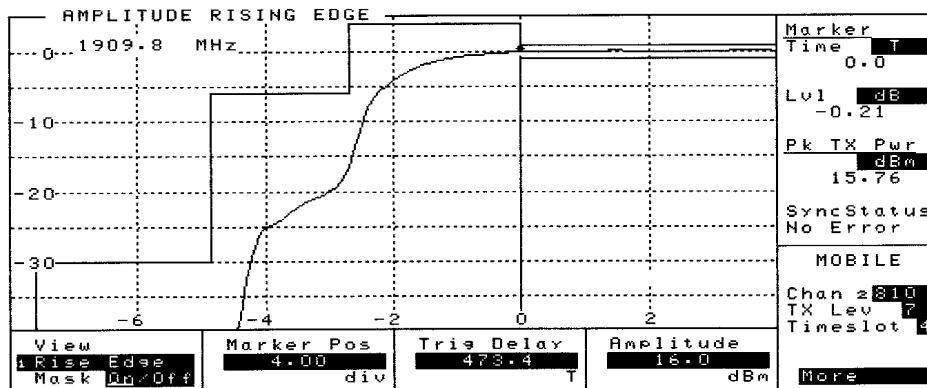


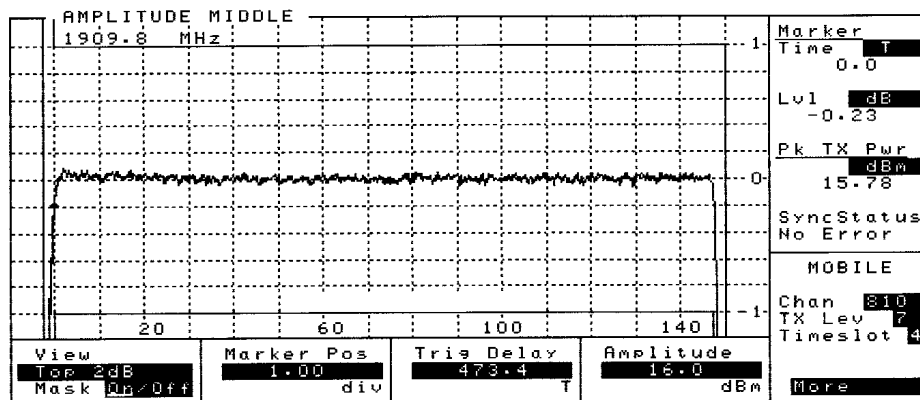
HP 8922M GSM MS Test Set: 07/10/99 12:03:00 PM

C



HP 8922M GSM MS Test Set: 07/10/99 12:04:00 PM

C



HP 8922M GSM MS Test Set: 07/10/99 12:05:00 PM

C

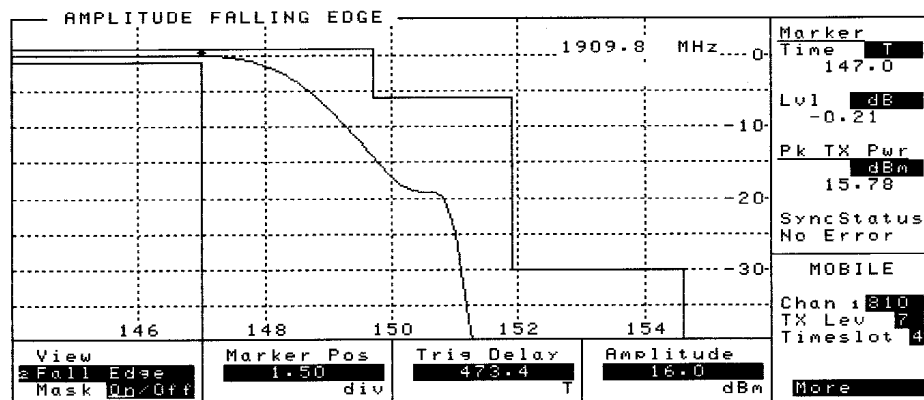
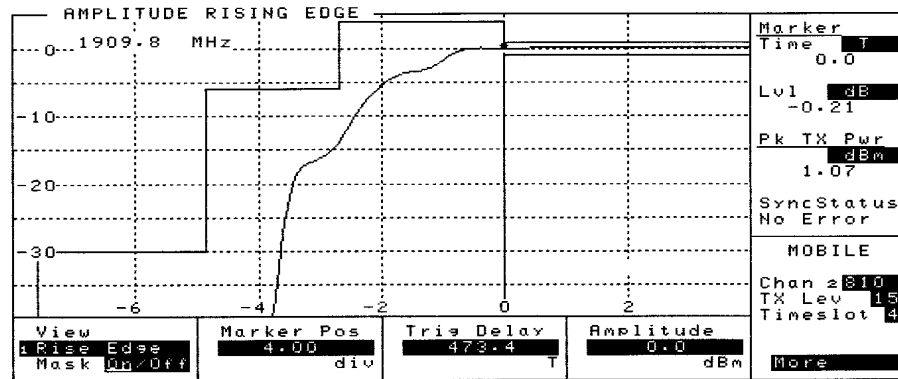


