



ADDENDUM TO ASYST TECHNOLOGIES TEST REPORT FC07-086

FOR THE

RFID TAG READER/MULTIPLEXER, ATR 9880

FCC PART 15 SUBART B SECTIONS 15.107 & 15.109 CLASS B

AND

FCC PART 15 SUBPART C SECTION 15.207 & 15.209

TESTING

DATE OF ISSUE: NOVEMBER 30, 2007

PREPARED FOR:

Asyst Technologies
46897 Bayside Parkway
Fremont, CA 94538-6572

W.O. No.: 87011

PREPARED BY:

Mary Ellen Clayton
CKC Laboratories, Inc.
5046 Sierra Pines Drive
Mariposa, CA 95338

Date of test: August 31 - October 11, 2007

Report No.: FC07-086A

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ADMINISTRATIVE INFORMATION

DATE OF TEST: August 31 - October 11, 2007

DATE OF RECEIPT: August 31, 2007

REPRESENTATIVE: Tou Vang

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

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

TEST METHOD: ANSI C63.4 (2003)

PURPOSE OF TEST:

Original Report: To perform the testing of the RFID Tag Reader/Multiplexer, ATR 9880 with the requirements for FCC Part 15 Subpart B Sections 15.107 & 15.109 Class B and FCC Part 15 Subpart C Section 15.207 & 15.209 devices.

Addendum A: To revise the 15.203 statement on page 4 with no new testing.

APPROVALS

Steve Behm, Director of Engineering Services

QUALITY ASSURANCE:

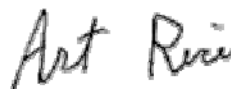


Joyce Walker, Quality Assurance Administrative Manager



Amrinder Brar,
EMC Engineer/Lab Manager

TEST PERSONNEL:



Art Rice,
EMC Engineer



Norberto Gamez Jr.,
Test Technologist



Christine Nicklas, Senior EMC
Engineer/Consultant

CONDITIONS DURING TESTING

During radiated emissions caps were added to enet.

FCC 15.31(e) Voltage Variations

Transmit fundamental was also measured at +/-15% (20.4 and 27.6 Volts) and no change in the level was seen.

Test Equipment

Function	Model/Type	Manufacturer	Serial No.	Cal Date	Cal Due
Spectrum Analyzer	E4446A	Agilent	US44300408	03-05-07	03-05-09
Active loop	6502	EMCO	2078	06-11-07	06-11-09
Cable	RG214/U	Pasternack	ANP05300	04-05-07	04-05-09
Cable	RG214/U	Pasternack	ANP05296	04-05-07	04-05-09
Digital Multimeter	23	Fluke	54541580	07-18-06	07-18-08
DC supply	72-6610	Tenma	0201714	09-07-06	09-07-08
Cable	RG214/U	Pasternack	ANP05299	04-05-07	04-05-09

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: 9 kHz – 1000 MHz

15.207 Conducted Emissions: 150 kHz – 30 MHz

15.209 Radiated Emissions: 9 kHz – 1000 MHz

FCC SECTION 15.35: ANALYZER BANDWIDTH SETTINGS PER FREQUENCY RANGE			
TEST	BEGINNING FREQUENCY	ENDING FREQUENCY	BANDWIDTH SETTING
RADIATED EMISSIONS	9 kHz	150 kHz	200 Hz
RADIATED EMISSIONS	150 kHz	30 MHz	9 kHz
RADIATED EMISSIONS	30 MHz	1000 MHz	1 MHz

FCC 15.203 Antenna Requirements

The antenna requires professional installation; therefore the EUT complies with Section 15.203 of the FCC rules.

EUT Operating Frequency

The EUT was operating at 134.205 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

RFID Tag Reader/Multiplexer

Manuf: Asyst Technologies
Model: ATR 9880
Serial: 001
FCC ID: pending

Antenna

Manuf: Asyst Technologies
Model: PN 9701-2883-04 Rev 002
Serial: 4

PERIPHERAL DEVICES

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

Antenna (7 each)

Manuf: Asyst Technologies
Model: PN 9701-2883-02
Serial: 2, 3, 4, 5 (3 with no serial number)

Host PC

Manuf: Compaq
Model: Armada M700
Serial: 01811

AC Adapter for PC

Manuf: Compaq
Model: Series PPP0002D
Serial: 386315-001

24CDV Power Supply

Manuf: AULT
Model: PW102
Serial: NA

REPORT OF EMISSIONS MEASUREMENTS

TESTING PARAMETERS

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

The equipment under test (EUT) was set up in a manner that represented its normal use, as shown in the setup photographs. Any special conditions required for the EUT to operate normally are identified in the comments that accompany the emissions tables.

The emissions data was taken with a spectrum analyzer or receiver. Incorporating the applicable correction factors for distance, antenna, cable loss and amplifier gain, the data was reduced as shown in the table below. The corrected data was then compared to the applicable emission limits. 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. This reading was then compared to the applicable specification limit.

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 were used to collect the emissions data. A spectrum analyzer or receiver was used for all measurements. The following table shows the measuring equipment bandwidth settings that were used in designated frequency bands. For testing emissions, an appropriate reference level and a vertical scale size of 10 dB per division were used. When conducted emissions testing was performed, a 10 dB external attenuator was used with internal offset correction in the analyzer.

SPECTRUM ANALYZER/RECEIVER DETECTOR FUNCTIONS

The notes that accompany the measurements contained in the emissions 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 highest readings, this is indicated as a "QP" or an "Ave" on the appropriate rows of the data sheets. 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/receiver readings were recorded all emissions at their peak value as the frequency band selected was scanned. By combining this function with another feature of the measuring device called "peak hold," the measuring device had the ability to measure transients or low duty cycle transient emission peak levels. In this mode the measuring device 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 quasi-peak detector.

Average

For certain frequencies, average measurements may be made using the spectrum analyzer/receiver. To make these measurements, the test engineer reduces the video bandwidth on the measuring device until the modulation of the signal is filtered out. At this point the measuring device is set into the linear mode and the scan time is reduced.

FCC 15.107 CONDUCTED EMISSIONS

Test Setup Photos



Test Data Sheets

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

Customer: **Asyst Technologies**
 Specification: **FCC 15.107 B COND [AVE]**
 Work Order #: **87011** Date: 9/10/2007
 Test Type: **Conducted Emissions** Time: 16:12:48
 Equipment: **RFID Tag Reader/Multiplexer** Sequence#: 20
 Manufacturer: Asyst Technologies Tested By: Robert Gamez
 Model: ATR 9880 120V 60Hz
 S/N: 001

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
SA - E4440A	MH46186315	02/15/2007	02/15/2009	02870
TTE High Pass Filter	H4120	01/17/2007	01/17/2009	05258
LISN	9408-1006	04/01/2007	04/01/2009	00493
Cable	none	06/13/2006	06/13/2008	0880
Attenuator	none	10/20/2005	10/20/2007	02223

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
RFID Tag Reader/Multiplexer*	Asyst Technologies	ATR 9880	001
Antenna	Asyst Technologies	PN 9701-2883-04 Rev 002	4

Support Devices:

Function	Manufacturer	Model #	S/N
Antenna	Asyst Technologies	PN 9701-2883-02	2
Antenna	Asyst Technologies	PN 9701-2883-02	3
Antenna	Asyst Technologies	PN 9701-2883-02	4
Antenna	Asyst Technologies	PN 9701-2883-02	5
Antenna	Asyst Technologies	PN 9701-2883-02	none
Antenna	Asyst Technologies	PN 9701-2883-02	none
Antenna	Asyst Technologies	PN 9701-2883-02	none
Host PC	Compaq	Armada M700	01811
AC Adapter for PC	Compaq	Series PPP0002D	386315-001
24CDV Power Supply	AULT	PW102	none

Test Conditions / Notes:

The ATR9800 8 Antenna Multiplexer: The host Dell PC is running Secsim Pro software and sending Read ID Commands over the serial connection. Only antenna #1 is active during communications. The remaining seven antennas are connected but not energized. An unterminated Ethernet cable is attached. The EUT is powered by 24 VDC from a power supply on the floor. Notes: 1) Unterminated cables are connected to two of the remote I/O ports. 2) EUT is in Active Mode. Conducted Emissions 0.15-30 MHz. Temperature: 23°C, Humidity: 50%.

Transducer Legend:

T1=LISN - AN00493 - Black - ELC "OUT"	T2=ANP02223-082707
T3=Cable P00880	T4=TTE HP Filter

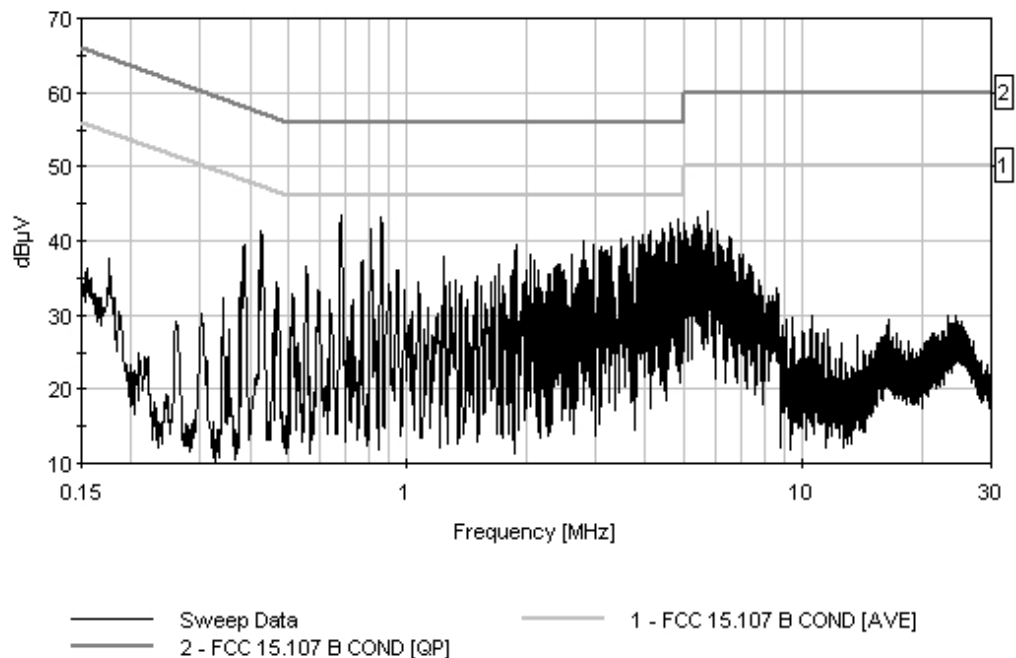
Measurement Data: Reading listed by margin. Test Lead: Black

#	Freq MHz	Rdng dB μ V	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dB μ V	Spec dB μ V	Margin dB	Polar Ant
1	680.199k	31.9	+0.0	+10.1	+0.1	+0.1	+0.0	42.2	46.0	-3.8	Black
	QP										
2	859.026k	31.2	+0.0	+10.0	+0.2	+0.2	+0.0	41.6	46.0	-4.4	Black
	QP										
3	809.576k	31.1	+0.0	+10.1	+0.2	+0.2	+0.0	41.6	46.0	-4.4	Black
4	4.407M	31.4	+0.0	+10.0	+0.1	+0.1	+0.0	41.6	46.0	-4.4	Black
5	4.705M	31.0	+0.1	+10.1	+0.2	+0.1	+0.0	41.5	46.0	-4.5	Black
6	4.105M	31.0	+0.0	+10.0	+0.1	+0.1	+0.0	41.2	46.0	-4.8	Black
7	4.875M	30.6	+0.1	+10.1	+0.2	+0.1	+0.0	41.1	46.0	-4.9	Black
8	4.492M	30.5	+0.1	+10.1	+0.2	+0.1	+0.0	41.0	46.0	-5.0	Black
9	4.062M	30.7	+0.0	+10.0	+0.1	+0.1	+0.0	40.9	46.0	-5.1	Black
10	3.931M	30.6	+0.0	+10.0	+0.1	+0.1	+0.0	40.8	46.0	-5.2	Black
11	4.662M	30.3	+0.1	+10.1	+0.2	+0.1	+0.0	40.8	46.0	-5.2	Black
12	3.718M	30.3	+0.0	+10.0	+0.1	+0.1	+0.0	40.5	46.0	-5.5	Black
13	4.747M	30.0	+0.1	+10.1	+0.2	+0.1	+0.0	40.5	46.0	-5.5	Black
14	4.618M	29.7	+0.1	+10.1	+0.2	+0.1	+0.0	40.2	46.0	-5.8	Black
	QP										
15	3.463M	29.9	-0.1	+10.1	+0.2	+0.1	+0.0	40.2	46.0	-5.8	Black
16	2.778M	29.8	-0.1	+10.1	+0.2	+0.1	+0.0	40.1	46.0	-5.9	Black
17	4.830M	29.5	+0.1	+10.1	+0.2	+0.1	+0.0	40.0	46.0	-6.0	Black
	QP										
18	4.960M	29.5	+0.1	+10.1	+0.2	+0.1	+0.0	40.0	46.0	-6.0	Black
19	3.854M	29.7	+0.0	+10.0	+0.1	+0.1	+0.0	39.9	46.0	-6.1	Black
20	4.275M	29.7	+0.0	+10.0	+0.1	+0.1	+0.0	39.9	46.0	-6.1	Black
21	5.734M	33.4	+0.1	+10.1	+0.2	+0.1	+0.0	43.9	50.0	-6.1	Black
22	427.793k	30.8	+0.1	+10.0	+0.2	+0.1	+0.0	41.2	47.3	-6.1	Black

23	4.360M	29.5	+0.0	+10.0	+0.1	+0.1	+0.0	39.7	46.0	-6.3	Black
24	4.577M	29.2	+0.1	+10.1	+0.2	+0.1	+0.0	39.7	46.0	-6.3	Black
25	3.595M	29.4	+0.0	+10.0	+0.1	+0.1	+0.0	39.6	46.0	-6.4	Black
26	3.892M	29.4	+0.0	+10.0	+0.1	+0.1	+0.0	39.6	46.0	-6.4	Black
27	3.977M	29.4	+0.0	+10.0	+0.1	+0.1	+0.0	39.6	46.0	-6.4	Black
28	1.881M	29.1	+0.0	+10.1	+0.2	+0.1	+0.0	39.5	46.0	-6.5	Black
29	4.322M	29.3	+0.0	+10.0	+0.1	+0.1	+0.0	39.5	46.0	-6.5	Black
30	2.953M	29.1	-0.1	+10.1	+0.2	+0.1	+0.0	39.4	46.0	-6.6	Black
31	4.998M	28.9	+0.1	+10.1	+0.2	+0.1	+0.0	39.4	46.0	-6.6	Black
32	3.080M	28.8	-0.1	+10.1	+0.2	+0.1	+0.0	39.1	46.0	-6.9	Black
33	3.293M	28.8	-0.1	+10.1	+0.2	+0.1	+0.0	39.1	46.0	-6.9	Black
34	3.552M	28.9	+0.0	+10.0	+0.1	+0.1	+0.0	39.1	46.0	-6.9	Black
35	5.436M	32.6	+0.1	+10.1	+0.2	+0.1	+0.0	43.1	50.0	-6.9	Black
36	3.510M	28.7	+0.0	+10.0	+0.1	+0.1	+0.0	38.9	46.0	-7.1	Black
37	3.165M	28.5	-0.1	+10.1	+0.2	+0.1	+0.0	38.8	46.0	-7.2	Black
38	3.208M	28.5	-0.1	+10.1	+0.2	+0.1	+0.0	38.8	46.0	-7.2	Black
39	680.199k Ave	28.4	+0.0	+10.1	+0.1	+0.1	+0.0	38.7	46.0	-7.3	Black
^	680.199k	35.5	+0.0	+10.1	+0.1	+0.1	+0.0	45.8	46.0	-0.2	Black
41	4.618M Ave	28.2	+0.1	+10.1	+0.2	+0.1	+0.0	38.7	46.0	-7.3	Black
^	4.618M	31.9	+0.1	+10.1	+0.2	+0.1	+0.0	42.4	46.0	-3.6	Black
43	3.123M	28.2	-0.1	+10.1	+0.2	+0.1	+0.0	38.5	46.0	-7.5	Black
44	4.020M	28.2	+0.0	+10.0	+0.1	+0.1	+0.0	38.4	46.0	-7.6	Black
45	859.026k Ave	27.8	+0.0	+10.0	+0.2	+0.2	+0.0	38.2	46.0	-7.8	Black
^	859.026k	34.5	+0.0	+10.0	+0.2	+0.2	+0.0	44.9	46.0	-1.1	Black
47	2.608M	27.9	-0.1	+10.1	+0.2	+0.1	+0.0	38.2	46.0	-7.8	Black

