

4.5 Radiated Spurious Emissions: (FCC Part §15.247(c))

Radiated emissions that fall in the restricted bands must comply with the general emissions limits in 15.209(a).

The emissions were measured using the following resolution bandwidths:

Frequency Range	Resolution Bandwidth	Video Bandwidth
30MHz-1000 MHz	120kHz	>30 kHz
>1000 MHz	1 MHz	<30 Hz (Avg.) 1MHz (Peak)

Harmonic and Spurious emissions that were identified as coming from the EUT were checked in Peak and in Average Mode. It was verified that the peak-to-average ratio did not exceed 20dB.

Peak measurements and average measurements are made. All emissions were determined to have a peak-to-average ratio of less than 20 dB.

4.5.1 Test Procedure

The EUT was placed on motorized turntable for radiated testing on a 3-meter open field test site. The emissions from the EUT were measured continuously at every azimuth by rotating the turntable. Receiving antennas were mounted on an antenna mast to determine the height of maximum emissions. The height of the antenna was varied between 1 and 4 meters. The peripherals were placed on the table in accordance with ANSI C63.4-1992. Cables were varied in position to produce maximum emissions. Both the horizontal and vertical field components were measured.

The EUT was tested in the following configurations and modes:

Antenna	Channel
Dish	A&B

These data are supplied in the following tables.

Table 6: Radiated Emission Test Data - Plan A Channel 1

CLIENT: Adtran
TESTER: J. Ritter
EUT: Tracer 4206
CONFIGURATION: Plan A Band 1
CLOCKS: Transmit at 5734.5Mhz (peak of signal)

DATE: 8/7/02
JOB #: 7154

Test Equipment/Limit:
ANTENNA: A_00004
CABLE: CSITE2_HF
LIMIT: LFCC_3m_Class_B
AMPLIFIER (dB) 34

Test Requirements:
TEST STANDARD: FCC Part 15
DISTANCE: 3M
CLASS: B

*Note Below 1Ghz Antenna A00008 Used with no amplifier
From 1-18 GHz antenna asset A00004 used with amp asset 00312
From 18-26 GHz antenna asset 00210 used (at 30cm test distance) no pre amp
From 26-40 GHz antenna asset 00209 used (at 30cm test distance) no pre amp

Frequency (MHz)	Polarity H/V	Azimuth Degree	Ant. Hght (m)	SA Level (dBuV)	Ant. Corr. (dB/m)	Cable Corr. (dB)	Corr. Level (dBuV/m)	Corr. Level (uV/m)	Limit (uV/m)	Margin dB	Notes
Peak measurements above 1GHz											
1363.49	H	145.0	1.0	42.7	26.6	2.1	37.4	74.1	5000.0	-36.6	
1418.51	H	145.0	1.0	45.8	26.8	2.3	40.9	111.2	5000.0	-33.1	
1700.67	H	190.0	1.0	40.7	27.9	2.9	37.5	75.0	5000.0	-36.5	
2726.99	H	145.0	1.0	52.0	30.3	2.9	51.2	362.5	5000.0	-22.8	
4090.49	H	180.0	1.0	45.7	31.8	2.9	46.4	210.0	5000.0	-27.5	
4255.53	H	180.0	1.0	43.7	32.1	3.2	45.0	177.4	5000.0	-29.0	
8180.98	H	180.0	1.0	38.0	38.5	4.9	47.4	233.6	5000.0	-26.6	
10907.99	H	190.0	1.0	37.2	40.4	5.0	48.5	265.7	5000.0	-25.5	
11469.00	H	0.0	1.0	31.2	40.8	5.0	43.0	141.6	5000.0	-31.0	amb
22938.00	H	0.0	1.0	35.5	40.5	2.5	78.5	8414.0	50000.0	-15.5	
Average measurements											
73.80	H	145.0	2.15	6.2	6.6	1.9	14.7	5.5	100.0	-25.3	QP
115.94	H	0.0	2.7	11.9	10.8	2.6	25.3	18.4	150.0	-18.2	QP
1363.49	H	145.0	1.0	39.4	26.6	2.1	34.1	50.8	500.0	-19.9	
1418.51	H	145.0	1.0	43.5	26.8	2.3	38.6	85.1	500.0	-15.4	
1700.67	H	190.0	1.0	34.9	27.9	2.9	31.7	38.5	500.0	-22.3	
2726.99	H	145.0	1.0	50.3	30.3	2.9	49.5	299.1	500.0	-4.5	
4090.49	H	180.0	1.0	42.7	31.8	2.9	43.4	148.6	500.0	-10.5	
4255.53	H	180.0	1.0	40.2	32.1	3.2	41.5	119.0	500.0	-12.5	
8180.98	H	180.0	1.0	30.9	38.5	4.9	40.3	103.1	500.0	-13.7	
10907.99	H	190.0	1.0	31.7	40.4	5.0	43.0	141.5	500.0	-11.0	
11469.00	H	0.0	1.0	22.1	40.8	5.0	33.9	49.7	500.0	-20.1	amb
22938.00	H	0.0	1.0	24.5	40.5	2.5	67.5	3371.4	5000.0	-6.5	
Peak measurements above 1GHz											
1363.49	V	165.0	1.0	46.5	26.6	2.1	41.2	115.1	5000.0	-32.8	
1418.51	V	185.0	1.0	47.7	26.8	2.3	42.8	137.5	5000.0	-31.2	
1700.67	V	180.0	1.0	41.2	27.9	2.9	38.0	79.2	5000.0	-36.0	
2726.99	V	165.0	1.0	48.8	30.3	2.9	48.0	251.7	5000.0	-26.0	