Figure 5.2.8 Carrier 1909.8 MHz (Ch 810) Power Level 7

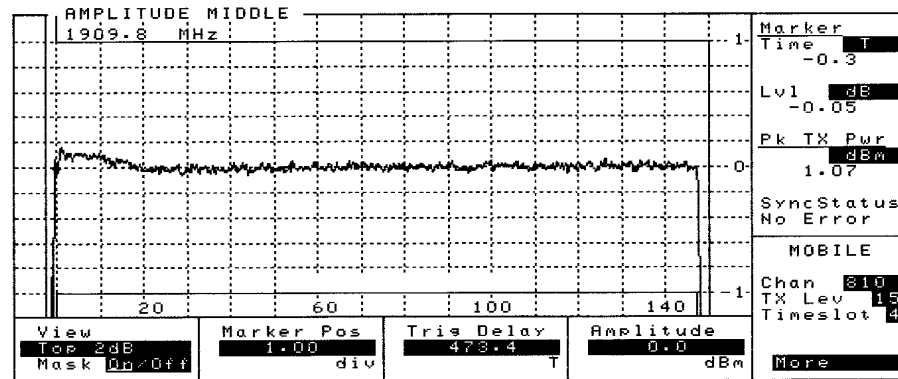
HP 8922M GSM MS Test Set: 07/10/99 01:56:00 pm