48	4.237M	28.0	+0.0	+10.0	+0.1	+0.1	+0.0	38.2	46.0	-7.8	Black
49	2.051M	27.8	+0.0	+10.1	+0.2	+0.1	+0.0	38.2	46.0	-7.8	Black
50	5.472M	31.6	+0.1	+10.1	+0.2	+0.1	+0.0	42.1	50.0	-7.9	Black
51	3.250M	27.7	-0.1	+10.1	+0.2	+0.1	+0.0	38.0	46.0	-8.0	Black
52	5.301M	31.5	+0.1	+10.1	+0.2	+0.1	+0.0	42.0	50.0	-8.0	Black
53	1.239M	27.5	+0.0	+10.0	+0.1	+0.2	+0.0	37.8	46.0	-8.2	Black
54	4.194M	27.6	+0.0	+10.0	+0.1	+0.1	+0.0	37.8	46.0	-8.2	Black
55	5.346M	31.2	+0.1	+10.1	+0.2	+0.1	+0.0	41.7	50.0	-8.3	Black
56	5.860M	31.1	+0.1	+10.1	+0.2	+0.1	+0.0	41.6	50.0	-8.4	Black
57	4.830M	25.6	+0.1	+10.1	+0.2	+0.1	+0.0	36.1	46.0	-9.9	Black
Ave											
^	4.830M	32.7	+0.1	+10.1	+0.2	+0.1	+0.0	43.2	46.0	-2.8	Black

CKC Laboratories, Inc. Date: 9/10/2007 Time: 16:12:48 Asyst Technologies W/O#: 87011
 FCC 15.107 B COND [AVE] Test Lead: Black 120V 60Hz Sequence#: 20
 Active Mode-120V



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

Customer: **Asyst Technologies**
 Specification: **FCC 15.107 B COND [AVE]**
 Work Order #: **87011** Date: 9/10/2007
 Test Type: **Conducted Emissions** Time: 16:24:53
 Equipment: **RFID Tag Reader/Multiplexer** Sequence#: 21
 Manufacturer: Asyst Technologies Tested By: Robert Gamez
 Model: ATR 9880 120V 60Hz
 S/N: 001

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
SA - E4440A	MH46186315	02/15/2007	02/15/2009	02870
TTE High Pass Filter	H4120	01/17/2007	01/17/2009	05258
LISN	9408-1006	04/01/2007	04/01/2009	00493
Cable	none	06/13/2006	06/13/2008	0880
Attenuator	none	10/20/2005	10/20/2007	02223

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
RFID Tag Reader/Multiplexer*	Asyst Technologies	ATR 9880	001
Antenna	Asyst Technologies	PN 9701-2883-04 Rev 002	4

Support Devices:

Function	Manufacturer	Model #	S/N
Antenna	Asyst Technologies	PN 9701-2883-02	2
Antenna	Asyst Technologies	PN 9701-2883-02	3
Antenna	Asyst Technologies	PN 9701-2883-02	4
Antenna	Asyst Technologies	PN 9701-2883-02	5
Antenna	Asyst Technologies	PN 9701-2883-02	none
Antenna	Asyst Technologies	PN 9701-2883-02	none
Antenna	Asyst Technologies	PN 9701-2883-02	none
Host PC	Compaq	Armada M700	01811
AC Adapter for PC	Compaq	Series PPP0002D	386315-001
24CDV Power Supply	AULT	PW102	none

Test Conditions / Notes:

The ATR9800 8 Antenna Multiplexer: The host Dell PC is running Secsim Pro software and sending Read ID Commands over the serial connection. Only antenna #1 is active during communications. The remaining seven antennas are connected but not energized. An unterminated Ethernet cable is attached. The EUT is powered by 24 VDC from a power supply on the floor. Notes: 1) Unterminated cables are connected to two of the remote I/O ports. 2) EUT is in Active Mode. Conducted Emissions 0.15-30 MHz. Temperature: 23°C, Humidity: 50%.

Transducer Legend:

T1=LISN - AN00493 - White - ELC "OUT"	T2=ANP02223-082707
T3=Cable P00880	T4=TTE HP Filter

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

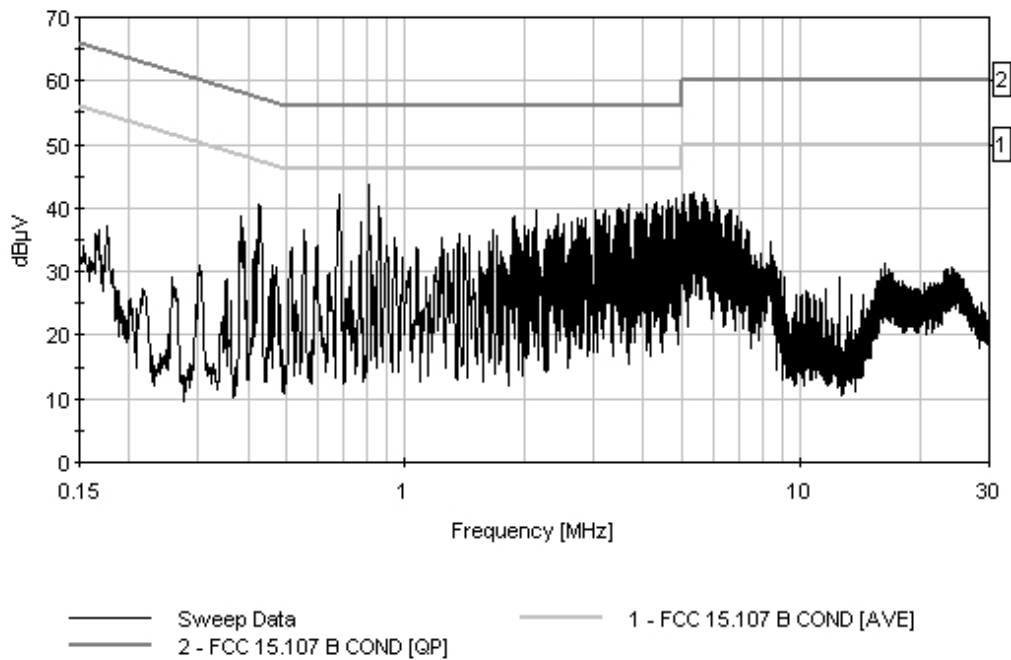
#	Freq MHz	Rdng dBμV	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	680.160k	32.1	+0.0	+10.1	+0.1	+0.1	+0.0	42.4	46.0	-3.6	White
QP											

2	810.115k QP	31.2	+0.0	+10.1	+0.2	+0.2	+0.0	41.7	46.0	-4.3	White
3	4.828M	31.1	+0.0	+10.1	+0.2	+0.1	+0.0	41.5	46.0	-4.5	White
4	4.615M	30.7	+0.0	+10.1	+0.2	+0.1	+0.0	41.1	46.0	-4.9	White
5	4.318M	30.5	+0.1	+10.0	+0.1	+0.1	+0.0	40.8	46.0	-5.2	White
6	3.675M	30.3	+0.1	+10.0	+0.1	+0.1	+0.0	40.6	46.0	-5.4	White
7	4.062M	30.3	+0.1	+10.0	+0.1	+0.1	+0.0	40.6	46.0	-5.4	White
8	4.275M	30.2	+0.1	+10.0	+0.1	+0.1	+0.0	40.5	46.0	-5.5	White
9	859.025k	30.0	+0.0	+10.0	+0.2	+0.2	+0.0	40.4	46.0	-5.6	White
10	4.445M	30.1	+0.1	+10.0	+0.1	+0.1	+0.0	40.4	46.0	-5.6	White
11	4.747M	30.0	+0.0	+10.1	+0.2	+0.1	+0.0	40.4	46.0	-5.6	White
12	4.488M	29.8	+0.0	+10.1	+0.2	+0.1	+0.0	40.2	46.0	-5.8	White
13	3.463M	29.6	+0.1	+10.1	+0.2	+0.1	+0.0	40.1	46.0	-5.9	White
14	4.705M	29.5	+0.0	+10.1	+0.2	+0.1	+0.0	39.9	46.0	-6.1	White
15	4.662M	29.4	+0.0	+10.1	+0.2	+0.1	+0.0	39.8	46.0	-6.2	White
16	4.871M	29.4	+0.0	+10.1	+0.2	+0.1	+0.0	39.8	46.0	-6.2	White
17	4.998M	29.4	+0.0	+10.1	+0.2	+0.1	+0.0	39.8	46.0	-6.2	White
18	3.033M	29.2	+0.1	+10.1	+0.2	+0.1	+0.0	39.7	46.0	-6.3	White
19	4.233M	29.4	+0.1	+10.0	+0.1	+0.1	+0.0	39.7	46.0	-6.3	White
20	2.136M	29.3	+0.0	+10.1	+0.2	+0.1	+0.0	39.7	46.0	-6.3	White
21	4.573M	29.3	+0.0	+10.1	+0.2	+0.1	+0.0	39.7	46.0	-6.3	White
22	3.208M	29.1	+0.1	+10.1	+0.2	+0.1	+0.0	39.6	46.0	-6.4	White
23	3.505M	29.3	+0.1	+10.0	+0.1	+0.1	+0.0	39.6	46.0	-6.4	White
24	3.637M	29.3	+0.1	+10.0	+0.1	+0.1	+0.0	39.6	46.0	-6.4	White
25	3.420M	29.0	+0.1	+10.1	+0.2	+0.1	+0.0	39.5	46.0	-6.5	White
26	427.065k	30.4	+0.0	+10.0	+0.2	+0.1	+0.0	40.7	47.3	-6.6	White

27	3.935M	29.1	+0.1	+10.0	+0.1	+0.1	+0.0	39.4	46.0	-6.6	White
28	3.548M	29.0	+0.1	+10.0	+0.1	+0.1	+0.0	39.3	46.0	-6.7	White
29	3.846M	29.0	+0.1	+10.0	+0.1	+0.1	+0.0	39.3	46.0	-6.7	White
30	3.888M	28.7	+0.1	+10.0	+0.1	+0.1	+0.0	39.0	46.0	-7.0	White
31	4.360M	28.7	+0.1	+10.0	+0.1	+0.1	+0.0	39.0	46.0	-7.0	White
32	4.960M	28.6	+0.0	+10.1	+0.2	+0.1	+0.0	39.0	46.0	-7.0	White
33	680.160k Ave	28.6	+0.0	+10.1	+0.1	+0.1	+0.0	38.9	46.0	-7.1	White
^	680.160k	36.0	+0.0	+10.1	+0.1	+0.1	+0.0	46.3	46.0	+0.3	White
35	2.434M	28.5	+0.0	+10.1	+0.2	+0.1	+0.0	38.9	46.0	-7.1	White
36	3.165M	28.4	+0.1	+10.1	+0.2	+0.1	+0.0	38.9	46.0	-7.1	White
37	3.977M	28.6	+0.1	+10.0	+0.1	+0.1	+0.0	38.9	46.0	-7.1	White
38	1.881M	28.4	+0.0	+10.1	+0.2	+0.1	+0.0	38.8	46.0	-7.2	White
39	3.293M	28.3	+0.1	+10.1	+0.2	+0.1	+0.0	38.8	46.0	-7.2	White
40	2.863M	28.0	+0.1	+10.1	+0.2	+0.1	+0.0	38.5	46.0	-7.5	White
41	2.736M	27.9	+0.1	+10.1	+0.2	+0.1	+0.0	38.4	46.0	-7.6	White
42	5.346M	31.9	+0.0	+10.1	+0.2	+0.1	+0.0	42.3	50.0	-7.7	White
43	3.076M	27.6	+0.1	+10.1	+0.2	+0.1	+0.0	38.1	46.0	-7.9	White
44	5.256M	31.7	+0.0	+10.1	+0.2	+0.1	+0.0	42.1	50.0	-7.9	White
45	5.679M	31.6	+0.1	+10.1	+0.2	+0.1	+0.0	42.1	50.0	-7.9	White
46	2.778M	27.5	+0.1	+10.1	+0.2	+0.1	+0.0	38.0	46.0	-8.0	White
47	3.803M	27.7	+0.1	+10.0	+0.1	+0.1	+0.0	38.0	46.0	-8.0	White
48	5.045M	31.6	+0.0	+10.1	+0.2	+0.1	+0.0	42.0	50.0	-8.0	White
49	2.651M	27.4	+0.1	+10.1	+0.2	+0.1	+0.0	37.9	46.0	-8.1	White
50	770.306k	27.3	+0.0	+10.1	+0.2	+0.1	+0.0	37.7	46.0	-8.3	White