Frequency	Polarity	Azimuth	Ant. Hght	SA Level	Ant. Corr.	Cable Corr.	Corr. Level	Corr. Level	Limit	Margin	Notes
(MHz)	H/V	Degree	(m)	(dBuV)	(dB/m)	(dB)	(dBuV/m)	(uV/m)	(uV/m)	dB	
4090.49	V	180.0	1.0	43.5	31.8	2.9	44.3	163.5	5000.0	-29.7	amb
4255.53	V	185.0	1.0	39.2	32.1	3.2	40.5	105.7	5000.0	-33.5	
8180.98	V	180.0	1.0	39.7	38.5	4.9	49.0	283.1	5000.0	-24.9	
10907.99	V	205.0	1.0	38.8	40.4	5.0	50.1	321.6	5000.0	-23.8	
11469.00	V	0.0	1.0	31.4	40.8	5.0	43.2	144.9	5000.0	-30.8	
22938.00	V	0.0	1.0	35.5	40.5	2.5	78.5	8414.0	50000.0	-15.5	
Average measurements											
73.70	V	145.0	2.15	3.1	6.6	1.9	11.7	3.8	100.0	-28.3	QP
115.94	V	0.0	2.7	4.5	10.8	2.6	17.9	7.9	150.0	-25.6	QP
1363.49	V	165.0	1.0	44.7	26.6	2.1	39.4	93.2	500.0	-14.6	
1418.51	V	185.0	1.0	45.2	26.8	2.3	40.3	103.1	500.0	-13.7	
1700.67	V	180.0	1.0	37.0	27.9	2.9	33.8	49.0	500.0	-20.2	
2726.99	V	165.0	1.0	47.5	30.3	2.9	46.7	215.9	500.0	-7.3	
4090.49	V	180.0	1.0	40.8	31.8	2.9	41.6	120.3	500.0	-12.4	
4255.53	V	185.0	1.0	34.9	32.1	3.2	36.2	64.6	500.0	-17.8	
8180.98	V	180.0	1.0	33.8	38.5	4.9	43.2	144.5	500.0	-10.8	
10907.99	V	205.0	1.0	33.0	40.4	5.0	44.3	164.4	500.0	-9.7	
22938.00	V	0.0	1.0	24.5	40.5	2.5	67.5	3371.4	5000.0	-6.5	

Table 7: Radiated Emission Test Data - Plan A Channel 2

CLIENT:	Adtran	DATE:	8/7/02
TESTER:	J. Ritter	JOB #:	7154
EUT:	Tracer 4206		
CONFIGURATION:	Plan A Band 2		
CLOCKS:	Transmit at 5744Mhz (peak of signal)		
Test Equipment/Limit:		Test Requirements:	
ANTENNA:	A_00004	TEST STANDARD:	FCC Part 15
CABLE:	CSITE2_HF	DISTANCE:	3M
LIMIT:	LFCC_3m_Class_B	CLASS:	B
AMPLIFIER (dB)	34		