C



HP 8922M GSM MS Test Set: 07/10/99 01:56:00 pm

C



HP 8922M GSM MS Test Set: 07/10/99 01:55:00 pm

C

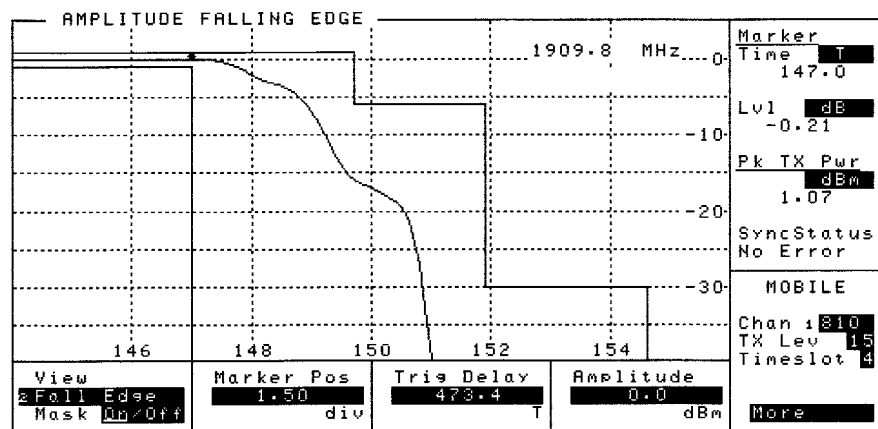


Figure 5.2.9 Carrier 1909.8 MHz (Ch 810) Power Level 15

5.1 Modulation Characteristics {2.987(d)}

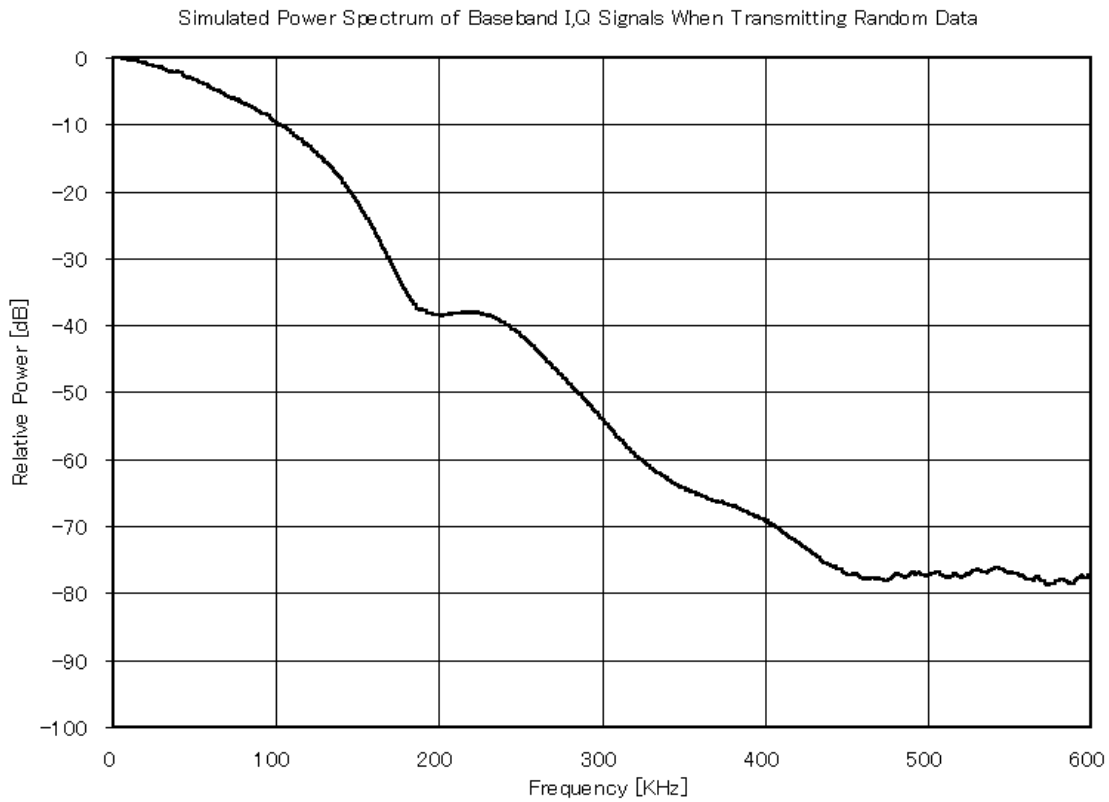


Figure 5.3.1 Simulated Modulation from IQ Output of Base Band Engine

Parameter	Specification
Phase Error	1.5 degRMS
	10.0degPEAK
Output Spectrum	
+200kHz	<-36dB
+250kHz	<-39dB
+400kHz	<-66dB
+600kHz to +1800kHz	<-76dB

Table 5.3.1 Simulated Modulation from IQ Output of Base Band Engine

5.2 Occupied Bandwidth Measurement Data {2.989(h)(1)}

Frequency	Occupied Bandwidth @ 99% Power (KHz)
1850.2 MHz	246.7
1864.8 MHz	246.7
1865.2 MHz	246.7
1869.8 MHz	246.7
1870.2 MHz	245.0
1884.8 MHz	248.3
1885.2 MHz	245.0
1889.8 MHz	248.3
1890.2 MHz	248.3
1894.8 MHz	248.3
1895.2 MHz	246.7
1909.8 MHz	246.7