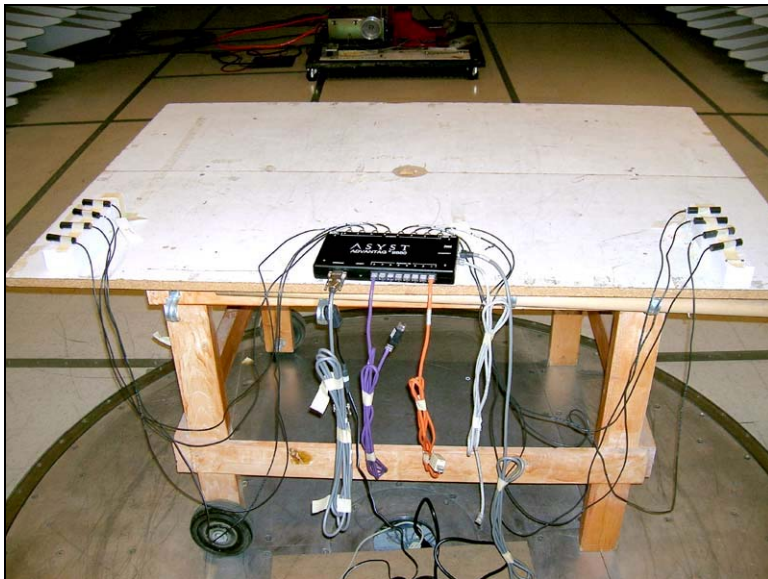
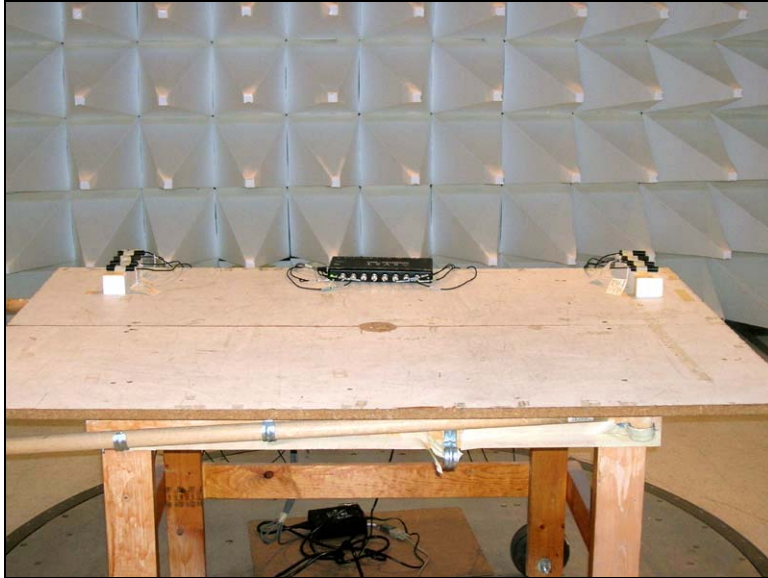
51	4.403M	27.3	+0.1	+10.0	+0.1	+0.1	+0.0	37.6	46.0	-8.4	White
52	5.770M	31.1	+0.1	+10.1	+0.2	+0.1	+0.0	41.6	50.0	-8.4	White
53	810.115k	26.5	+0.0	+10.1	+0.2	+0.2	+0.0	37.0	46.0	-9.0	White
Ave											
^	810.115k	34.9	+0.0	+10.1	+0.2	+0.2	+0.0	45.4	46.0	-0.6	White

CKC Laboratories, Inc. Date: 9/10/2007 Time: 16:24:53 Asyst Technologies WO#: 87011
 FCC 15.107 B COND [AVE] Test Lead: White 120V 60Hz Sequence#: 21
 Active Mode-120V



FCC 15.109 RADIATED EMISSIONS

Test Setup Photos





Test Data Sheets

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

Customer: **Asyst Technologies**
 Specification: **FCC 15.109 Class B Radiated**
 Work Order #: **87011** Date: 9/7/2007
 Test Type: **Radiated Scan** Time: 17:10:17
 Equipment: **RFID Tag Reader/Multiplexer** Sequence#: 12
 Manufacturer: Asyst Technologies Tested By: C. Nicklas
 Model: ATR 9880
 S/N: 002

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
Chase Bilog CBL6111C	2630	12/30/2006	12/30/2008	00852
HP8447F opt H64 preamp	2944A03850	01/02/2007	01/02/2009	00501
SA - E4440A	MH46186315	02/15/2007	02/15/2009	02870

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Antenna	Asyst Technologies	PN 9701-2883-04 Rev 002	4
RFID Tag Reader/Multiplexer*	Asyst Technologies	ATR 9880	002

Support Devices:

Function	Manufacturer	Model #	S/N
Antenna	Asyst Technologies	PN 9701-2883-02	2
Antenna	Asyst Technologies	PN 9701-2883-02	3
Antenna	Asyst Technologies	PN 9701-2883-02	4
Antenna	Asyst Technologies	PN 9701-2883-02	5
Antenna	Asyst Technologies	PN 9701-2883-02	none
Antenna	Asyst Technologies	PN 9701-2883-02	none
Antenna	Asyst Technologies	PN 9701-2883-02	none
Host PC	Compaq	Armada M700	01811
AC Adapter for PC	Compaq	Series PPP0002D	386315-001
24VDC Power Supply	AULT	PW102	none
Antenna	Asyst Technologies	PN 9701-2883-02	none

Test Conditions / Notes:

The ATR9800 8 Antenna Multiplexer: The host Compaq PC is running Secsim Pro software and sending Read ID Commands over the RS232/COMM serial connection. Only antenna #1 is active during communications. The remaining seven antennas are connected but not energized. An unterminated Ethernet cable is attached. The EUT is powered by 24 VDC from a power supply on the floor. The PC is setup outside the test chamber. Notes: 1) The outer two remote I/O ports have ethernet cables connected with loop-back plugs. The remaining 6 remote I/O ports have loop-back plugs directly connected to the ports. With the loop-back plugs installed, the remote I/O ports are fully functional. 2) Added caps to enet. Radiated emissions: Spurious emissions 30-1000 MHz. Temperature: 20°C, Humidity: 53%.

Transducer Legend:

T1=AMP-ANP00501-010207 Top Portion	T2=ANT AN00852 25-1000MHZ
T3=Cable Calibration ANP05296	T4=Cable Calibration ANP05299
T5=Cable Calibration ANP05300	

Measurement Data:

Reading listed by margin.

Test Distance: 3 Meters

#	Freq MHz	Rdng dB μ V	T1 T5 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dB μ V/m	Spec dB μ V/m	Margin dB	Polar Ant
1	399.987M QP	52.0	-27.1 +0.5	+16.3	+1.3	+0.1	+0.0 41	43.1	46.0	-2.9	Vert 126
^	399.987M	52.7	-27.1 +0.5	+16.3	+1.3	+0.1	+0.0 41	43.8	46.0	-2.2	Vert 126
3	127.120M QP	53.0	-26.6 +0.3	+11.8	+0.7	+0.1	+0.0 115	39.3	43.5	-4.2	Vert 99
^	127.120M	55.5	-26.6 +0.3	+11.8	+0.7	+0.1	+0.0 115	41.8	43.5	-1.7	Vert 99
5	126.288M QP	52.7	-26.6 +0.3	+11.8	+0.7	+0.1	+0.0 115	39.0	43.5	-4.5	Vert 99
^	126.288M	55.8	-26.6 +0.3	+11.8	+0.7	+0.1	+0.0 115	42.1	43.5	-1.4	Vert 99
7	128.018M QP	52.5	-26.6 +0.3	+11.8	+0.7	+0.1	+0.0 115	38.8	43.5	-4.7	Vert 99
^	128.018M	55.6	-26.6 +0.3	+11.8	+0.7	+0.1	+0.0 115	41.9	43.5	-1.6	Vert 99
9	50.468M QP	52.5	-26.9 +0.2	+8.9	+0.5	+0.0	+0.0 78	35.2	40.0	-4.8	Vert 100
^	50.468M	56.9	-26.9 +0.2	+8.9	+0.5	+0.0	+0.0 78	39.6	40.0	-0.4	Vert 100

11	49.535M	52.2	-26.9	+9.2	+0.5	+0.0	+0.0	35.2	40.0	-4.8	Horiz
	QP		+0.2				9				400
^	49.535M	56.0	-26.9	+9.2	+0.5	+0.0	+0.0	39.0	40.0	-1.0	Horiz
			+0.2				9				400
13	128.830M	52.2	-26.6	+11.8	+0.7	+0.1	+0.0	38.5	43.5	-5.0	Vert
	QP		+0.3				115				99
^	128.830M	55.4	-26.6	+11.8	+0.7	+0.1	+0.0	41.7	43.5	-1.8	Vert
			+0.3				115				99
15	44.613M	49.5	-26.9	+11.7	+0.5	+0.1	+0.0	35.0	40.0	-5.0	Vert
	QP		+0.1				21				99
^	44.613M	54.2	-26.9	+11.7	+0.5	+0.1	+0.0	39.7	40.0	-0.3	Vert
			+0.1				21				99
17	61.188M	54.7	-26.9	+6.4	+0.5	+0.1	+0.0	35.0	40.0	-5.0	Vert
	QP		+0.2				65				99
^	61.188M	57.7	-26.9	+6.4	+0.5	+0.1	+0.0	38.0	40.0	-2.0	Vert
			+0.2				65				99
19	56.273M	53.5	-26.9	+7.3	+0.5	+0.1	+0.0	34.7	40.0	-5.3	Vert
	QP		+0.2				65				99
^	56.273M	57.7	-26.9	+7.3	+0.5	+0.1	+0.0	38.9	40.0	-1.1	Vert
			+0.2				65				99
21	399.987M	49.3	-27.1	+16.3	+1.3	+0.1	+0.0	40.4	46.0	-5.6	Horiz
	QP		+0.5				67				190
^	399.987M	50.0	-27.1	+16.3	+1.3	+0.1	+0.0	41.1	46.0	-4.9	Horiz
			+0.5				67				190
23	65.976M	53.6	-26.8	+6.5	+0.6	+0.1	+0.0	34.2	40.0	-5.8	Vert
	QP		+0.2				65				99
^	65.976M	56.9	-26.8	+6.5	+0.6	+0.1	+0.0	37.5	40.0	-2.5	Vert
			+0.2				65				99
25	104.933M	52.7	-26.7	+10.6	+0.7	+0.1	+0.0	37.6	43.5	-5.9	Vert
	QP		+0.2				288				112
^	104.933M	56.2	-26.7	+10.6	+0.7	+0.1	+0.0	41.1	43.5	-2.4	Vert
			+0.2				288				112
27	106.681M	52.3	-26.7	+10.7	+0.7	+0.1	+0.0	37.3	43.5	-6.2	Vert
	QP		+0.2				288				112
^	106.681M	55.2	-26.7	+10.7	+0.7	+0.1	+0.0	40.2	43.5	-3.3	Vert
			+0.2				288				112
29	50.509M	51.1	-26.9	+8.9	+0.5	+0.0	+0.0	33.8	40.0	-6.2	Horiz
	QP		+0.2				9				400
^	50.509M	54.9	-26.9	+8.9	+0.5	+0.0	+0.0	37.6	40.0	-2.4	Horiz
			+0.2				9				400
31	141.387M	50.7	-26.5	+11.8	+0.8	+0.2	+0.0	37.2	43.5	-6.3	Vert
	QP		+0.2				115				99
^	141.387M	53.4	-26.5	+11.8	+0.8	+0.2	+0.0	39.9	43.5	-3.6	Vert
			+0.2				115				99
33	105.610M	51.3	-26.7	+10.6	+0.7	+0.1	+0.0	36.2	43.5	-7.3	Vert
	QP		+0.2				288				112
^	105.610M	55.6	-26.7	+10.6	+0.7	+0.1	+0.0	40.5	43.5	-3.0	Vert
			+0.2				288				112

35	217.617M	52.9	-26.2	+10.6	+0.9	+0.1	+0.0	38.7	46.0	-7.3	Horiz
	QP		+0.4				259				191
^	217.617M	56.1	-26.2	+10.6	+0.9	+0.1	+0.0	41.9	46.0	-4.1	Horiz
			+0.4				259				191
37	216.321M	52.8	-26.2	+10.5	+0.9	+0.1	+0.0	38.5	46.0	-7.5	Vert
	QP		+0.4				195				112
^	216.321M	55.6	-26.2	+10.5	+0.9	+0.1	+0.0	41.3	46.0	-4.7	Vert
			+0.4				195				112
39	224.260M	52.0	-26.2	+11.1	+0.9	+0.1	+0.0	38.3	46.0	-7.7	Horiz
	QP		+0.4				270				117
^	224.260M	54.8	-26.2	+11.1	+0.9	+0.1	+0.0	41.1	46.0	-4.9	Horiz
			+0.4				270				117
41	174.571M	51.3	-26.4	+9.5	+0.9	+0.2	+0.0	35.8	43.5	-7.7	Vert
	QP		+0.3				114				99
^	174.571M	54.1	-26.4	+9.5	+0.9	+0.2	+0.0	38.6	43.5	-4.9	Vert
			+0.3				114				99
43	51.389M	49.8	-26.9	+8.6	+0.5	+0.0	+0.0	32.2	40.0	-7.8	Horiz
	QP		+0.2				9				400
^	51.389M	53.5	-26.9	+8.6	+0.5	+0.0	+0.0	35.9	40.0	-4.1	Horiz
			+0.2				9				400
45	603.245M	43.6	-28.0	+20.1	+1.7	+0.2	+0.0	38.2	46.0	-7.8	Vert
	QP		+0.6				262				100
^	603.245M	46.1	-28.0	+20.1	+1.7	+0.2	+0.0	40.7	46.0	-5.3	Vert
			+0.6				262				100
47	79.491M	50.0	-26.9	+8.0	+0.7	+0.1	+0.0	32.1	40.0	-7.9	Vert
	QP		+0.2				80				101
^	79.491M	54.1	-26.9	+8.0	+0.7	+0.1	+0.0	36.2	40.0	-3.8	Vert
			+0.2				80				101
49	115.302M	49.5	-26.6	+11.4	+0.7	+0.1	+0.0	35.4	43.5	-8.1	Vert
	QP		+0.3				263				100
^	115.302M	52.8	-26.6	+11.4	+0.7	+0.1	+0.0	38.7	43.5	-4.8	Vert
			+0.3				263				100
51	219.960M	51.2	-26.2	+10.8	+0.9	+0.1	+0.0	37.2	46.0	-8.8	Horiz
	QP		+0.4				270				117
^	219.960M	54.1	-26.2	+10.8	+0.9	+0.1	+0.0	40.1	46.0	-5.9	Horiz
			+0.4				270				117
53	73.709M	49.7	-26.8	+7.1	+0.7	+0.1	+0.0	31.0	40.0	-9.0	Vert
	QP		+0.2				80				101
^	73.709M	52.8	-26.8	+7.1	+0.7	+0.1	+0.0	34.1	40.0	-5.9	Vert
			+0.2				80				101
55	225.327M	50.0	-26.1	+11.2	+0.9	+0.1	+0.0	36.5	46.0	-9.5	Vert
	QP		+0.4				200				99
^	225.327M	53.0	-26.1	+11.2	+0.9	+0.1	+0.0	39.5	46.0	-6.5	Vert
			+0.4				200				99
57	157.162M	48.0	-26.4	+11.1	+0.8	+0.2	+0.0	33.9	43.5	-9.6	Vert
	QP		+0.2				72				99
^	157.162M	51.3	-26.4	+11.1	+0.8	+0.2	+0.0	37.2	43.5	-6.3	Vert
			+0.2				72				99