*Note Below 1Ghz Antenna A00008 Used with no amplifier

From 1-18 GHz antenna asset A00004 used with amp asset 00312

From 18-26 GHz antenna asset 00210 used (at 30cm test distance) no pre amp

From 26-40 GHz antenna asset 00209 used (at 30cm test distance) no pre amp

Frequency (MHz)	Polarity H/V	Azimuth Degree	Ant. Hght (m)	SA Level (dBuV)	Ant. Corr. (dB/m)	Cable Corr. (dB)	Corr. Level (dBuV/m)	Corr. Level (uV/m)	Limit (uV/m)	Margin dB	Notes
Peak measurements above 1GHz											
258.58	H	145.0	2.2	14.4	12.4	3.8	30.6	33.9	2000.0	-35.4	
979.18	H	180.0	1.6	7.2	22.7	8.0	37.9	78.5	5000.0	-36.1	
1365.99	H	180.0	1.0	43.3	26.6	2.1	38.1	80.1	5000.0	-35.9	
1421.00	H	145.0	1.0	44.7	26.8	2.3	39.8	97.5	5000.0	-34.2	
2732.00	H	145.0	1.0	51.3	30.3	2.9	50.5	335.8	5000.0	-23.5	
4098.00	H	180.0	1.0	43.0	31.8	3.0	43.8	154.8	5000.0	-30.2	
8195.94	H	145.0	1.0	39.8	38.5	4.9	49.2	287.7	5000.0	-24.8	
11488.00	H	0.0	1.0	32.2	40.8	5.0	44.0	159.2	5000.0	-29.9	amb
22976.00	H	0.0	1.0	34.0	40.5	2.7	77.2	7244.4	50000.0	-16.8	
Average measurements											
109.50	H	180.0	2.8	6.4	10.0	2.5	18.9	8.8	150.0	-24.6	QP
115.94	H	0.0	3.2	14.2	10.8	2.6	27.6	24.0	150.0	-15.9	QP
258.58	H	145.0	2.2	14.4	12.4	3.8	30.6	33.9	200.0	-15.4	QP
979.18	H	180.0	1.6	7.2	22.7	8.0	37.9	78.5	500.0	-16.1	QP
1365.99	H	180.0	1.0	39.6	26.6	2.1	34.3	52.1	500.0	-19.6	
1421.00	H	145.0	1.0	41.7	26.8	2.3	36.8	69.0	500.0	-17.2	
2732.00	H	145.0	1.0	49.8	30.3	2.9	49.0	282.5	500.0	-5.0	
4098.00	H	180.0	1.0	39.5	31.8	3.0	40.3	103.5	500.0	-13.7	
8195.94	H	145.0	1.0	30.2	38.5	4.9	39.6	95.3	500.0	-14.4	
11488.00	H	0.0	1.0	21.2	40.8	5.0	33.0	44.9	500.0	-20.9	amb
22978.00	H	0.0	1.0	22.8	40.5	2.7	66.0	1995.3	5000.0	-8.0	
Peak measurements above 1GHz											
1365.99	V	185.0	1.0	45.7	26.6	2.1	40.4	104.8	5000.0	-33.6	
1421.00	V	180.0	1.0	45.8	26.8	2.3	40.9	111.4	5000.0	-33.0	
2732.00	V	180.0	1.0	50.3	30.3	2.9	49.5	299.3	5000.0	-24.5	
4098.00	V	190.0	1.0	42.0	31.8	3.0	42.8	138.0	5000.0	-31.2	
8195.94	V	180.0	1.0	40.0	38.5	4.9	49.4	294.4	5000.0	-24.6	
11488.00	V	0.0	1.0	32.5	40.8	5.0	44.3	164.8	5000.0	-29.6	amb
22976.00	V	0.0	1.0	34.0	40.5	2.7	77.2	7244.4	50000.0	-16.8	

Frequency	Polarity	Azimuth	Ant. Hght	SA Level	Ant. Corr.	Cable Corr.	Corr. Level	Corr. Level	Limit	Margin	Notes
(MHz)	H/V	Degree	(m)	(dBuV)	(dB/m)	(dB)	(dBuV/m)	(uV/m)	(uV/m)	dB	
Average measurements											
109.50	V	270.0	1.5	3.9	10.0	2.5	16.4	6.6	150.0	-27.1	QP
115.94	V	135.0	1.6	9.2	10.8	2.6	22.6	13.5	150.0	-20.9	QP
258.58	V	0.0	2.5	6.4	12.4	3.8	22.6	13.5	200.0	-23.4	QP
979.18	V	170.0	2.0	5.7	22.7	8.0	36.4	66.1	500.0	-17.6	QP
1365.99	V	185.0	1.0	43.0	26.6	2.1	37.7	77.1	500.0	-16.2	
1421.00	V	180.0	1.0	43.8	26.8	2.3	38.9	88.5	500.0	-15.0	
2732.00	V	180.0	1.0	48.8	30.3	2.9	48.0	251.8	500.0	-6.0	
4098.00	V	190.0	1.0	39.8	31.8	3.0	40.6	107.5	500.0	-13.4	
8195.94	V	180.0	1.0	34.7	38.5	4.9	44.0	159.4	500.0	-9.9	
11488.00	V	0.0	1.0	21.2	40.8	5.0	33.0	44.7	500.0	-21.0	amb
22978.00	V	0.0	1.0	22.8	40.5	2.7	66.0	1995.3	5000.0	-8.0	

Table 8: Radiated Emission Test Data - Plan A Channel 3

CLIENT: Adtran
TESTER: J. Ritter
EUT: Tracer 4206
CONFIGURATION: Plan A Band 3
CLOCKS: Transmit at 5753.5Mhz (peak of signal)

DATE: 8/7/02
JOB #: 7154

Test Equipment/Limit:

ANTENNA: A_00004
CABLE: CSITE2_HF
LIMIT: LFCC_3m_Class_B
AMPLIFIER (dB) 34

Test Requirements:

TEST STANDARD: FCC Part 15
DISTANCE: 3M
CLASS: B

*Note Below 1Ghz Antenna A00008 Used with no amplifier
From 1-18 GHz antenna asset A00004 used with amp asset 00312
From 18-26 GHz antenna asset 00210 used (at 30cm test distance) no pre amp
From 26-40 GHz antenna asset 00209 used (at 30cm test distance) no pre amp