Table 5.4.1 Occupied Bandwidth Measurement Results

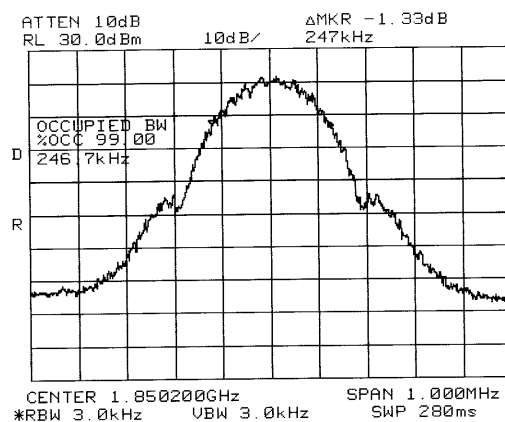


Figure 5.4.1 Block A Lower Edge 99% Power Occupied Bandwidth (Ch 512)

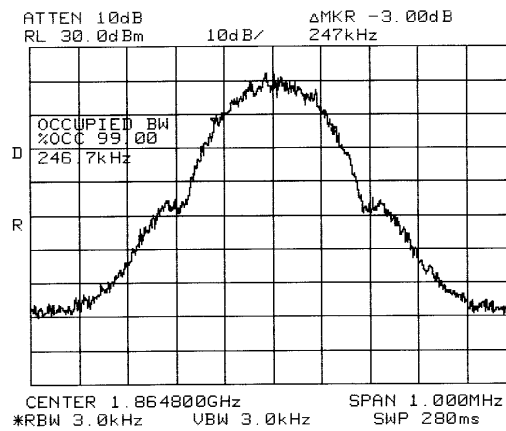


Figure 5.4.2 Block A Upper Edge 99% Power Occupied Bandwidth (Ch 585)

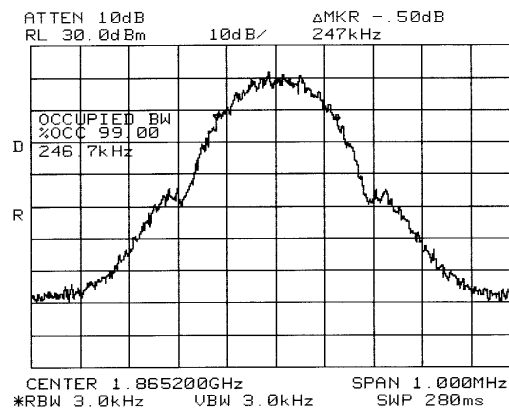


Figure 5.4.3 Block D Lower Edge 99% Power Occupied Bandwidth (Ch 587)

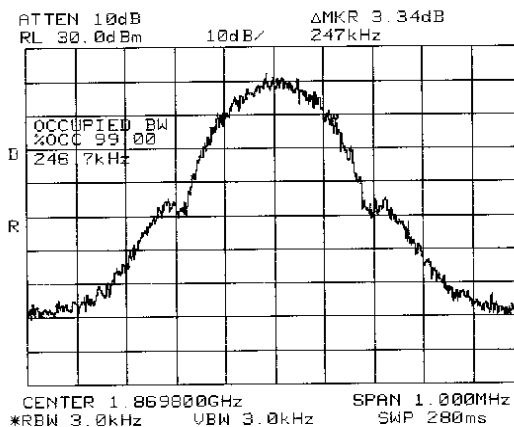


Figure 5.4.4 Block D Upper Edge 99% Power Occupied Bandwidth (Ch 610)