59	70.744M	48.7	-26.8	+6.6	+0.7	+0.1	+0.0	29.5	40.0	-10.5	Vert
	QP		+0.2				80				101
^	70.744M	52.8	-26.8	+6.6	+0.7	+0.1	+0.0	33.6	40.0	-6.4	Vert
			+0.2				80				101
61	36.370M	38.5	-26.9	+16.7	+0.4	+0.0	+0.0	28.9	40.0	-11.1	Vert
	QP		+0.2				304				99
^	36.370M	42.4	-26.9	+16.7	+0.4	+0.0	+0.0	32.8	40.0	-7.2	Vert
			+0.2				304				99
63	182.274M	48.1	-26.4	+9.3	+0.9	+0.2	+0.0	32.4	43.5	-11.1	Vert
	QP		+0.3				161				99
^	182.274M	51.2	-26.4	+9.3	+0.9	+0.2	+0.0	35.5	43.5	-8.0	Vert
			+0.3				161				99
65	129.100M	45.6	-26.6	+11.8	+0.7	+0.1	+0.0	31.9	43.5	-11.6	Horiz
	QP		+0.3				85				149
^	129.100M	48.3	-26.6	+11.8	+0.7	+0.1	+0.0	34.6	43.5	-8.9	Horiz
			+0.3				85				149
67	101.964M	47.2	-26.7	+10.4	+0.7	+0.1	+0.0	31.9	43.5	-11.6	Vert
	QP		+0.2				76				99
^	101.964M	50.3	-26.7	+10.4	+0.7	+0.1	+0.0	35.0	43.5	-8.5	Vert
			+0.2				76				99
69	56.277M	47.2	-26.9	+7.3	+0.5	+0.1	+0.0	28.4	40.0	-11.6	Horiz
	QP		+0.2				9				400
^	56.277M	50.8	-26.9	+7.3	+0.5	+0.1	+0.0	32.0	40.0	-8.0	Horiz
			+0.2				9				400
71	199.996M	47.6	-26.4	+9.1	+0.9	+0.1	+0.0	31.6	43.5	-11.9	Vert
	QP		+0.3				198				99
^	199.996M	51.0	-26.4	+9.1	+0.9	+0.1	+0.0	35.0	43.5	-8.5	Vert
			+0.3				198				99
73	115.394M	45.3	-26.6	+11.4	+0.7	+0.1	+0.0	31.2	43.5	-12.3	Horiz
	QP		+0.3				222				169
^	115.394M	48.5	-26.6	+11.4	+0.7	+0.1	+0.0	34.4	43.5	-9.1	Horiz
			+0.3				222				169
75	167.790M	45.7	-26.4	+10.2	+0.9	+0.2	+0.0	30.9	43.5	-12.6	Vert
	QP		+0.3				192				176
^	167.790M	48.4	-26.4	+10.2	+0.9	+0.2	+0.0	33.6	43.5	-9.9	Vert
			+0.3				192				176
77	123.062M	44.3	-26.6	+11.8	+0.7	+0.1	+0.0	30.6	43.5	-12.9	Horiz
	QP		+0.3				85				149
^	123.062M	47.1	-26.6	+11.8	+0.7	+0.1	+0.0	33.4	43.5	-10.1	Horiz
			+0.3				85				149
79	174.502M	44.6	-26.4	+9.5	+0.9	+0.2	+0.0	29.1	43.5	-14.4	Horiz
	QP		+0.3				155				219
^	174.502M	47.8	-26.4	+9.5	+0.9	+0.2	+0.0	32.3	43.5	-11.2	Horiz
			+0.3				155				219

FCC 15.207 CONDUCTED EMISSIONS

Test Setup Photos



Test Data Sheets

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 #: **87011** Date: 9/10/2007
 Test Type: **Conducted Emissions** Time: 16:12:48
 Equipment: **RFID Tag Reader/Multiplexer** Sequence#: 20
 Manufacturer: Asyst Technologies Tested By: Robert Gamez
 Model: ATR 9880 120V 60Hz
 S/N: 001

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
SA - E4440A	MH46186315	02/15/2007	02/15/2009	02870
TTE High Pass Filter	H4120	01/17/2007	01/17/2009	05258
LISN	9408-1006	04/01/2007	04/01/2009	00493
Cable	none	06/13/2006	06/13/2008	0880
Attenuator	none	10/20/2005	10/20/2007	02223

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
RFID Tag Reader/Multiplexer*	Asyst Technologies	ATR 9880	001
Antenna	Asyst Technologies	PN 9701-2883-04 Rev 002	4

Support Devices:

Function	Manufacturer	Model #	S/N
Antenna	Asyst Technologies	PN 9701-2883-02	2
Antenna	Asyst Technologies	PN 9701-2883-02	3
Antenna	Asyst Technologies	PN 9701-2883-02	4
Antenna	Asyst Technologies	PN 9701-2883-02	5
Antenna	Asyst Technologies	PN 9701-2883-02	none
Antenna	Asyst Technologies	PN 9701-2883-02	none
Antenna	Asyst Technologies	PN 9701-2883-02	none
Host PC	Compaq	Armada M700	01811
AC Adapter for PC	Compaq	Series PPP0002D	386315-001
24CDV Power Supply	AULT	PW102	none

Test Conditions / Notes:

The ATR9800 8 Antenna Multiplexer: The host Dell PC is running Secsim Pro software and sending Read ID Commands over the serial connection. Only antenna #1 is active during communications. The remaining seven antennas are connected but not energized. An unterminated Ethernet cable is attached. The EUT is powered by 24 VDC from a power supply on the floor. Notes: 1) Unterminated cables are connected to two of the remote I/O ports. 2) EUT is in Active Mode. Conducted Emissions 0.15-30 MHz. Temperature: 23°C Humidity: 50%.

Transducer Legend:

T1=LISN - AN00493 - Black - ELC "OUT"	T2=ANP02223-082707
T3=Cable P00880	T4=TTE HP Filter

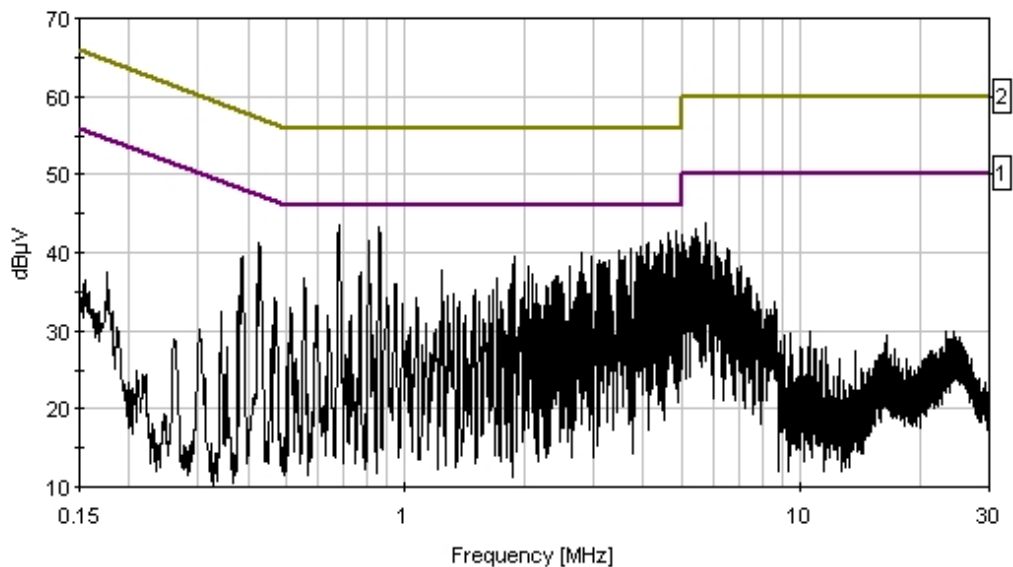
Measurement Data: Reading listed by margin. Test Lead: Black

#	Freq MHz	Rdng dB μ V	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dB μ V	Spec dB μ V	Margin dB	Polar Ant
1	680.199k	31.9	+0.0	+10.1	+0.1	+0.1	+0.0	42.2	46.0	-3.8	Black
	QP										
2	859.026k	31.2	+0.0	+10.0	+0.2	+0.2	+0.0	41.6	46.0	-4.4	Black
	QP										
3	809.576k	31.1	+0.0	+10.1	+0.2	+0.2	+0.0	41.6	46.0	-4.4	Black
4	4.407M	31.4	+0.0	+10.0	+0.1	+0.1	+0.0	41.6	46.0	-4.4	Black
5	4.705M	31.0	+0.1	+10.1	+0.2	+0.1	+0.0	41.5	46.0	-4.5	Black
6	4.105M	31.0	+0.0	+10.0	+0.1	+0.1	+0.0	41.2	46.0	-4.8	Black
7	4.875M	30.6	+0.1	+10.1	+0.2	+0.1	+0.0	41.1	46.0	-4.9	Black
8	4.492M	30.5	+0.1	+10.1	+0.2	+0.1	+0.0	41.0	46.0	-5.0	Black
9	4.062M	30.7	+0.0	+10.0	+0.1	+0.1	+0.0	40.9	46.0	-5.1	Black
10	3.931M	30.6	+0.0	+10.0	+0.1	+0.1	+0.0	40.8	46.0	-5.2	Black
11	4.662M	30.3	+0.1	+10.1	+0.2	+0.1	+0.0	40.8	46.0	-5.2	Black
12	3.718M	30.3	+0.0	+10.0	+0.1	+0.1	+0.0	40.5	46.0	-5.5	Black
13	4.747M	30.0	+0.1	+10.1	+0.2	+0.1	+0.0	40.5	46.0	-5.5	Black
14	4.618M	29.7	+0.1	+10.1	+0.2	+0.1	+0.0	40.2	46.0	-5.8	Black
	QP										
15	3.463M	29.9	-0.1	+10.1	+0.2	+0.1	+0.0	40.2	46.0	-5.8	Black
16	2.778M	29.8	-0.1	+10.1	+0.2	+0.1	+0.0	40.1	46.0	-5.9	Black
17	4.830M	29.5	+0.1	+10.1	+0.2	+0.1	+0.0	40.0	46.0	-6.0	Black
	QP										
18	4.960M	29.5	+0.1	+10.1	+0.2	+0.1	+0.0	40.0	46.0	-6.0	Black
19	3.854M	29.7	+0.0	+10.0	+0.1	+0.1	+0.0	39.9	46.0	-6.1	Black
20	4.275M	29.7	+0.0	+10.0	+0.1	+0.1	+0.0	39.9	46.0	-6.1	Black
21	5.734M	33.4	+0.1	+10.1	+0.2	+0.1	+0.0	43.9	50.0	-6.1	Black
22	427.793k	30.8	+0.1	+10.0	+0.2	+0.1	+0.0	41.2	47.3	-6.1	Black

23	4.360M	29.5	+0.0	+10.0	+0.1	+0.1	+0.0	39.7	46.0	-6.3	Black
24	4.577M	29.2	+0.1	+10.1	+0.2	+0.1	+0.0	39.7	46.0	-6.3	Black
25	3.595M	29.4	+0.0	+10.0	+0.1	+0.1	+0.0	39.6	46.0	-6.4	Black
26	3.892M	29.4	+0.0	+10.0	+0.1	+0.1	+0.0	39.6	46.0	-6.4	Black
27	3.977M	29.4	+0.0	+10.0	+0.1	+0.1	+0.0	39.6	46.0	-6.4	Black
28	1.881M	29.1	+0.0	+10.1	+0.2	+0.1	+0.0	39.5	46.0	-6.5	Black
29	4.322M	29.3	+0.0	+10.0	+0.1	+0.1	+0.0	39.5	46.0	-6.5	Black
30	2.953M	29.1	-0.1	+10.1	+0.2	+0.1	+0.0	39.4	46.0	-6.6	Black
31	4.998M	28.9	+0.1	+10.1	+0.2	+0.1	+0.0	39.4	46.0	-6.6	Black
32	3.080M	28.8	-0.1	+10.1	+0.2	+0.1	+0.0	39.1	46.0	-6.9	Black
33	3.293M	28.8	-0.1	+10.1	+0.2	+0.1	+0.0	39.1	46.0	-6.9	Black
34	3.552M	28.9	+0.0	+10.0	+0.1	+0.1	+0.0	39.1	46.0	-6.9	Black
35	5.436M	32.6	+0.1	+10.1	+0.2	+0.1	+0.0	43.1	50.0	-6.9	Black
36	3.510M	28.7	+0.0	+10.0	+0.1	+0.1	+0.0	38.9	46.0	-7.1	Black
37	3.165M	28.5	-0.1	+10.1	+0.2	+0.1	+0.0	38.8	46.0	-7.2	Black
38	3.208M	28.5	-0.1	+10.1	+0.2	+0.1	+0.0	38.8	46.0	-7.2	Black
39	680.199k Ave	28.4	+0.0	+10.1	+0.1	+0.1	+0.0	38.7	46.0	-7.3	Black
^	680.199k	35.5	+0.0	+10.1	+0.1	+0.1	+0.0	45.8	46.0	-0.2	Black
41	4.618M Ave	28.2	+0.1	+10.1	+0.2	+0.1	+0.0	38.7	46.0	-7.3	Black
^	4.618M	31.9	+0.1	+10.1	+0.2	+0.1	+0.0	42.4	46.0	-3.6	Black
43	3.123M	28.2	-0.1	+10.1	+0.2	+0.1	+0.0	38.5	46.0	-7.5	Black
44	4.020M	28.2	+0.0	+10.0	+0.1	+0.1	+0.0	38.4	46.0	-7.6	Black
45	859.026k Ave	27.8	+0.0	+10.0	+0.2	+0.2	+0.0	38.2	46.0	-7.8	Black
^	859.026k	34.5	+0.0	+10.0	+0.2	+0.2	+0.0	44.9	46.0	-1.1	Black
47	2.608M	27.9	-0.1	+10.1	+0.2	+0.1	+0.0	38.2	46.0	-7.8	Black

48	4.237M	28.0	+0.0	+10.0	+0.1	+0.1	+0.0	38.2	46.0	-7.8	Black
49	2.051M	27.8	+0.0	+10.1	+0.2	+0.1	+0.0	38.2	46.0	-7.8	Black
50	5.472M	31.6	+0.1	+10.1	+0.2	+0.1	+0.0	42.1	50.0	-7.9	Black
51	3.250M	27.7	-0.1	+10.1	+0.2	+0.1	+0.0	38.0	46.0	-8.0	Black
52	5.301M	31.5	+0.1	+10.1	+0.2	+0.1	+0.0	42.0	50.0	-8.0	Black
53	1.239M	27.5	+0.0	+10.0	+0.1	+0.2	+0.0	37.8	46.0	-8.2	Black
54	4.194M	27.6	+0.0	+10.0	+0.1	+0.1	+0.0	37.8	46.0	-8.2	Black
55	5.346M	31.2	+0.1	+10.1	+0.2	+0.1	+0.0	41.7	50.0	-8.3	Black
56	5.860M	31.1	+0.1	+10.1	+0.2	+0.1	+0.0	41.6	50.0	-8.4	Black
57	4.830M	25.6	+0.1	+10.1	+0.2	+0.1	+0.0	36.1	46.0	-9.9	Black
Ave											
^	4.830M	32.7	+0.1	+10.1	+0.2	+0.1	+0.0	43.2	46.0	-2.8	Black

CKC Laboratories, Inc. Date: 9/10/2007 Time: 16:12:48 Asyst Technologies W/O#: 87011
 FCC 15.207 COND [AVE] Test Lead: Black 120V 60Hz Sequence#: 20
 Active Mode-120V



— 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 #: **87011** Date: 9/10/2007
 Test Type: **Conducted Emissions** Time: 16:24:53
 Equipment: **RFID Tag Reader/Multiplexer** Sequence#: 21
 Manufacturer: Asyst Technologies Tested By: Robert Gamez
 Model: ATR 9880 120V 60Hz
 S/N: 001

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
SA - E4440A	MH46186315	02/15/2007	02/15/2009	02870
TTE High Pass Filter	H4120	01/17/2007	01/17/2009	05258
LISN	9408-1006	04/01/2007	04/01/2009	00493
Cable	none	06/13/2006	06/13/2008	0880
Attenuator	none	10/20/2005	10/20/2007	02223

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
RFID Tag Reader/Multiplexer*	Asyst Technologies	ATR 9880	001
Antenna	Asyst Technologies	PN 9701-2883-04 Rev 002	4

Support Devices:

Function	Manufacturer	Model #	S/N
Antenna	Asyst Technologies	PN 9701-2883-02	2
Antenna	Asyst Technologies	PN 9701-2883-02	3
Antenna	Asyst Technologies	PN 9701-2883-02	4
Antenna	Asyst Technologies	PN 9701-2883-02	5
Antenna	Asyst Technologies	PN 9701-2883-02	none
Antenna	Asyst Technologies	PN 9701-2883-02	none
Antenna	Asyst Technologies	PN 9701-2883-02	none
Host PC	Compaq	Armada M700	01811
AC Adapter for PC	Compaq	Series PPP0002D	386315-001
24CDV Power Supply	AULT	PW102	none

Test Conditions / Notes:

The ATR9800 8 Antenna Multiplexer: The host Dell PC is running Secsim Pro software and sending Read ID Commands over the serial connection. Only antenna #1 is active during communications. The remaining seven antennas are connected but not energized. An unterminated Ethernet cable is attached. The EUT is powered by 24 VDC from a power supply on the floor. Notes: 1) Unterminated cables are connected to two of the remote I/O ports. 2) EUT is in Active Mode. Conducted Emissions 0.15-30 MHz. Temperature: 23°C, Humidity: 50%.