Frequency (MHz)	Polarity H/V	Azimuth Degree	Ant. Hght (m)	SA Level (QP) (dBuV)	Ant. Corr. (dB/m)	Cable Corr. (dB)	Corr. Level (dBuV/m)	Corr. Level (uV/m)	Limit (uV/m)	Margin dB	Notes
Peak measurements above 1GHz											
1368.22	H	180.0	1.0	43.3	26.6	2.2	38.1	80.2	5000.0	-35.9	
1423.26	H	160.0	1.0	45.8	26.8	2.3	40.9	111.2	5000.0	-33.1	
2736.50	H	145.0	1.0	51.2	30.3	2.9	50.4	329.8	5000.0	-23.6	
4104.75	H	180.0	1.0	43.7	31.9	3.0	44.5	167.7	5000.0	-29.5	
4269.78	H	180.0	1.0	38.2	32.1	3.3	39.6	95.0	5000.0	-34.4	
8209.50	H	165.0	1.0	38.7	38.5	4.9	48.1	253.7	5000.0	-25.9	
10946.00	H	190.0	1.0	38.0	40.4	4.9	49.3	292.4	5000.0	-24.7	
11507.00	H	0.0	1.0	44.2	40.9	5.0	56.0	633.0	5000.0	-18.0	
23014.00	H	0.0	1.0	34.2	40.5	2.7	77.4	7413.1	50000.0	-16.6	
Average measurements											
115.94	H	180.0	2.5	8.0	10.8	2.6	21.4	11.8	150.0	-22.1	QP
258.58	H	135.0	3.0	9.6	12.4	3.8	25.8	19.5	200.0	-20.2	QP
979.18	H	150.0	1.7	3.8	22.7	8.0	34.5	53.1	500.0	-19.5	QP
1368.22	H	180.0	1.0	39.2	26.6	2.2	33.9	49.7	500.0	-20.1	
1423.26	H	160.0	1.0	45.8	26.8	2.3	40.9	111.2	500.0	-13.1	
2736.50	H	145.0	1.0	49.8	30.3	2.9	49.0	282.7	500.0	-5.0	
4104.75	H	180.0	1.0	41.2	31.9	3.0	42.0	125.7	500.0	-12.0	
4269.78	H	180.0	1.0	30.2	32.1	3.3	31.6	37.8	500.0	-22.4	
8209.50	H	165.0	1.0	32.2	38.5	4.9	41.6	120.0	500.0	-12.4	
10946.00	H	190.0	1.0	29.9	40.4	4.9	41.2	115.1	500.0	-12.8	
11507.00	H	0.0	1.0	33.6	40.9	5.0	45.5	187.5	500.0	-8.5	
23014.00	H	0.0	1.0	23.8	40.5	2.7	67.0	2238.7	5000.0	-7.0	
Peak measurements above 1GHz											
1368.22	V	180.0	1.0	45.5	26.6	2.2	40.2	102.4	5000.0	-33.8	
1423.26	V	180.0	1.0	44.3	26.8	2.3	39.5	93.9	5000.0	-34.5	
2736.50	V	175.0	1.0	50.7	30.3	2.9	49.9	311.4	5000.0	-24.1	
4104.75	V	180.0	1.0	41.5	31.9	3.0	42.3	130.6	5000.0	-31.7	
4269.78	V	165.0	1.0	39.7	32.1	3.3	41.0	112.5	5000.0	-33.0	

Frequency (MHz)	Polarity H/V	Azimuth Degree	Ant. Hght (m)	SA Level (QP) (dBuV)	Ant. Corr. (dB/m)	Cable Corr. (dB)	Corr. Level (dBuV/m)	Corr. Level (uV/m)	Limit (uV/m)	Margin dB	Notes
8209.50	V	180.0	1.0	39.7	38.5	4.9	49.1	283.7	5000.0	-24.9	
10946.00	V	200.0	1.0	37.5	40.4	4.9	48.8	276.0	5000.0	-25.2	
11507.00	V	0.0	1.0	34.8	40.9	5.0	46.7	216.0	5000.0	-27.3	
23014.00	V	0.0	1.0	34.2	40.5	2.7	77.4	7413.1	50000.0	-16.6	
Average measurements											
115.94	V	180.0	3.2	8.0	10.8	2.6	21.4	11.8	150.0	-22.1	QP
258.58	V	135.0	1.4	9.6	12.4	3.8	25.8	19.5	200.0	-20.2	QP
979.18	V	150.0	2.6	3.8	22.7	8.0	34.5	53.1	500.0	-19.5	QP
1368.22	V	180.0	1.0	42.8	26.6	2.2	37.6	75.7	500.0	-16.4	
1423.26	V	180.0	1.0	40.8	26.8	2.3	36.0	62.8	500.0	-18.0	
2736.50	V	175.0	1.0	49.0	30.3	2.9	48.2	256.9	500.0	-5.8	
4104.75	V	180.0	1.0	37.8	31.9	3.0	38.6	85.6	500.0	-15.3	
4269.78	V	165.0	1.0	35.7	32.1	3.3	37.0	71.0	500.0	-17.0	
8209.50	V	180.0	1.0	35.3	38.5	4.9	44.7	172.1	500.0	-9.3	
10946.00	V	200.0	1.0	31.9	40.4	4.9	43.2	144.4	500.0	-10.8	
11507.00	V	0.0	1.0	24.7	40.9	5.0	36.5	67.1	500.0	-17.5	
23014.00	V	0.0	1.0	23.8	40.5	2.7	67.0	2238.7	5000.0	-7.0	