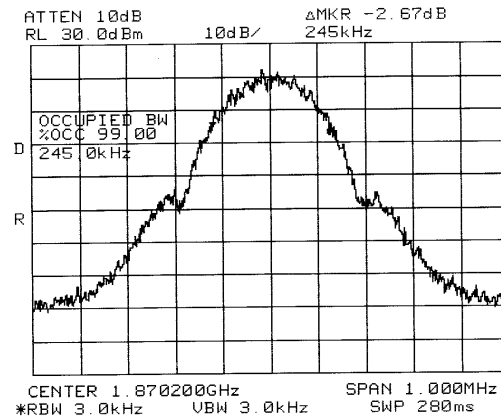


Figure 5.4.5 Block B Lower Edge 99% Power Occupied Bandwidth (Ch 612)

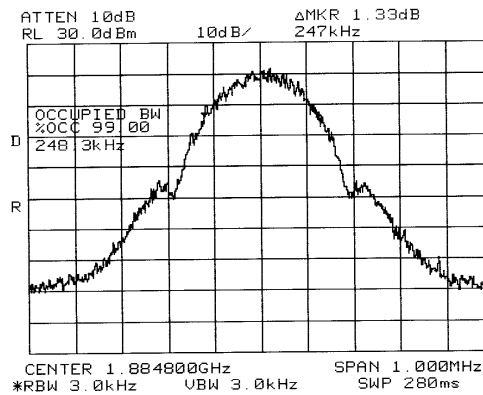


Figure 5.4.6 Block B Upper Edge 99% Power Occupied Bandwidth (Ch 685)

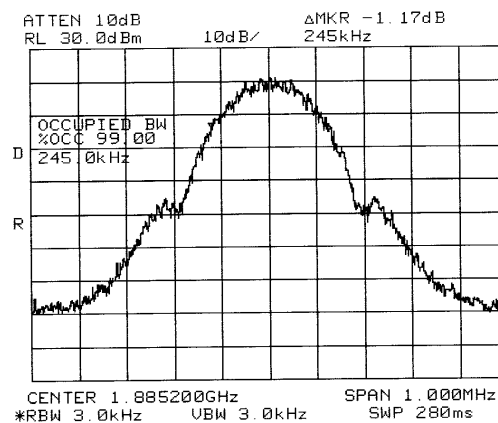


Figure 5.4.7 Block E Lower Edge 99% Power Occupied Bandwidth (Ch 687)

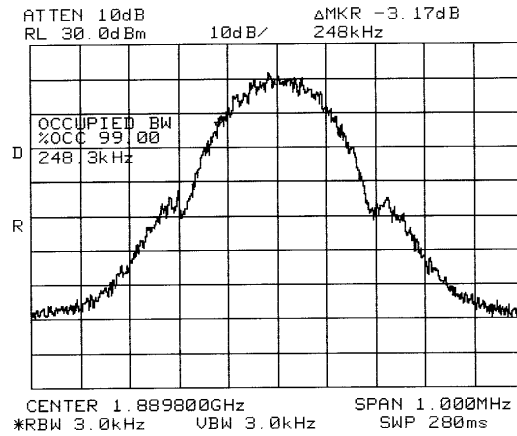


Figure 5.4.8 Block E Upper Edge 99% Power Occupied Bandwidth (Ch 710)

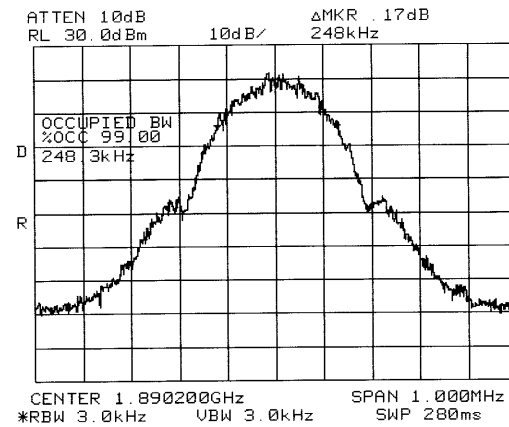


Figure 5.4.9 Block F Lower Edge 99% Power Occupied Bandwidth (Ch 712)