Transducer Legend:

T1=LISN - AN00493 - White - ELC "OUT"	T2=ANP02223-082707
T3=Cable P00880	T4=TTE HP Filter

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

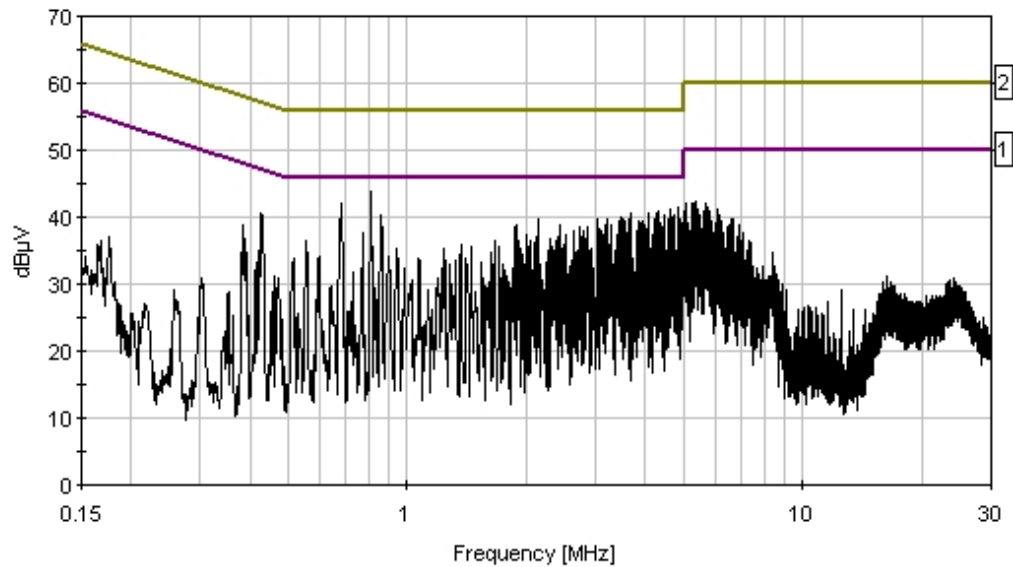
#	Freq MHz	Rdng dBµV	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dBµV	Spec dBµV	Margin dB	Polar Ant
1	680.160k	32.1	+0.0	+10.1	+0.1	+0.1	+0.0	42.4	46.0	-3.6	White
QP											

2	810.115k QP	31.2	+0.0	+10.1	+0.2	+0.2	+0.0	41.7	46.0	-4.3	White
3	4.828M	31.1	+0.0	+10.1	+0.2	+0.1	+0.0	41.5	46.0	-4.5	White
4	4.615M	30.7	+0.0	+10.1	+0.2	+0.1	+0.0	41.1	46.0	-4.9	White
5	4.318M	30.5	+0.1	+10.0	+0.1	+0.1	+0.0	40.8	46.0	-5.2	White
6	3.675M	30.3	+0.1	+10.0	+0.1	+0.1	+0.0	40.6	46.0	-5.4	White
7	4.062M	30.3	+0.1	+10.0	+0.1	+0.1	+0.0	40.6	46.0	-5.4	White
8	4.275M	30.2	+0.1	+10.0	+0.1	+0.1	+0.0	40.5	46.0	-5.5	White
9	859.025k	30.0	+0.0	+10.0	+0.2	+0.2	+0.0	40.4	46.0	-5.6	White
10	4.445M	30.1	+0.1	+10.0	+0.1	+0.1	+0.0	40.4	46.0	-5.6	White
11	4.747M	30.0	+0.0	+10.1	+0.2	+0.1	+0.0	40.4	46.0	-5.6	White
12	4.488M	29.8	+0.0	+10.1	+0.2	+0.1	+0.0	40.2	46.0	-5.8	White
13	3.463M	29.6	+0.1	+10.1	+0.2	+0.1	+0.0	40.1	46.0	-5.9	White
14	4.705M	29.5	+0.0	+10.1	+0.2	+0.1	+0.0	39.9	46.0	-6.1	White
15	4.662M	29.4	+0.0	+10.1	+0.2	+0.1	+0.0	39.8	46.0	-6.2	White
16	4.871M	29.4	+0.0	+10.1	+0.2	+0.1	+0.0	39.8	46.0	-6.2	White
17	4.998M	29.4	+0.0	+10.1	+0.2	+0.1	+0.0	39.8	46.0	-6.2	White
18	3.033M	29.2	+0.1	+10.1	+0.2	+0.1	+0.0	39.7	46.0	-6.3	White
19	4.233M	29.4	+0.1	+10.0	+0.1	+0.1	+0.0	39.7	46.0	-6.3	White
20	2.136M	29.3	+0.0	+10.1	+0.2	+0.1	+0.0	39.7	46.0	-6.3	White
21	4.573M	29.3	+0.0	+10.1	+0.2	+0.1	+0.0	39.7	46.0	-6.3	White
22	3.208M	29.1	+0.1	+10.1	+0.2	+0.1	+0.0	39.6	46.0	-6.4	White
23	3.505M	29.3	+0.1	+10.0	+0.1	+0.1	+0.0	39.6	46.0	-6.4	White
24	3.637M	29.3	+0.1	+10.0	+0.1	+0.1	+0.0	39.6	46.0	-6.4	White
25	3.420M	29.0	+0.1	+10.1	+0.2	+0.1	+0.0	39.5	46.0	-6.5	White
26	427.065k	30.4	+0.0	+10.0	+0.2	+0.1	+0.0	40.7	47.3	-6.6	White

27	3.935M	29.1	+0.1	+10.0	+0.1	+0.1	+0.0	39.4	46.0	-6.6	White
28	3.548M	29.0	+0.1	+10.0	+0.1	+0.1	+0.0	39.3	46.0	-6.7	White
29	3.846M	29.0	+0.1	+10.0	+0.1	+0.1	+0.0	39.3	46.0	-6.7	White
30	3.888M	28.7	+0.1	+10.0	+0.1	+0.1	+0.0	39.0	46.0	-7.0	White
31	4.360M	28.7	+0.1	+10.0	+0.1	+0.1	+0.0	39.0	46.0	-7.0	White
32	4.960M	28.6	+0.0	+10.1	+0.2	+0.1	+0.0	39.0	46.0	-7.0	White
33	680.160k Ave	28.6	+0.0	+10.1	+0.1	+0.1	+0.0	38.9	46.0	-7.1	White
^	680.160k	36.0	+0.0	+10.1	+0.1	+0.1	+0.0	46.3	46.0	+0.3	White
35	2.434M	28.5	+0.0	+10.1	+0.2	+0.1	+0.0	38.9	46.0	-7.1	White
36	3.165M	28.4	+0.1	+10.1	+0.2	+0.1	+0.0	38.9	46.0	-7.1	White
37	3.977M	28.6	+0.1	+10.0	+0.1	+0.1	+0.0	38.9	46.0	-7.1	White
38	1.881M	28.4	+0.0	+10.1	+0.2	+0.1	+0.0	38.8	46.0	-7.2	White
39	3.293M	28.3	+0.1	+10.1	+0.2	+0.1	+0.0	38.8	46.0	-7.2	White
40	2.863M	28.0	+0.1	+10.1	+0.2	+0.1	+0.0	38.5	46.0	-7.5	White
41	2.736M	27.9	+0.1	+10.1	+0.2	+0.1	+0.0	38.4	46.0	-7.6	White
42	5.346M	31.9	+0.0	+10.1	+0.2	+0.1	+0.0	42.3	50.0	-7.7	White
43	3.076M	27.6	+0.1	+10.1	+0.2	+0.1	+0.0	38.1	46.0	-7.9	White
44	5.256M	31.7	+0.0	+10.1	+0.2	+0.1	+0.0	42.1	50.0	-7.9	White
45	5.679M	31.6	+0.1	+10.1	+0.2	+0.1	+0.0	42.1	50.0	-7.9	White
46	2.778M	27.5	+0.1	+10.1	+0.2	+0.1	+0.0	38.0	46.0	-8.0	White
47	3.803M	27.7	+0.1	+10.0	+0.1	+0.1	+0.0	38.0	46.0	-8.0	White
48	5.045M	31.6	+0.0	+10.1	+0.2	+0.1	+0.0	42.0	50.0	-8.0	White
49	2.651M	27.4	+0.1	+10.1	+0.2	+0.1	+0.0	37.9	46.0	-8.1	White
50	770.306k	27.3	+0.0	+10.1	+0.2	+0.1	+0.0	37.7	46.0	-8.3	White

51	4.403M	27.3	+0.1	+10.0	+0.1	+0.1	+0.0	37.6	46.0	-8.4	White
52	5.770M	31.1	+0.1	+10.1	+0.2	+0.1	+0.0	41.6	50.0	-8.4	White
53	810.115k Ave	26.5	+0.0	+10.1	+0.2	+0.2	+0.0	37.0	46.0	-9.0	White
^	810.115k	34.9	+0.0	+10.1	+0.2	+0.2	+0.0	45.4	46.0	-0.6	White

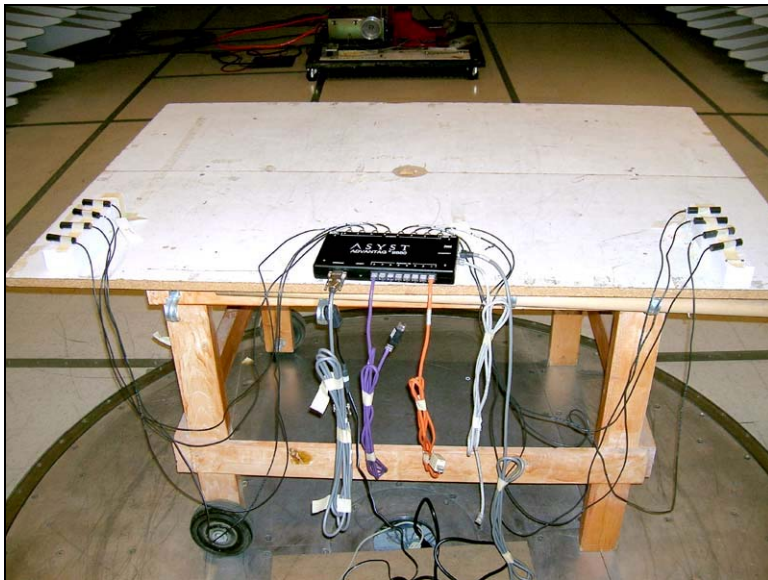
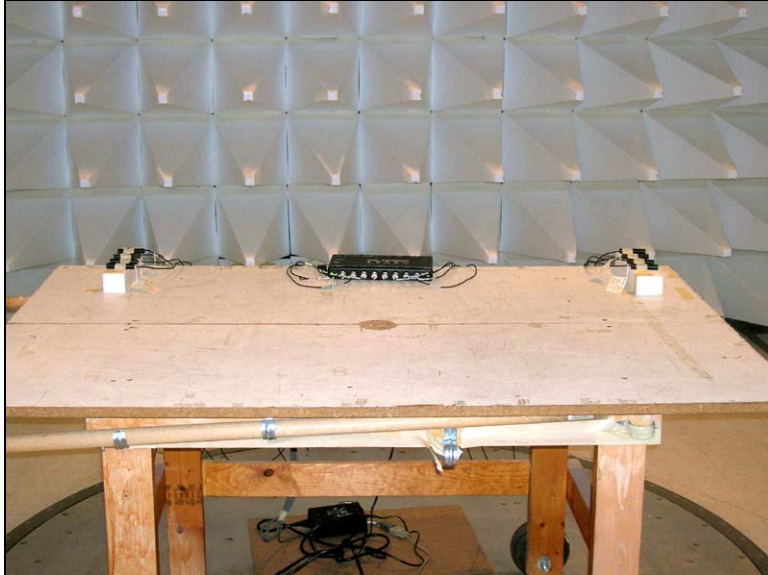
CKC Laboratories, Inc. Date: 9/10/2007 Time: 16:24:53 Asyst Technologies WO#: 87011
 FCC 15.207 COND [AVE] Test Lead: White 120V 60Hz Sequence#: 21
 Active Mode-120V



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

FCC 15.209 RADIATED EMISSIONS

Test Setup Photos





Test Data Sheets

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

Customer: **Asyst Technologies**
 Specification: **FCC 15.209**
 Work Order #: **87011** Date: 8/31/2007
 Test Type: **Maximized Emissions** Time: 11:27:15
 Equipment: **RFID Tag Reader/Multiplexer** Sequence#: 1
 Manufacturer: Asyst Technologies Tested By: Art Rice
 Model: ATR 9880
 S/N: 001

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
Mag Loop - 6502	2078	06/11/2007	06/11/2009	00432
SA - E4440A	MH46186315	02/15/2007	02/15/2009	02870
Cable	None	04/05/2007	04/05/2009	P05300
Cable	None	04/02/2007	04/02/2009	P05296
Cable	None	04/02/2007	04/02/2009	P05299

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
RFID Tag Reader/Multiplexer*	Asyst Technologies	ATR 9880	001
Antenna	Asyst Technologies	PN 9701-2883-04 Rev 002	4

Support Devices:

Function	Manufacturer	Model #	S/N
Antenna	Asyst Technologies	PN 9701-2883-02	2
Antenna	Asyst Technologies	PN 9701-2883-02	3
Antenna	Asyst Technologies	PN 9701-2883-02	4
Antenna	Asyst Technologies	PN 9701-2883-02	5
Antenna	Asyst Technologies	PN 9701-2883-02	none
Antenna	Asyst Technologies	PN 9701-2883-02	none
Host PC	Compaq	Armada M700	01811
AC Adapter for PC	Compaq	Series PPP0002D	386315-001
24CDV Power Supply	AULT	PW102	none
Antenna	Asyst Technologies	PN 9701-2883-02	none

Test Conditions / Notes:

The ATR9800 8 Antenna Multiplexer: The host Dell PC is running Secsim Pro software and sending Read ID Commands over the serial connection. Only antenna #1 is active during communications. The remaining seven antennas are connected but not energized. An unterminated Ethernet cable is attached. The EUT is powered by 24 VDC from a power supply on the floor. Radiated emissions: Carrier. Transmit fundamental was also measured at +/-15% (20.4 and 27.6 Volts) and no change in the level was seen.