Table 9: Radiated Emission Test Data - Plan B Channel 1

CLIENT: Adtran
TESTER: J. Ritter
EUT: Tracer 4206
CONFIGURATION: Plan B Band 1
CLOCKS: Transmit at 5814.7Mhz (peak of signal)

DATE: 8/7/02
JOB #: 7154

Test Equipment/Limit:

ANTENNA: A_00004
CABLE: CSITE2_HF
LIMIT: LFCC_3m_Class_B
AMPLIFIER (dB) 34

Test Requirements:

TEST STANDARD: FCC Part 15
DISTANCE: 3M
CLASS: B

*Note Below 1Ghz Antenna A00008 Used with no amplifier
From 1-18 GHz antenna asset A00004 used with amp asset 00312
From 18-26 GHz antenna asset 00210 used (at 30cm test distance) no pre amp
From 26-40 GHz antenna asset 00209 used (at 30cm test distance) no pre amp

Frequency (MHz)	Polarity H/V	Azimuth Degree	Ant. Hght (m)	SA Level (QP) (dBuV)	Ant. Corr. (dB/m)	Cable Corr. (dB)	Corr. Level (dBuV/m)	Corr. Level (uV/m)	Limit (uV/m)	Margin dB	Notes
Peak measurements above 1GHz											
1398.50	H	90.0	1.0	43.2	26.7	2.2	38.1	80.6	5000.0	-35.8	
1597.62	H	125.0	1.0	43.6	27.5	2.7	39.8	97.9	5000.0	-34.2	
1700.69	H	100.0	1.0	43.2	27.9	2.9	40.0	99.7	5000.0	-34.0	
2767.00	H	150.0	1.0	51.0	30.3	2.9	50.2	324.6	5000.0	-23.8	
4150.50	H	180.0	1.0	39.8	31.9	3.1	40.8	109.3	5000.0	-33.2	
8301.00	H	180.0	1.0	36.2	38.6	4.9	45.6	191.5	5000.0	-28.3	
11629.40	H	45.0	1.0	29.0	41.0	5.0	41.0	112.0	5000.0	-33.0	amb
Average measurements											
109.50	H	350.0	2.0	8.6	10.0	2.5	21.1	11.3	150.0	-22.4	QP
115.94	H	0.0	2.4	11.3	10.8	2.6	24.7	17.2	150.0	-18.8	QP
244.78	H	0.0	2.1	10.5	12.4	3.7	26.6	21.3	200.0	-19.5	QP
258.58	H	350.0	1.8	9.2	12.4	3.8	25.4	18.6	200.0	-20.6	QP
979.18	H	180.0	1.6	6.8	22.7	8.0	37.5	75.0	500.0	-16.5	QP
1398.50	H	90.0	1.0	41.3	26.7	2.2	36.3	65.0	500.0	-17.7	
1597.62	H	125.0	1.0	41.6	27.5	2.7	37.8	77.7	500.0	-16.2	
1700.69	H	100.0	1.0	41.4	27.9	2.9	38.2	81.3	500.0	-15.8	
2767.00	H	150.0	1.0	49.5	30.3	2.9	48.7	273.1	500.0	-5.3	
4150.50	H	180.0	1.0	38.6	31.9	3.1	39.6	95.2	500.0	-14.4	
8301.00	H	180.0	1.0	30.9	38.6	4.9	40.3	104.0	500.0	-13.6	
11629.40	H	45.0	1.0	22.0	41.0	5.0	34.0	50.0	500.0	-20.0	amb
Peak measurements above 1GHz											
1398.50	V	180.0	1.0	47.5	26.7	2.2	42.5	132.7	5000.0	-31.5	
1597.62	V	170.0	1.0	40.2	27.5	2.7	36.4	65.9	5000.0	-37.6	
1700.69	V	150.0	1.0	41.2	27.9	2.9	38.0	79.2	5000.0	-36.0	
2767.00	V	180.0	1.0	50.7	30.3	2.9	49.9	312.5	5000.0	-24.1	
4150.50	V	195.0	1.0	42.0	31.9	3.1	43.0	140.8	5000.0	-31.0	
8301.00	V	180.0	1.0	39.0	38.6	4.9	48.4	264.4	5000.0	-25.5	
11629.40	V	0.0	1.0	30.1	41.0	5.0	42.1	127.1	5000.0	-31.9	amb