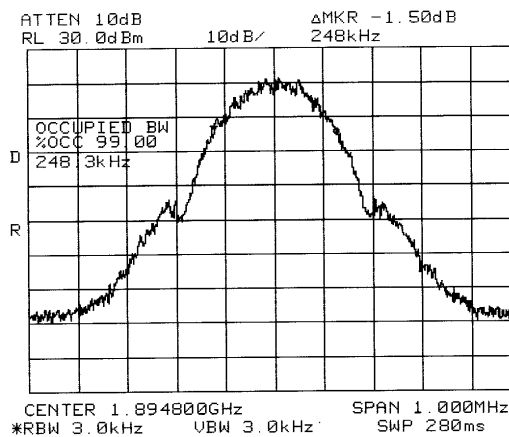


Figure 5.4.10 Block F Upper Edge 99% Power Occupied Bandwidth (Ch 735)

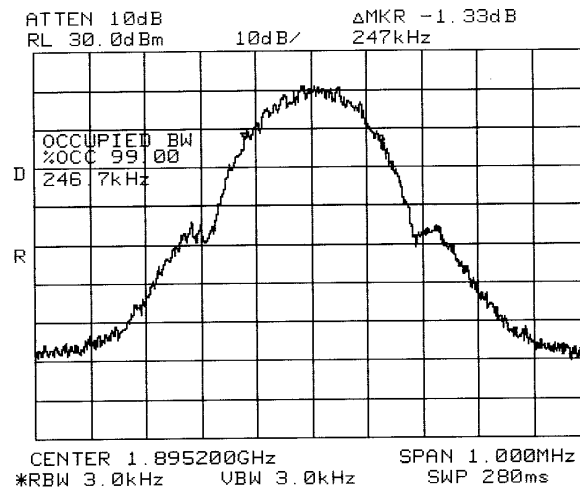


Figure 5.4.11 Block C Lower Edge 99% Power Occupied Bandwidth (Ch 737)

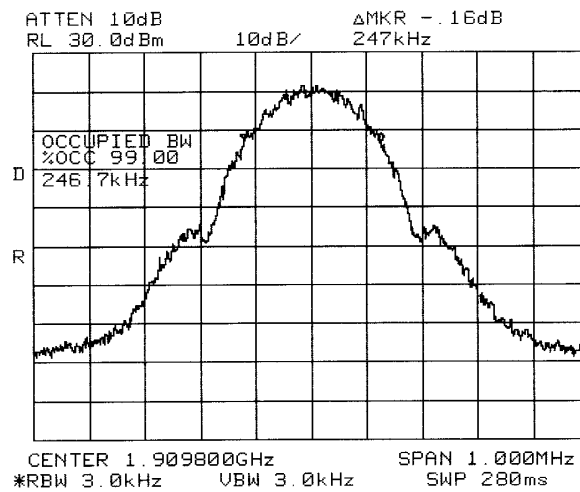


Figure 5.4.12 Block C Upper Edge 99% Power Occupied Bandwidth (Ch 810)