Transducer Legend:

T1=Cable Calibration ANP05296	T2=Mag Loop - AN 00432- 9kHz-30M
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Measurement Data:

Reading listed by margin.

Test Distance: 3 Meters

#	Freq MHz	Rdng dB μ V	T1 dB	T2 dB	Margin dB	Dist Table	Corr dB μ V/m	Spec dB μ V/m	Margin dB	Polar Ant
1	134.205k	90.5	+0.1	+9.5		-80.0 90	20.1	25.0 EUT antenna horizontal	-4.9	Horiz 100
2	134.205k	85.8	+0.1	+9.5		-80.0 49	15.4	25.0 EUT antenna horizontal	-9.6	Vert 100
3	134.203k	83.0	+0.1	+9.5		-80.0 90	12.6	25.0 EUT antenna vertical	-12.4	Horiz 100
4	134.205k	73.8	+0.1	+9.5		-80.0 64	3.4	25.0 EUT antenna vertical	-21.6	Vert 100

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

Customer: **Asyst Technologies**
 Specification: **FCC 15.209**
 Work Order #: **87011** Date: 8/31/2007
 Test Type: **Radiated Scan** Time: 7:25:28 PM
 Equipment: **RFID Tag Reader/Multiplexer** Sequence#: 6
 Manufacturer: Asyst Technologies Tested By: Art Rice
 Model: ATR 9880
 S/N: 001

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
SA - E4440A	MH46186315	02/15/2007	02/15/2009	02870
Mag Loop - 6502	2078	06/11/2007	06/11/2009	00432
Cable	None	04/05/2007	04/05/2009	P05300
Cable	None	04/02/2007	04/02/2009	P05296
Cable	None	04/02/2007	04/02/2009	P05299

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
RFID Tag Reader/Multiplexer*	Asyst Technologies	ATR 9880	001
Antenna	Asyst Technologies	PN 9701-2883-04 Rev 002	4

Support Devices:

Function	Manufacturer	Model #	S/N
Antenna	Asyst Technologies	PN 9701-2883-02	2
Antenna	Asyst Technologies	PN 9701-2883-02	3
Antenna	Asyst Technologies	PN 9701-2883-02	4
Antenna	Asyst Technologies	PN 9701-2883-02	5
Antenna	Asyst Technologies	PN 9701-2883-02	none
Antenna	Asyst Technologies	PN 9701-2883-02	none
Host PC	Compaq	Armada M700	01811
AC Adapter for PC	Compaq	Series PPP0002D	386315-001
24CDV Power Supply	AULT	PW102	none
Antenna	Asyst Technologies	PN 9701-2883-02	none

Test Conditions / Notes:

The ATR9800 8 Antenna Multiplexer: The host Dell PC is running Secsim Pro software and sending Read ID Commands over the serial connection. Only antenna #1 is active during communications. The remaining seven antennas are connected but not energized. An unterminated Ethernet cable is attached. The EUT is powered by 24 VDC from a power supply on the floor. Notes: 1) Unterminated cables are connected to two of the remote I/O ports. 2) The transmit fundamental signal was deleted from the list of signals. 3) Performed 9 kHz-30 MHz scan with loop vertical (parallel to line drawn to the EUT), with the EUT at the worst case angle for the transmitter fundamental signal. Radiated emissions: Spurious. Temperature: 23°C Humidity: 50% relative humidity.

Transducer Legend:

T1=Cable Calibration ANP05296	T2=Cable Calibration ANP05299
T3=Cable Calibration ANP05300	T4=Mag Loop - AN 00432- 9kHz-30M

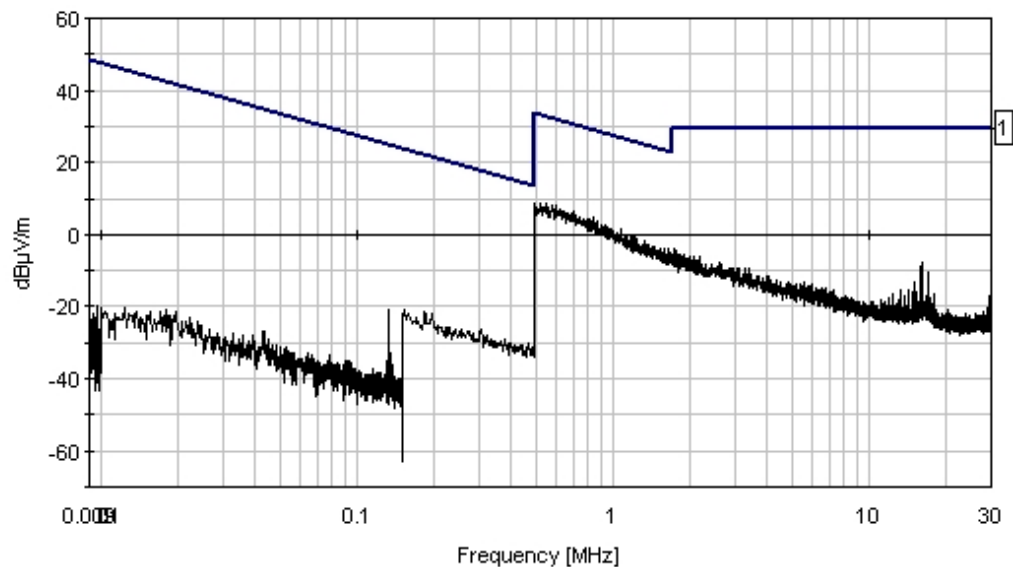
Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq MHz	Rdng dB μ V	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dB μ V/m	Spec dB μ V/m	Margin dB	Polar Ant
1	601.592k	38.3	+0.1	+0.0	+0.0	+9.9	-40.0 89	8.3	32.0	-23.7	Vert 99
2	580.685k	38.3	+0.1	+0.0	+0.0	+9.8	-40.0 89	8.2	32.3	-24.1	Vert 99
3	549.324k	38.5	+0.1	+0.0	+0.0	+9.8	-40.0 89	8.4	32.8	-24.4	Vert 99
4	520.054k	38.9	+0.1	+0.0	+0.0	+9.7	-40.0 89	8.7	33.3	-24.6	Vert 99
5	1.076M	30.7	+0.2	+0.1	+0.0	+10.4	-40.0 89	1.4	26.9	-25.5	Vert 99
6	1.070M	30.7	+0.2	+0.1	+0.0	+10.4	-40.0 89	1.4	27.0	-25.6	Vert 99
7	948.648k	31.4	+0.2	+0.0	+0.1	+10.3	-40.0 89	2.0	28.0	-26.0	Vert 99
8	1.321M	27.7	+0.2	+0.1	+0.0	+10.4	-40.0 89	-1.6	25.1	-26.7	Vert 99
9	1.369M	26.4	+0.2	+0.1	+0.0	+10.4	-40.0 89	-2.9	24.8	-27.7	Vert 99
10	1.906M	23.8	+0.2	+0.0	+0.1	+10.4	-40.0 89	-5.5	29.5	-35.0	Vert 99
11	2.193M	23.4	+0.2	+0.0	+0.1	+10.4	-40.0 89	-5.9	29.5	-35.4	Vert 99
12	16.024M	22.3	+0.3	+0.0	+0.1	+9.5	-40.0 89	-7.8	29.5	-37.3	Vert 99
13	15.970M	21.1	+0.3	+0.0	+0.1	+9.5	-40.0 89	-9.0	29.5	-38.5	Vert 99
14	16.907M	19.8	+0.3	+0.0	+0.1	+9.3	-40.0 89	-10.5	29.5	-40.0	Vert 99
15	16.106M	19.4	+0.3	+0.0	+0.1	+9.5	-40.0 89	-10.7	29.5	-40.2	Vert 99
16	17.042M	18.4	+0.3	+0.0	+0.1	+9.3	-40.0 89	-11.9	29.5	-41.4	Vert 99
17	183.451k	48.4	+0.2	+0.0	+0.1	+9.8	-80.0 89	-21.5	22.3	-43.8	Vert 99
18	465.696k	40.3	+0.1	+0.0	+0.0	+9.6	-80.0 89	-30.0	14.2	-44.2	Vert 99
19	154.181k	49.4	+0.2	+0.0	+0.1	+9.7	-80.0 89	-20.6	23.8	-44.4	Vert 99
20	379.977k	41.1	+0.2	+0.1	+0.0	+9.7	-80.0 89	-28.9	16.0	-44.9	Vert 99
21	319.347k	42.2	+0.2	+0.1	+0.0	+9.6	-80.0 89	-27.9	17.5	-45.4	Vert 99
22	133.769k	49.2	+0.1	+0.0	+0.0	+9.6	-80.0 89	-21.1	25.1	-46.2	Vert 99

23	132.933k	42.2	+0.1	+0.0	+0.0	+9.6	-80.0 89	-28.1	25.1	-53.2	Vert 99
24	136.278k	37.5	+0.1	+0.0	+0.0	+9.4	-80.0 89	-33.0	24.9	-57.9	Vert 99
25	43.312k	41.6	+0.1	+0.0	+0.0	+11.5	-80.0 89	-26.8	34.9	-61.7	Vert 99
26	42.754k	41.6	+0.1	+0.0	+0.0	+11.5	-80.0 89	-26.8	35.0	-61.8	Vert 99
27	19.478k	42.4	+0.0	+0.0	+0.0	+16.1	-80.0 89	-21.5	41.8	-63.3	Vert 99
28	39.409k	40.4	+0.1	+0.0	+0.0	+11.8	-80.0 89	-27.7	35.7	-63.4	Vert 99
29	45.124k	39.5	+0.1	+0.0	+0.0	+11.3	-80.0 89	-29.1	34.5	-63.6	Vert 99
30	22.405k	42.0	+0.0	+0.0	+0.0	+15.0	-80.0 89	-23.0	40.6	-63.6	Vert 99
31	17.805k	42.8	+0.0	+0.0	+0.0	+16.1	-80.0 89	-21.1	42.6	-63.7	Vert 99
32	23.938k	41.3	+0.0	+0.0	+0.0	+14.4	-80.0 89	-24.3	40.0	-64.3	Vert 99
33	17.108k	42.3	+0.0	+0.0	+0.0	+16.1	-80.0 89	-21.6	42.9	-64.5	Vert 99
34	32.858k	40.6	+0.0	+0.0	+0.0	+12.1	-80.0 89	-27.3	37.3	-64.6	Vert 99
35	35.785k	39.7	+0.1	+0.0	+0.0	+12.0	-80.0 89	-28.2	36.5	-64.7	Vert 99
36	24.914k	40.8	+0.0	+0.0	+0.0	+14.0	-80.0 89	-25.2	39.7	-64.9	Vert 99
37	18.363k	41.3	+0.0	+0.0	+0.0	+16.1	-80.0 89	-22.6	42.3	-64.9	Vert 99
38	24.496k	40.6	+0.0	+0.0	+0.0	+14.2	-80.0 89	-25.2	39.8	-65.0	Vert 99
39	21.569k	40.3	+0.0	+0.0	+0.0	+15.4	-80.0 89	-24.3	40.9	-65.2	Vert 99
40	15.575k	42.3	+0.0	+0.0	+0.0	+16.1	-80.0 89	-21.6	43.7	-65.3	Vert 99
41	22.684k	40.2	+0.0	+0.0	+0.0	+14.9	-80.0 89	-24.9	40.5	-65.4	Vert 99
42	20.732k	40.1	+0.0	+0.0	+0.0	+15.8	-80.0 89	-24.1	41.3	-65.4	Vert 99
43	26.726k	40.1	+0.0	+0.0	+0.0	+13.4	-80.0 89	-26.5	39.1	-65.6	Vert 99
44	12.369k	43.6	+0.0	+0.0	+0.0	+16.1	-80.0 89	-20.3	45.7	-66.0	Vert 99
45	13.763k	42.4	+0.0	+0.0	+0.0	+16.1	-80.0 89	-21.5	44.8	-66.3	Vert 99
46	13.485k	42.2	+0.0	+0.0	+0.0	+16.1	-80.0 89	-21.7	45.0	-66.7	Vert 99

47	9.690k	44.0	+0.0	+0.0	+0.0	+16.1	-80.0	-19.9	47.9	-67.8	Vert 99
48	10.000k	43.4	+0.0	+0.0	+0.0	+16.1	-80.0	-20.5	47.6	-68.1	Vert 99
49	9.002k	43.7	+0.0	+0.0	+0.0	+16.1	-80.0	-20.2	48.5	-68.7	Vert 99
50	9.367k	42.2	+0.0	+0.0	+0.0	+16.1	-80.0	-21.7	48.2	-69.9	Vert 99

CKC Laboratories, Inc. Date: 8/31/2007 Time: 7:25:28 PM Asyst Technologies WFO#: 87011
 FCC 15.209 Test Distance: 3 Meters Sequence#: 6
 V



— Sweep Data — 1 - FCC 15.209

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

Customer: **Asyst Technologies**
 Specification: **FCC 15.209**
 Work Order #: **87011** Date: 8/31/2007
 Test Type: **Radiated Scan** Time: 7:40:29 PM
 Equipment: **RFID Tag Reader/Multiplexer** Sequence#: 7
 Manufacturer: Asyst Technologies Tested By: Art Rice
 Model: ATR 9880
 S/N: 001

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
SA - E4440A	MH46186315	02/15/2007	02/15/2009	02870
Mag Loop - 6502	2078	06/11/2007	06/11/2009	00432
Cable	None	04/05/2007	04/05/2009	P05300
Cable	None	04/02/2007	04/02/2009	P05296
Cable	None	04/02/2007	04/02/2009	P05299

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
RFID Tag Reader/Multiplexer*	Asyst Technologies	ATR 9880	001
Antenna	Asyst Technologies	PN 9701-2883-04 Rev 002	4

Support Devices:

Function	Manufacturer	Model #	S/N
Antenna	Asyst Technologies	PN 9701-2883-02	2
Antenna	Asyst Technologies	PN 9701-2883-02	3
Antenna	Asyst Technologies	PN 9701-2883-02	4
Antenna	Asyst Technologies	PN 9701-2883-02	5
Antenna	Asyst Technologies	PN 9701-2883-02	none
Antenna	Asyst Technologies	PN 9701-2883-02	none
Host PC	Compaq	Armada M700	01811
AC Adapter for PC	Compaq	Series PPP0002D	386315-001
24CDV Power Supply	AULT	PW102	none
Antenna	Asyst Technologies	PN 9701-2883-02	none

Test Conditions / Notes:

The ATR9800 8 Antenna Multiplexer: The host Dell PC is running Secsim Pro software and sending Read ID Commands over the serial connection. Only antenna #1 is active during communications. The remaining seven antennas are connected but not energized. An unterminated Ethernet cable is attached. The EUT is powered by 24 VDC from a power supply on the floor. Notes: 1) Unterminated cables are connected to two of the remote I/O ports. 2) The transmit fundamental signal was deleted from the list of signals. 3) Performed 9 kHz-30 MHz scan with loop horizontal (perpendicular to line drawn to the EUT), with the EUT rotated 360 degrees. Radiated emissions: Spurious Temperature: 23°C, Humidity: 50% relative humidity.