Frequency (MHz)	Polarity H/V	Azimuth Degree	Ant. Hght (m)	SA Level (QP) (dBuV)	Ant. Corr. (dB/m)	Cable Corr. (dB)	Corr. Level (dBuV/m)	Corr. Level (uV/m)	Limit (uV/m)	Margin dB	Notes
Average measurements											
109.50	V	190.0	3.0	4.7	10.0	2.5	17.2	7.2	150.0	-26.3	QP
115.94	V	270.0	1.2	6.1	10.8	2.6	19.5	9.5	150.0	-24.0	QP
244.78	V	270.0	1.7	4.3	12.4	3.7	20.4	10.4	200.0	-25.7	QP
258.58	V	180.0	1.7	7.3	12.4	3.8	23.5	15.0	200.0	-22.5	QP
979.18	V	180.0	2.3	5.6	22.7	8.0	36.3	65.3	500.0	-17.7	QP
1398.50	V	180.0	1.0	45.6	26.7	2.2	40.6	106.7	500.0	-13.4	
1597.62	V	170.0	1.0	33.1	27.5	2.7	29.3	29.2	500.0	-24.7	
1700.69	V	150.0	1.0	37.6	27.9	2.9	34.4	52.5	500.0	-19.6	
2767.00	V	180.0	1.0	49.0	30.3	2.9	48.2	257.8	500.0	-5.8	
4150.50	V	195.0	1.0	38.5	31.9	3.1	39.5	94.1	500.0	-14.5	
8301.00	V	180.0	1.0	34.7	38.6	4.9	44.1	160.6	500.0	-9.9	
11629.40	V	0.0	1.0	22.3	41.0	5.0	34.3	51.8	500.0	-19.7	amb

Table 10: Radiated Emission Test Data - Plan B Channel 2

CLIENT: Adtran
TESTER: J. Ritter
EUT: Tracer 4206
CONFIGURATION: Plan B Band 2
CLOCKS: Transmit at 5824.3Mhz (peak of signal)

DATE: 8/7/02
JOB #: 7154

Test Equipment/Limit:

ANTENNA: A_00004
CABLE: CSITE2_HF
LIMIT: LFCC_3m_Class_B
AMPLIFIER (dB) 34

Test Requirements:

TEST STANDARD: FCC Part 15
DISTANCE: 3M
CLASS: B

*Note Below 1Ghz Antenna A00008 Used with no amplifier

From 1-18 GHz antenna asset A00004 used with amp asset 00312

From 18-26 GHz antenna asset 00210 used (at 30cm test distance) no pre amp

From 26-40 GHz antenna asset 00209 used (at 30cm test distance) no pre amp

Frequency (MHz)	Polarity H/V	Azimuth Degree	Ant. Hght (m)	SA Level (QP) (dBuV)	Ant. Corr. (dB/m)	Cable Corr. (dB)	Corr. Level (dBuV/m)	Corr. Level (uV/m)	Limit (uV/m)	Margin dB	Notes
Peak measurements above 1GHz											
1386.00	H	180.0	1.0	41.0	26.7	2.2	35.9	62.2	5000.0	-38.1	
1401.00	H	165.0	1.0	42.7	26.7	2.2	37.6	76.3	5000.0	-36.3	
2772.00	H	135.0	1.0	52.0	30.3	2.9	51.2	364.4	5000.0	-22.7	
2802.00	H	145.0	1.0	42.1	30.4	2.9	41.4	117.0	5000.0	-32.6	
4158.00	H	190.0	1.0	41.2	31.9	3.1	42.2	128.7	5000.0	-31.8	
8316.00	H	180.0	1.0	35.4	38.6	4.9	44.9	174.9	5000.0	-29.1	
11648.00	H	0.0	1.0	36.0	41.0	5.0	48.0	251.3	5000.0	-26.0	amb
Average measurements											
115.94	H	165.0	1.8	5.2	10.8	2.6	18.6	8.5	150.0	-24.9	QP
258.58	H	180.0	1.2	6.8	12.4	3.8	23.0	14.1	200.0	-23.0	QP
979.18	H	170.0	2.0	5.5	22.7	8.0	36.2	64.6	500.0	-17.8	QP
1386.00	H	180.0	1.0	34.0	26.7	2.2	28.9	27.8	500.0	-25.1	
1401.00	H	165.0	1.0	36.5	26.7	2.2	31.5	37.5	500.0	-22.5	
2772.00	H	135.0	1.0	50.5	30.3	2.9	49.7	306.6	500.0	-4.2	
2802.00	H	145.0	1.0	38.5	30.4	2.9	37.8	77.3	500.0	-16.2	
4158.00	H	190.0	1.0	31.8	31.9	3.1	32.8	43.6	500.0	-21.2	
8316.00	H	180.0	1.0	27.9	38.6	4.9	37.4	73.7	500.0	-16.6	
11648.00	H	0.0	1.0	20.8	41.0	5.0	32.8	43.7	500.0	-21.2	amb
Peak measurements above 1GHz											
1386.00	V	180.0	1.0	45.2	26.7	2.2	40.0	100.5	5000.0	-33.9	
1401.00	V	180.0	1.0	47.5	26.7	2.2	42.5	133.0	5000.0	-31.5	
2772.00	V	180.0	1.0	51.7	30.3	2.9	50.9	350.8	5000.0	-23.1	
2802.00	V	190.0	1.0	39.7	30.4	2.9	38.9	88.4	5000.0	-35.0	
4158.00	V	165.0	1.0	43.8	31.9	3.1	44.8	174.3	5000.0	-29.2	
8316.00	V	185.0	1.0	38.0	38.6	4.9	47.5	235.9	5000.0	-26.5	
11648.00	V	0.0	1.0	32.2	41.0	5.0	44.2	161.7	5000.0	-29.8	amb

