20 cm foam standoff. The laptop is outside of the chamber connected to the EUT via Ethernet cable. The laptop is used to control communications between the transponder and the EUT. Fall off factor of 40dB/decade applied to readings.

**Transducer Legend:**

T1=Mag Loop - AN 00432- 9kHz-30M	T2=Cable 82' RG8 PN 05012
T3=15.31 3m 40dB/Dec Correction	

**Measurement Data:**

Reading listed by margin.

Test Distance: 3 Meters

#	Freq MHz	Rdng dB $\mu$ V	T1 dB	T2 dB	T3 dB	Dist Table	Corr dB $\mu$ V/m	Spec dB $\mu$ V/m	Margin dB	Polar Ant
1	5.342M	38.6	+9.2	+0.3	-40.0	+0.0	8.1	29.5	-21.4	Horiz
2	135.130k	73.0	+9.3	+0.1	-80.0	+0.0	2.4	25.0	-22.6	Horiz
Fundamental										
3	4.786M	35.7	+9.2	+0.3	-40.0	+0.0	5.2	29.5	-24.3	Vert
4	135.130k	71.0	+9.3	+0.1	-80.0	+0.0	0.4	25.0	-24.6	Vert
Fundamental										
5	7.461M	35.3	+9.1	+0.4	-40.0	+0.0	4.8	29.5	-24.7	Vert
6	15.592M	32.9	+8.5	+0.6	-40.0	+0.0	2.0	29.5	-27.5	Vert
7	6.381M	31.0	+9.2	+0.3	-40.0	+0.0	0.5	29.5	-29.0	Horiz
8	265.200k	52.6	+9.4	+0.1	-80.0	+0.0	-17.9	19.1	-37.0	Horiz

9	313.100k	50.1	+9.4	+0.1	-80.0	+0.0	-20.4	17.7	-38.1	Horiz
10	264.800k	51.3	+9.4	+0.1	-80.0	+0.0	-19.2	19.1	-38.3	Horiz
11	403.100k	47.2	+9.3	+0.1	-80.0	+0.0	-23.4	15.5	-38.9	Horiz
12	57.960k	62.9	+9.9	+0.1	-80.0	+0.0	-7.1	32.3	-39.4	Horiz
13	400.600k	45.7	+9.3	+0.1	-80.0	+0.0	-24.9	15.5	-40.4	Horiz
14	378.600k	45.3	+9.3	+0.1	-80.0	+0.0	-25.3	16.0	-41.3	Horiz
15	286.500k	47.4	+9.4	+0.1	-80.0	+0.0	-23.1	18.5	-41.6	Horiz
16	102.350k	44.9	+9.3	+0.1	-80.0	+0.0	-25.7	27.4	-53.1	Horiz
17	17.740k	54.6	+12.5	+0.0	-80.0	+0.0	-12.9	42.6	-55.5	Horiz

Test Location: CKC Laboratories, Inc. • 1120 Fulton Place • Fremont, CA 94539 • 510-249-1170

Customer: **Asyst Technologies**  
 Specification: **FCC 15.209 30MHz to 1 GHz**  
 Work Order #: **85518** Date: 8/7/2006  
 Test Type: **Maximized Emissions** Time: 10:10:09  
 Equipment: **Single Antenna Multiplexer** Sequence#: 10  
 Manufacturer: Asyst Technologies Tested By: A. Brar  
 Model: ATR-9100RoHS  
 S/N: 10-1907-104391

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

Function	Manufacturer	Model #	S/N
Antenna	Asyst Technologies	PN: 9700-9097-03	None
Single Antenna Multiplexer*	Asyst Technologies	ATR-9100RoHS	10-1907-104391

**Support Devices:**

Function	Manufacturer	Model #	S/N
32mm Glass Transponder	Texas Instruments	RI-TRP-RR2B	None
PS	ITE	PW102	06151A/Rev B
Laptop PS	Compaq	PP2040	3J08FBJ34803S88
Laptop	Compaq	PN 386315-002	00035544

**Test Conditions / Notes:**

EUT, antenna & transponder are on the test table. The antenna and transponder are 1 inch away from each other and they are sitting on a 20 cm foam standoff. The laptop is outside of the chamber connected to the EUT via Ethernet cable. The laptop is used to control communications between the transponder and the EUT.

**Transducer Legend:**

T1=0852-Bi-Log Antenna	T2=Cable P05296 25' RG214 N-N
T3=Cable P05299 2' RG214 N-N	T4=Cable P05300 12' RG214 N-N
T5=Amp Cal.HP-8447F OPT H64- AN 00501	

**Measurement Data:** Reading listed by margin. Test Distance: 3 Meters

#	Freq MHz	Rdng dBμV	Reading listed by margin.				Test Distance: 3 Meters				
			T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dBμV/m	Spec dBμV/m	Margin dB	Polar Ant
1	499.984M	52.2	+17.5	+1.3	+0.2	+0.7	+0.0	45.2	46.0	-0.8	Vert
	QP		-26.7				153				99
^	499.984M	53.6	+17.5	+1.3	+0.2	+0.7	+0.0	46.6	46.0	+0.6	Vert
			-26.7				153				99
3	499.985M	47.0	+17.5	+1.3	+0.2	+0.7	+0.0	40.0	46.0	-6.0	Horiz
	QP		-26.7				-11				99
^	499.985M	47.8	+17.5	+1.3	+0.2	+0.7	+0.0	40.8	46.0	-5.2	Horiz
			-26.7				-11				99
5	42.027M	45.2	+12.8	+0.4	+0.1	+0.2	+0.0	32.5	40.0	-7.5	Horiz
	QP		-26.2				147				98
^	42.027M	49.0	+12.8	+0.4	+0.1	+0.2	+0.0	36.3	40.0	-3.7	Horiz
			-26.2				147				98

7	124.985M	48.5	+11.2 -25.7	+0.6	+0.1	+0.4	+0.0 113	35.1	43.5	-8.4	Vert 100
8	139.994M	47.5	+11.1 -25.6	+0.7	+0.1	+0.4	+0.0 -9	34.2	43.5	-9.3	Vert 100
9	49.524M	45.1	+8.8 -26.1	+0.4	+0.1	+0.2	+0.0 329	28.5	40.0	-11.5	Vert 100
10	249.983M	42.1	+12.3 -25.1	+0.9	+0.1	+0.5	+0.0 68	30.8	46.0	-15.2	Horiz 99