Transducer Legend:

T1=Cable Calibration ANP05296	T2=Cable Calibration ANP05299
T3=Cable Calibration ANP05300	T4=Mag Loop - AN 00432- 9kHz-30M

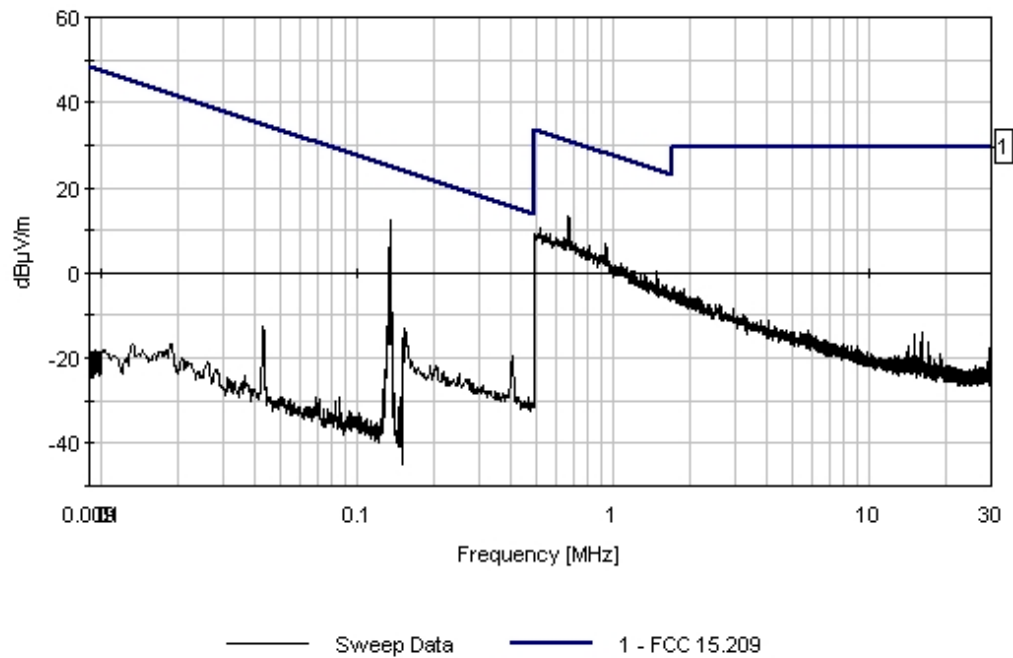
Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq MHz	Rdng dB μ V	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dB μ V/m	Spec dB μ V/m	Margin dB	Polar Ant
1	670.585k	42.9	+0.2	+0.1	+0.0	+10.0	-40.0 -10	13.2	31.1	-17.9	Horiz 99
2	940.285k	36.4	+0.2	+0.0	+0.1	+10.3	-40.0 -10	7.0	28.1	-21.1	Horiz 99
3	520.054k	40.6	+0.1	+0.0	+0.0	+9.7	-40.0 -10	10.4	33.3	-22.9	Horiz 99
4	641.315k	38.3	+0.2	+0.0	+0.0	+9.9	-40.0 -10	8.4	31.4	-23.0	Horiz 99
5	804.390k	35.9	+0.2	+0.1	+0.0	+10.1	-40.0 -10	6.3	29.5	-23.2	Horiz 99
6	720.762k	36.5	+0.3	+0.1	+0.0	+10.0	-40.0 -10	6.9	30.4	-23.5	Horiz 99
7	689.401k	36.9	+0.3	+0.1	+0.0	+10.0	-40.0 -10	7.3	30.8	-23.5	Horiz 99
8	566.050k	39.1	+0.1	+0.0	+0.0	+9.8	-40.0 -10	9.0	32.5	-23.5	Horiz 99
9	547.233k	39.4	+0.1	+0.0	+0.0	+9.7	-40.0 -10	9.2	32.8	-23.6	Horiz 99
10	1.476M	29.5	+0.2	+0.0	+0.1	+10.4	-40.0 -10	0.2	24.2	-24.0	Horiz 99
11	791.846k	35.1	+0.2	+0.1	+0.0	+10.1	-40.0 -10	5.5	29.6	-24.1	Horiz 99
12	915.197k	33.3	+0.2	+0.0	+0.1	+10.3	-40.0 -10	3.9	28.3	-24.4	Horiz 99
13	856.657k	34.0	+0.2	+0.0	+0.1	+10.2	-40.0 -10	4.5	28.9	-24.4	Horiz 99
14	896.381k	33.4	+0.2	+0.0	+0.1	+10.3	-40.0 -10	4.0	28.5	-24.5	Horiz 99
15	877.564k	33.5	+0.2	+0.0	+0.1	+10.3	-40.0 -10	4.1	28.7	-24.6	Horiz 99
16	781.392k	34.5	+0.2	+0.1	+0.0	+10.1	-40.0 -10	4.9	29.7	-24.8	Horiz 99
17	1.074M	31.3	+0.2	+0.1	+0.0	+10.4	-40.0 -10	2.0	26.9	-24.9	Horiz 99
18	1.126M	30.6	+0.2	+0.1	+0.0	+10.4	-40.0 -10	1.3	26.5	-25.2	Horiz 99
19	1.204M	29.7	+0.2	+0.1	+0.0	+10.4	-40.0 -10	0.4	25.9	-25.5	Horiz 99
20	1.013M	31.1	+0.2	+0.1	+0.0	+10.4	-40.0 -10	1.8	27.4	-25.6	Horiz 99
21	1.064M	30.5	+0.2	+0.1	+0.0	+10.4	-40.0 -10	1.2	27.0	-25.8	Horiz 99
22	136.278k	62.9	+0.1	+0.0	+0.0	+9.4	-80.0 -10	-7.6	24.9	-32.5	Horiz 99

23	405.066k	50.5	+0.2	+0.1	+0.0	+9.7	-80.0 -10	-19.5	15.5	-35.0	Horiz 99
24	152.091k	56.9	+0.2	+0.0	+0.1	+9.7	-80.0 -10	-13.1	24.0	-37.1	Horiz 99
25	156.272k	56.2	+0.2	+0.0	+0.1	+9.7	-80.0 -10	-13.8	23.7	-37.5	Horiz 99
26	131.261k	57.8	+0.1	+0.0	+0.0	+9.7	-80.0 -10	-12.4	25.2	-37.6	Horiz 99
27	467.787k	41.2	+0.1	+0.0	+0.0	+9.6	-80.0 -10	-29.1	14.2	-43.3	Horiz 99
28	390.431k	42.5	+0.2	+0.1	+0.0	+9.7	-80.0 -10	-27.5	15.8	-43.3	Horiz 99
29	250.354k	46.3	+0.2	+0.1	+0.0	+9.7	-80.0 -10	-23.7	19.6	-43.3	Horiz 99
30	204.358k	47.9	+0.2	+0.0	+0.1	+9.9	-80.0 -10	-21.9	21.4	-43.3	Horiz 99
31	193.905k	47.8	+0.2	+0.0	+0.1	+9.9	-80.0 -10	-22.0	21.8	-43.8	Horiz 99
32	308.893k	43.8	+0.2	+0.1	+0.0	+9.6	-80.0 -10	-26.3	17.8	-44.1	Horiz 99
33	283.805k	44.1	+0.2	+0.1	+0.0	+9.6	-80.0 -10	-26.0	18.5	-44.5	Horiz 99
34	453.152k	40.1	+0.1	+0.0	+0.0	+9.6	-80.0 -10	-30.2	14.5	-44.7	Horiz 99
35	239.900k	45.0	+0.2	+0.0	+0.1	+9.8	-80.0 -10	-24.9	20.0	-44.9	Horiz 99
36	227.356k	45.3	+0.2	+0.0	+0.1	+9.8	-80.0 -10	-24.6	20.5	-45.1	Horiz 99
37	223.175k	45.2	+0.2	+0.0	+0.1	+9.8	-80.0 -10	-24.7	20.6	-45.3	Horiz 99
38	42.894k	55.9	+0.1	+0.0	+0.0	+11.5	-80.0 -10	-12.5	34.9	-47.4	Horiz 99
39	138.369k	45.3	+0.1	+0.0	+0.0	+9.3	-80.0 -10	-25.3	24.8	-50.1	Horiz 99
40	127.219k	43.8	+0.1	+0.0	+0.0	+9.7	-80.0 -10	-26.4	25.5	-51.9	Horiz 99
41	140.042k	42.5	+0.1	+0.0	+0.0	+9.2	-80.0 -10	-28.2	24.7	-52.9	Horiz 99
42	147.150k	40.9	+0.2	+0.0	+0.1	+9.6	-80.0 -10	-29.2	24.2	-53.4	Horiz 99
43	18.781k	47.1	+0.0	+0.0	+0.0	+16.1	-80.0 -10	-16.8	42.1	-58.9	Horiz 99
44	36.482k	43.6	+0.1	+0.0	+0.0	+12.0	-80.0 -10	-24.3	36.3	-60.6	Horiz 99
45	13.206k	47.0	+0.0	+0.0	+0.0	+16.1	-80.0 -10	-16.9	45.2	-62.1	Horiz 99

46	10.279k	46.0	+0.0	+0.0	+0.0	+16.1	-80.0	-17.9	47.3	-65.2	Horiz 99
47	9.409k	46.0	+0.0	+0.0	+0.0	+16.1	-80.0	-17.9	48.1	-66.0	Horiz 99
48	9.818k	45.2	+0.0	+0.0	+0.0	+16.1	-80.0	-18.7	47.7	-66.4	Horiz 99
49	9.983k	45.1	+0.0	+0.0	+0.0	+16.1	-80.0	-18.8	47.6	-66.4	Horiz 99

CKC Laboratories, Inc. Date: 8/31/2007 Time: 7:40:29 PM Asyst Technologies WWO#: 87011
 FCC 15.209 Test Distance: 3 Meters Sequence#: 7
 H



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

Customer: **Asyst Technologies**
 Specification: **FCC 15.209 30Mhz to 100 GHz**
 Work Order #: **87011** Date: 9/7/2007
 Test Type: **Radiated Scan** Time: 17:10:17
 Equipment: **RFID Tag Reader/Multiplexer** Sequence#: 12
 Manufacturer: Asyst Technologies Tested By: C. Nicklas
 Model: ATR 9880
 S/N: 002

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
Chase Bilog CBL6111C	2630	12/30/2006	12/30/2008	00852
HP8447F opt H64 preamp	2944A03850	1/2/2007	1/2/2009	00501
SA - E4440A	MH46186315	02/15/2007	02/15/2009	02870

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Antenna	Asyst Technologies	PN 9701-2883-04 Rev 002	4
RFID Tag Reader/Multiplexer*	Asyst Technologies	ATR 9880	002

Support Devices:

Function	Manufacturer	Model #	S/N
Antenna	Asyst Technologies	PN 9701-2883-02	2
Antenna	Asyst Technologies	PN 9701-2883-02	3
Antenna	Asyst Technologies	PN 9701-2883-02	4
Antenna	Asyst Technologies	PN 9701-2883-02	5
Antenna	Asyst Technologies	PN 9701-2883-02	none
Antenna	Asyst Technologies	PN 9701-2883-02	none
Host PC	Compaq	Armada M700	01811
AC Adapter for PC	Compaq	Series PPP0002D	386315-001
24VDC Power Supply	AULT	PW102	none
Antenna	Asyst Technologies	PN 9701-2883-02	none

Test Conditions / Notes:

The ATR9800 8 Antenna Multiplexer: The host Compaq PC is running Secsim Pro software and sending Read ID Commands over the RS232/COMM serial connection. Only antenna #1 is active during communications. The remaining seven antennas are connected but not energized. An unterminated Ethernet cable is attached. The EUT is powered by 24 VDC from a power supply on the floor. The PC is setup outside the test chamber. Notes: 1) The outer two remote I/O ports have ethernet cables connected with loop-back plugs. The remaining 6 remote I/O ports have loop-back plugs directly connected to the ports. With the loop-back plugs installed, the remote I/O ports are fully functional 2) Added caps to enet Radiated emissions: Spurious emissions 30-1000 MHz. Temperature: 20°C, Humidity: 53%.

Transducer Legend:

T1=AMP-ANP00501-010207 Top Portion	T2=ANT AN00852 25-1000MHz
T3=Cable Calibration ANP05296	T4=Cable Calibration ANP05299
T5=Cable Calibration ANP05300	

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

#	Freq MHz	Rdng dB μ V	T1 T5 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dB μ V/m	Spec dB μ V/m	Margin dB	Polar Ant
1	399.987M QP	52.0	-27.1 +0.5	+16.3	+1.3	+0.1	+0.0 41	43.1	46.0	-2.9	Vert 126
^	399.987M	52.7	-27.1 +0.5	+16.3	+1.3	+0.1	+0.0 41	43.8	46.0	-2.2	Vert 126
3	127.120M QP	53.0	-26.6 +0.3	+11.8	+0.7	+0.1	+0.0 115	39.3	43.5	-4.2	Vert 99
^	127.120M	55.5	-26.6 +0.3	+11.8	+0.7	+0.1	+0.0 115	41.8	43.5	-1.7	Vert 99
5	126.288M QP	52.7	-26.6 +0.3	+11.8	+0.7	+0.1	+0.0 115	39.0	43.5	-4.5	Vert 99
^	126.288M	55.8	-26.6 +0.3	+11.8	+0.7	+0.1	+0.0 115	42.1	43.5	-1.4	Vert 99
7	128.018M QP	52.5	-26.6 +0.3	+11.8	+0.7	+0.1	+0.0 115	38.8	43.5	-4.7	Vert 99
^	128.018M	55.6	-26.6 +0.3	+11.8	+0.7	+0.1	+0.0 115	41.9	43.5	-1.6	Vert 99
9	50.468M QP	52.5	-26.9 +0.2	+8.9	+0.5	+0.0	+0.0 78	35.2	40.0	-4.8	Vert 100
^	50.468M	56.9	-26.9 +0.2	+8.9	+0.5	+0.0	+0.0 78	39.6	40.0	-0.4	Vert 100
11	49.535M QP	52.2	-26.9 +0.2	+9.2	+0.5	+0.0	+0.0 9	35.2	40.0	-4.8	Horiz 400
^	49.535M	56.0	-26.9 +0.2	+9.2	+0.5	+0.0	+0.0 9	39.0	40.0	-1.0	Horiz 400
13	128.830M QP	52.2	-26.6 +0.3	+11.8	+0.7	+0.1	+0.0 115	38.5	43.5	-5.0	Vert 99
^	128.830M	55.4	-26.6 +0.3	+11.8	+0.7	+0.1	+0.0 115	41.7	43.5	-1.8	Vert 99
15	44.613M QP	49.5	-26.9 +0.1	+11.7	+0.5	+0.1	+0.0 21	35.0	40.0	-5.0	Vert 99
^	44.613M	54.2	-26.9 +0.1	+11.7	+0.5	+0.1	+0.0 21	39.7	40.0	-0.3	Vert 99
17	61.188M QP	54.7	-26.9 +0.2	+6.4	+0.5	+0.1	+0.0 65	35.0	40.0	-5.0	Vert 99
^	61.188M	57.7	-26.9 +0.2	+6.4	+0.5	+0.1	+0.0 65	38.0	40.0	-2.0	Vert 99
19	56.273M QP	53.5	-26.9 +0.2	+7.3	+0.5	+0.1	+0.0 65	34.7	40.0	-5.3	Vert 99
^	56.273M	57.7	-26.9 +0.2	+7.3	+0.5	+0.1	+0.0 65	38.9	40.0	-1.1	Vert 99