Frequency (MHz)	Polarity H/V	Azimuth Degree	Ant. Hght (m)	SA Level (QP) (dBuV)	Ant. Corr. (dB/m)	Cable Corr. (dB)	Corr. Level (dBuV/m)	Corr. Level (uV/m)	Limit (uV/m)	Margin dB	Notes
Average measurements											
115.94	V	270.0	1.2	5.2	10.8	2.6	18.6	8.5	150.0	-24.9	QP
258.58	V	180.0	1.7	6.8	12.4	3.8	23.0	14.1	200.0	-23.0	QP
979.18	V	180.0	2.3	5.5	22.7	8.0	36.2	64.6	500.0	-17.8	QP
1386.00	V	180.0	1.0	42.5	26.7	2.2	37.4	73.9	500.0	-16.6	
1401.00	V	180.0	1.0	45.7	26.7	2.2	40.6	107.7	500.0	-13.3	
2772.00	V	180.0	1.0	50.2	30.3	2.9	49.4	295.2	500.0	-4.6	
2802.00	V	190.0	1.0	34.2	30.4	2.9	33.4	46.9	500.0	-20.5	
4158.00	V	165.0	1.0	41.2	31.9	3.1	42.2	128.3	500.0	-11.8	
8316.00	V	185.0	1.0	33.8	38.6	4.9	43.3	145.9	500.0	-10.7	
11648.00	V	0.0	1.0	21.5	41.0	5.0	33.5	47.3	500.0	-20.5	amb

Table 11: Radiated Emission Test Data - Plan B Channel 3

CLIENT: Adtran DATE: 8/7/02
TESTER: J. Ritter JOB #: 7154
EUT: Tracer 4206
CONFIGURATION: Plan B Band 3
CLOCKS: Transmit at 5833.5Mhz (peak of signal)
Test Equipment/Limit:
ANTENNA: A_00004
CABLE: CSITE2_HF
LIMIT: LFCC_3m_Class_B
AMPLIFIER (dB) 34
Test Requirements:
TEST STANDARD: FCC Part 15
DISTANCE: 3M
CLASS: B

*Note Below 1Ghz Antenna A00008 Used with no amplifier
From 1-18 GHz antenna asset A00004 used with amp asset 00312
From 18-26 GHz antenna asset 00210 used (at 30cm test distance) no pre amp
From 26-40 GHz antenna asset 00209 used (at 30cm test distance) no pre amp

Frequency (MHz)	Polarity H/V	Azimuth Degree	Ant. Hght (m)	SA Level (QP) (dBuV)	Ant. Corr. (dB/m)	Cable Corr. (dB)	Corr. Level (dBuV/m)	Corr. Level (uV/m)	Limit (uV/m)	Margin dB	Notes
Peak measurements above 1GHz											
1403.26	H	90.0	1.0	41.5	26.8	2.2	36.5	66.8	5000.0	-37.5	
1494.54	H	150.0	1.0	38.5	27.1	2.5	34.1	50.6	5000.0	-39.9	
1700.67	H	145.0	1.0	43.5	27.9	2.9	40.3	103.5	5000.0	-33.7	
2806.50	H	170.0	1.0	42.5	30.4	2.9	41.8	122.5	5000.0	-32.2	
4164.75	H	165.0	1.0	40.7	31.9	3.1	41.7	121.4	5000.0	-32.3	
4209.70	H	180.0	1.0	38.3	32.0	3.2	39.5	94.3	5000.0	-34.5	
4209.75	H	180.0	1.0	38.2	32.0	3.2	39.4	92.9	5000.0	-34.6	
8419.50	H	180.0	1.0	37.3	38.7	4.9	46.8	220.0	5000.0	-27.1	
11667.00	H	0.0	1.0	31.8	41.0	5.0	43.8	155.3	5000.0	-30.2	amb
Average measurements											
109.51	H	20.0	3.1	9.6	10.0	2.5	22.1	12.7	1500.0	-41.4	QP
115.94	H	0.0	2.2	11.6	10.8	2.6	25.0	17.8	1500.0	-38.5	QP
257.69	H	25.0	2.4	15.3	12.4	3.7	31.5	37.4	2000.0	-34.6	QP
258.58	H	45.0	2.0	7.5	12.4	3.8	23.7	15.3	2000.0	-42.3	QP
1403.26	H	90.0	1.0	37.7	26.8	2.2	32.7	43.2	500.0	-21.3	
1494.54	H	150.0	1.0	33.0	27.1	2.5	28.6	26.9	500.0	-25.4	
1700.67	H	145.0	1.0	35.8	27.9	2.9	32.6	42.8	500.0	-21.3	
2806.50	H	170.0	1.0	37.3	30.4	2.9	36.6	67.6	500.0	-17.4	
4164.75	H	165.0	1.0	35.2	31.9	3.1	36.2	64.5	500.0	-17.8	
4209.70	H	180.0	1.0	32.8	32.0	3.2	34.0	50.1	500.0	-20.0	
4209.75	H	180.0	1.0	31.2	32.0	3.2	32.3	41.4	500.0	-21.6	
8419.50	H	180.0	1.0	33.2	38.7	4.9	42.7	136.8	500.0	-11.3	
11667.00	H	0.0	1.0	21.0	41.0	5.0	33.0	44.8	500.0	-21.0	amb
Peak measurements above 1GHz											
1403.26	V	180.0	1.0	47.0	26.8	2.2	42.0	125.8	5000.0	-32.0	
1494.54	V	150.0	1.0	41.3	27.1	2.5	36.9	70.1	5000.0	-37.1	
1700.67	V	145.0	1.0	43.5	27.9	2.9	40.3	103.5	5000.0	-33.7	
2806.50	V	165.0	1.0	39.5	30.4	2.9	38.8	86.8	5000.0	-35.2	
4164.75	V	180.0	1.0	44.6	31.9	3.1	45.6	190.9	5000.0	-28.4	
4209.70	V	180.0	1.0	42.5	32.0	3.2	43.7	152.4	5000.0	-30.3	
4209.75	V	180.0	1.0	43.8	32.0	3.2	45.0	177.0	5000.0	-29.0	
8419.50	V	180.0	1.0	41.3	38.7	4.9	50.8	348.7	5000.0	-23.1	
11667.00	V	0.0	1.0	32.7	41.0	5.0	44.7	171.7	500.0	-9.3	amb

Frequency (MHz)	Polarity H/V	Azimuth Degree	Ant. Hght (m)	SA Level (QP) (dBuV)	Ant. Corr. (dB/m)	Cable Corr. (dB)	Corr. Level (dBuV/m)	Corr. Level (uV/m)	Limit (uV/m)	Margin dB	Notes
Average											
109.51	V	270.0	2.3	3.4	10.0	2.5	15.9	6.2	150.0	-27.6	QP
115.94	V	145.0	1.2	7.2	10.8	2.6	20.6	10.7	150.0	-22.9	QP
257.69	V	170.0	1.6	12.3	12.4	3.7	28.4	26.4	200.0	-17.6	QP
258.48	V	0.0	2.0	5.6	12.4	3.8	21.8	12.3	200.0	-24.2	QP
1403.26	V	180.0	1.0	44.8	26.8	2.2	39.8	98.0	500.0	-14.2	
1494.54	V	150.0	1.0	34.5	27.1	2.5	30.1	31.9	500.0	-23.9	
1700.67	V	145.0	1.0	38.8	27.9	2.9	35.6	60.5	500.0	-18.3	
2806.50	V	165.0	1.0	34.2	30.4	2.9	33.5	47.1	500.0	-20.5	
4164.75	V	180.0	1.0	41.0	31.9	3.1	42.0	126.1	500.0	-12.0	
4209.70	V	180.0	1.0	39.0	32.0	3.2	40.2	101.9	500.0	-13.8	
4209.75	V	180.0	1.0	39.2	32.0	3.2	40.4	104.3	500.0	-13.6	
8419.50	V	180.0	1.0	36.4	38.7	4.9	45.9	197.7	500.0	-8.1	
11667.00	V	0.0	1.0	21.2	41.0	5.0	33.2	45.8	500.0	-20.8	amb

4.6 AC Powerline Conducted Emissions: (FCC Part §15.207)

The EUT was placed on an 80 cm high 1 x 1.5 m non-conductive table above a ground plane. Power to the EUT was provided through a Solar Corporation 50 Ω /50 μ H Line Impedance Stabilization Network bonded to a 3 x 2 meter ground plane. The LISN has its AC input supplied from a filtered AC power source. Power and data cables were moved about to obtain maximum emissions.

The 50 Ω output of the LISN was connected to the input of the spectrum analyzer and the emissions in the frequency range of 450 kHz to 30 MHz was measured. The detector function was set to quasi-peak or peak, as appropriate, and the resolution bandwidth during testing was at least 9 kHz, with all post-detector filtering no less than 10 times the resolution bandwidth.

Data is recorded in Table 11.

Table 12: Conducted Emissions Test Data; 15.207

CLIENT: Adtran Tracer 4206
DATE: 7/9/02
TESTER: J. Ritter
JOB #: 7154
TEST STANDARD: FCC Part 15
CLASS: FCC_B
TEST VOLTAGE: 120 VAC

LINE 1 - NEUTRAL

Frequency MHz	Voltage (QP) dBuV	Voltage uV	FCC Limit uV	Margin dB
0.48	25.2	18.2	250.0	-22.8
0.83	24.6	17.0	250.0	-23.4
1.20	26.0	20.0	250.0	-22.0
3.14	22.8	13.8	250.0	-25.2
3.57	22.5	13.3	250.0	-25.5
4.63	18.9	8.8	250.0	-29.1
8.43	15.2	5.8	250.0	-32.8
25.77	17.8	7.7	250.0	-30.2

LINE 2 - PHASE

Frequency MHz	Voltage (QP) dBuV	Voltage uV	FCC Limit uV	Margin dB
0.48	24.7	17.2	250.0	-23.2
0.83	24.3	16.4	250.0	-23.7
1.70	25.2	18.2	250.0	-22.8
3.14	21.6	12.0	250.0	-26.4
3.58	20.3	10.4	250.0	-27.6
4.63	15.3	5.8	250.0	-32.7
8.43	8.6	2.7	250.0	-39.4
25.77	12.0	4.0	250.0	-36.0