21	399.987M	49.3	-27.1	+16.3	+1.3	+0.1	+0.0	40.4	46.0	-5.6	Horiz
	QP		+0.5				67				190
^	399.987M	50.0	-27.1	+16.3	+1.3	+0.1	+0.0	41.1	46.0	-4.9	Horiz
			+0.5				67				190
23	65.976M	53.6	-26.8	+6.5	+0.6	+0.1	+0.0	34.2	40.0	-5.8	Vert
	QP		+0.2				65				99
^	65.976M	56.9	-26.8	+6.5	+0.6	+0.1	+0.0	37.5	40.0	-2.5	Vert
			+0.2				65				99
25	104.933M	52.7	-26.7	+10.6	+0.7	+0.1	+0.0	37.6	43.5	-5.9	Vert
	QP		+0.2				288				112
^	104.933M	56.2	-26.7	+10.6	+0.7	+0.1	+0.0	41.1	43.5	-2.4	Vert
			+0.2				288				112
27	106.681M	52.3	-26.7	+10.7	+0.7	+0.1	+0.0	37.3	43.5	-6.2	Vert
	QP		+0.2				288				112
^	106.681M	55.2	-26.7	+10.7	+0.7	+0.1	+0.0	40.2	43.5	-3.3	Vert
			+0.2				288				112
29	50.509M	51.1	-26.9	+8.9	+0.5	+0.0	+0.0	33.8	40.0	-6.2	Horiz
	QP		+0.2				9				400
^	50.509M	54.9	-26.9	+8.9	+0.5	+0.0	+0.0	37.6	40.0	-2.4	Horiz
			+0.2				9				400
31	141.387M	50.7	-26.5	+11.8	+0.8	+0.2	+0.0	37.2	43.5	-6.3	Vert
	QP		+0.2				115				99
^	141.387M	53.4	-26.5	+11.8	+0.8	+0.2	+0.0	39.9	43.5	-3.6	Vert
			+0.2				115				99
33	105.610M	51.3	-26.7	+10.6	+0.7	+0.1	+0.0	36.2	43.5	-7.3	Vert
	QP		+0.2				288				112
^	105.610M	55.6	-26.7	+10.6	+0.7	+0.1	+0.0	40.5	43.5	-3.0	Vert
			+0.2				288				112
35	217.617M	52.9	-26.2	+10.6	+0.9	+0.1	+0.0	38.7	46.0	-7.3	Horiz
	QP		+0.4				259				191
^	217.617M	56.1	-26.2	+10.6	+0.9	+0.1	+0.0	41.9	46.0	-4.1	Horiz
			+0.4				259				191
37	216.321M	52.8	-26.2	+10.5	+0.9	+0.1	+0.0	38.5	46.0	-7.5	Vert
	QP		+0.4				195				112
^	216.321M	55.6	-26.2	+10.5	+0.9	+0.1	+0.0	41.3	46.0	-4.7	Vert
			+0.4				195				112
39	224.260M	52.0	-26.2	+11.1	+0.9	+0.1	+0.0	38.3	46.0	-7.7	Horiz
	QP		+0.4				270				117
^	224.260M	54.8	-26.2	+11.1	+0.9	+0.1	+0.0	41.1	46.0	-4.9	Horiz
			+0.4				270				117
41	174.571M	51.3	-26.4	+9.5	+0.9	+0.2	+0.0	35.8	43.5	-7.7	Vert
	QP		+0.3				114				99
^	174.571M	54.1	-26.4	+9.5	+0.9	+0.2	+0.0	38.6	43.5	-4.9	Vert
			+0.3				114				99
43	51.389M	49.8	-26.9	+8.6	+0.5	+0.0	+0.0	32.2	40.0	-7.8	Horiz
	QP		+0.2				9				400
^	51.389M	53.5	-26.9	+8.6	+0.5	+0.0	+0.0	35.9	40.0	-4.1	Horiz
			+0.2				9				400

45	603.245M QP	43.6	-28.0 +0.6	+20.1	+1.7	+0.2	+0.0 262	38.2	46.0	-7.8	Vert 100
^	603.245M	46.1	-28.0 +0.6	+20.1	+1.7	+0.2	+0.0 262	40.7	46.0	-5.3	Vert 100
47	79.491M QP	50.0	-26.9 +0.2	+8.0	+0.7	+0.1	+0.0 80	32.1	40.0	-7.9	Vert 101
^	79.491M	54.1	-26.9 +0.2	+8.0	+0.7	+0.1	+0.0 80	36.2	40.0	-3.8	Vert 101
49	115.302M QP	49.5	-26.6 +0.3	+11.4	+0.7	+0.1	+0.0 263	35.4	43.5	-8.1	Vert 100
^	115.302M	52.8	-26.6 +0.3	+11.4	+0.7	+0.1	+0.0 263	38.7	43.5	-4.8	Vert 100
51	219.960M QP	51.2	-26.2 +0.4	+10.8	+0.9	+0.1	+0.0 270	37.2	46.0	-8.8	Horiz 117
^	219.960M	54.1	-26.2 +0.4	+10.8	+0.9	+0.1	+0.0 270	40.1	46.0	-5.9	Horiz 117
53	73.709M QP	49.7	-26.8 +0.2	+7.1	+0.7	+0.1	+0.0 80	31.0	40.0	-9.0	Vert 101
^	73.709M	52.8	-26.8 +0.2	+7.1	+0.7	+0.1	+0.0 80	34.1	40.0	-5.9	Vert 101
55	225.327M QP	50.0	-26.1 +0.4	+11.2	+0.9	+0.1	+0.0 200	36.5	46.0	-9.5	Vert 99
^	225.327M	53.0	-26.1 +0.4	+11.2	+0.9	+0.1	+0.0 200	39.5	46.0	-6.5	Vert 99
57	157.162M QP	48.0	-26.4 +0.2	+11.1	+0.8	+0.2	+0.0 72	33.9	43.5	-9.6	Vert 99
^	157.162M	51.3	-26.4 +0.2	+11.1	+0.8	+0.2	+0.0 72	37.2	43.5	-6.3	Vert 99
59	70.744M QP	48.7	-26.8 +0.2	+6.6	+0.7	+0.1	+0.0 80	29.5	40.0	-10.5	Vert 101
^	70.744M	52.8	-26.8 +0.2	+6.6	+0.7	+0.1	+0.0 80	33.6	40.0	-6.4	Vert 101
61	36.370M QP	38.5	-26.9 +0.2	+16.7	+0.4	+0.0	+0.0 304	28.9	40.0	-11.1	Vert 99
^	36.370M	42.4	-26.9 +0.2	+16.7	+0.4	+0.0	+0.0 304	32.8	40.0	-7.2	Vert 99
63	182.274M QP	48.1	-26.4 +0.3	+9.3	+0.9	+0.2	+0.0 161	32.4	43.5	-11.1	Vert 99
^	182.274M	51.2	-26.4 +0.3	+9.3	+0.9	+0.2	+0.0 161	35.5	43.5	-8.0	Vert 99
65	129.100M QP	45.6	-26.6 +0.3	+11.8	+0.7	+0.1	+0.0 85	31.9	43.5	-11.6	Horiz 149
^	129.100M	48.3	-26.6 +0.3	+11.8	+0.7	+0.1	+0.0 85	34.6	43.5	-8.9	Horiz 149
67	101.964M QP	47.2	-26.7 +0.2	+10.4	+0.7	+0.1	+0.0 76	31.9	43.5	-11.6	Vert 99
^	101.964M	50.3	-26.7 +0.2	+10.4	+0.7	+0.1	+0.0 76	35.0	43.5	-8.5	Vert 99

69	56.277M	47.2	-26.9	+7.3	+0.5	+0.1	+0.0	28.4	40.0	-11.6	Horiz
	QP		+0.2				9				400
^	56.277M	50.8	-26.9	+7.3	+0.5	+0.1	+0.0	32.0	40.0	-8.0	Horiz
			+0.2				9				400
71	199.996M	47.6	-26.4	+9.1	+0.9	+0.1	+0.0	31.6	43.5	-11.9	Vert
	QP		+0.3				198				99
^	199.996M	51.0	-26.4	+9.1	+0.9	+0.1	+0.0	35.0	43.5	-8.5	Vert
			+0.3				198				99
73	115.394M	45.3	-26.6	+11.4	+0.7	+0.1	+0.0	31.2	43.5	-12.3	Horiz
	QP		+0.3				222				169
^	115.394M	48.5	-26.6	+11.4	+0.7	+0.1	+0.0	34.4	43.5	-9.1	Horiz
			+0.3				222				169
75	167.790M	45.7	-26.4	+10.2	+0.9	+0.2	+0.0	30.9	43.5	-12.6	Vert
	QP		+0.3				192				176
^	167.790M	48.4	-26.4	+10.2	+0.9	+0.2	+0.0	33.6	43.5	-9.9	Vert
			+0.3				192				176
77	123.062M	44.3	-26.6	+11.8	+0.7	+0.1	+0.0	30.6	43.5	-12.9	Horiz
	QP		+0.3				85				149
^	123.062M	47.1	-26.6	+11.8	+0.7	+0.1	+0.0	33.4	43.5	-10.1	Horiz
			+0.3				85				149
79	174.502M	44.6	-26.4	+9.5	+0.9	+0.2	+0.0	29.1	43.5	-14.4	Horiz
	QP		+0.3				155				219
^	174.502M	47.8	-26.4	+9.5	+0.9	+0.2	+0.0	32.3	43.5	-11.2	Horiz
			+0.3				155				219

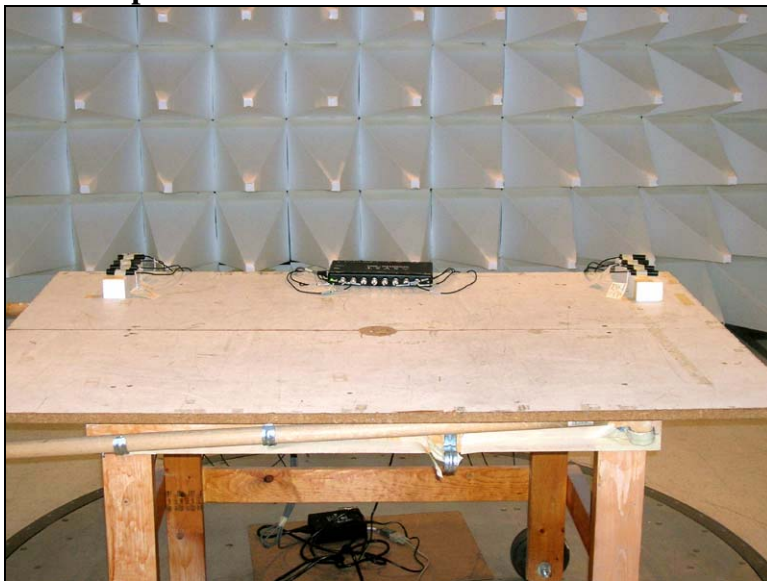
OCCUPIED BANDWIDTH

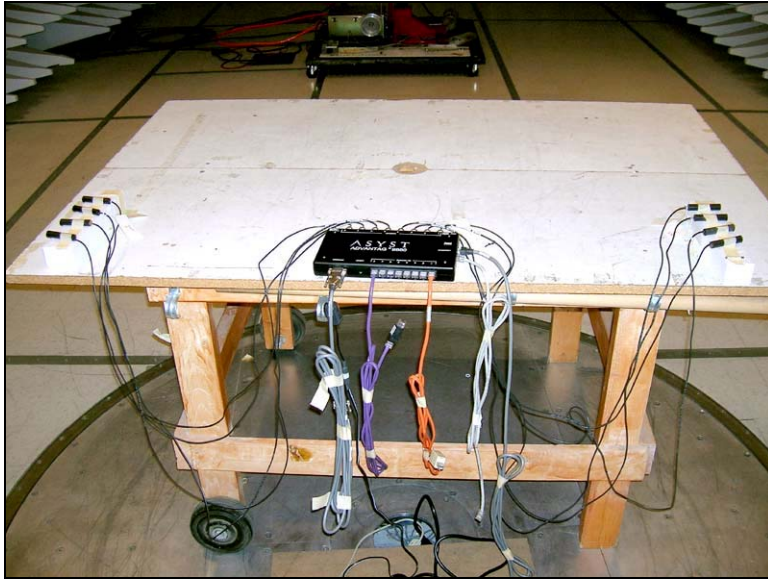
Test Equipment

Function	S/N	Calibration Date	Cal Due Date	Asset #
Mag Loop - 6502	2078	06/11/2007	06/11/2009	00432
SA - E4440A	MH46186315	02/15/2007	02/15/2009	02870
Cable	None	04/05/2007	04/05/2009	P05300
Cable	None	04/02/2007	04/02/2009	P05296
Cable	None	04/02/2007	04/02/2009	P05299

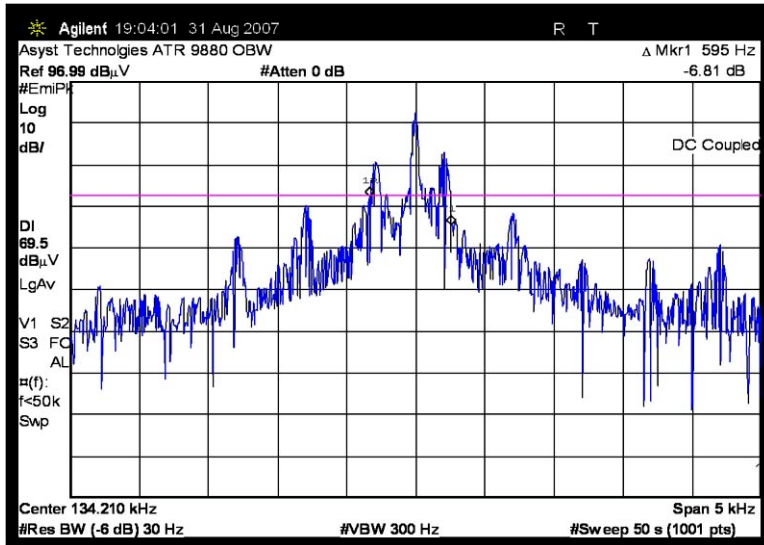
Test Conditions: The ATR9800 8 Antenna Multiplexer: The host Dell PC is running Secsim Pro software and sending Read ID Commands over the serial connection. Only antenna #1 is active during communications. The remaining seven antennas are connected but not energized. An unterminated Ethernet cable is attached. The EUT is powered by 24 VDC from a power supply on the floor.

Test Setup Photos





Plots



Tested By: Art Rice