5.3 Conducted Emission at the Band Edges of PCS Frequency Blocks {24.238(b)(c)}

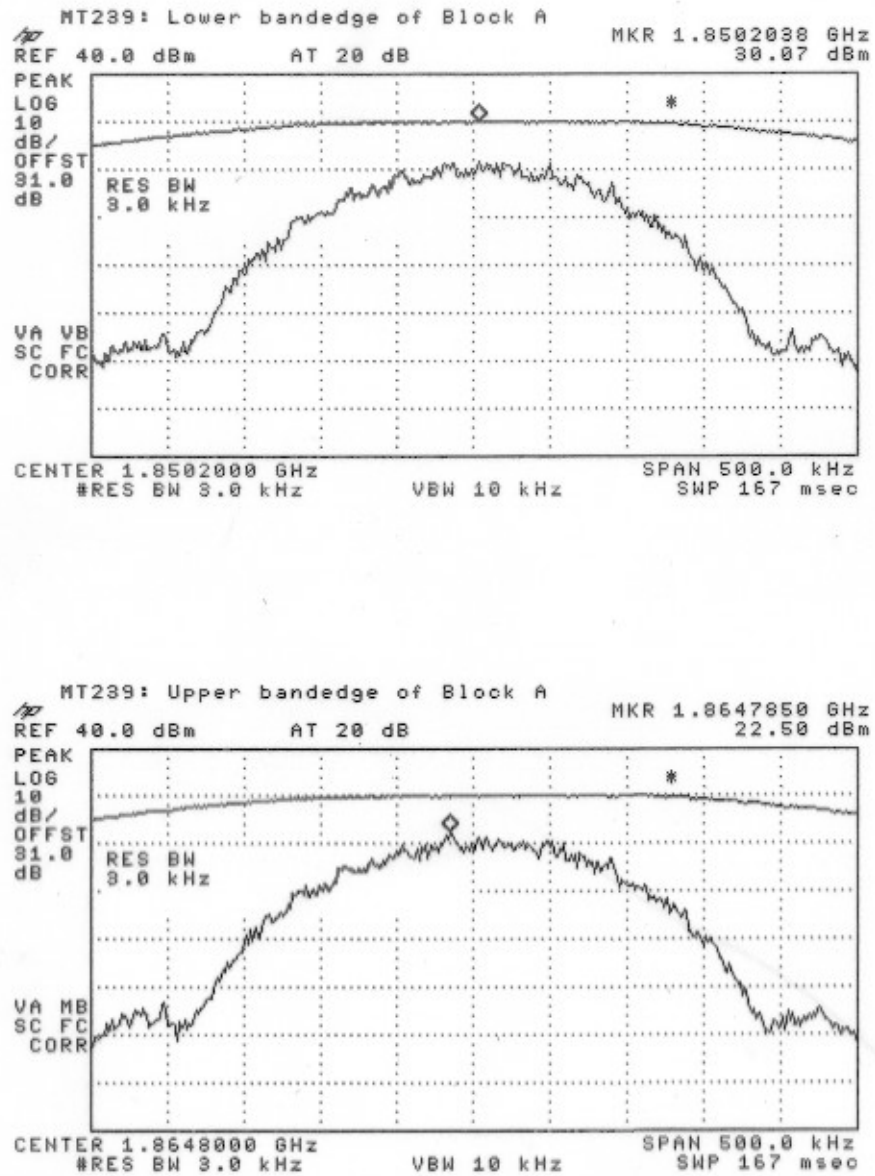


Figure 5.5.1 Lower and Upper Band Edges of Block A

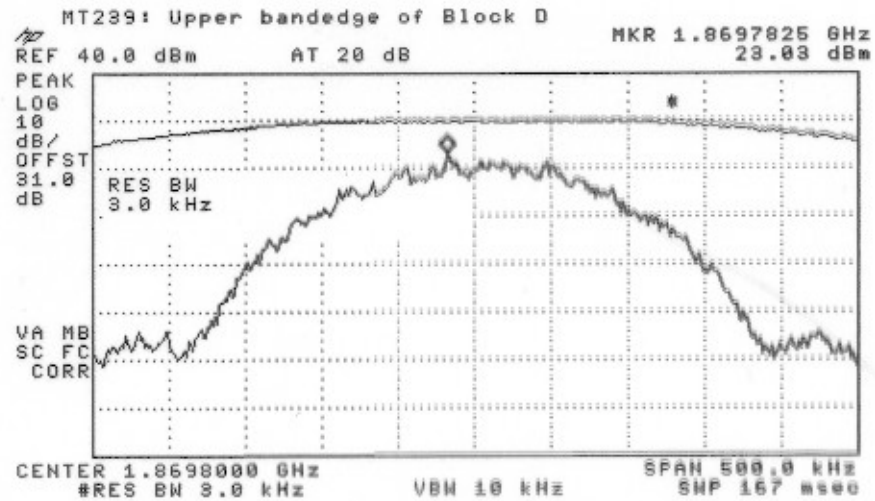
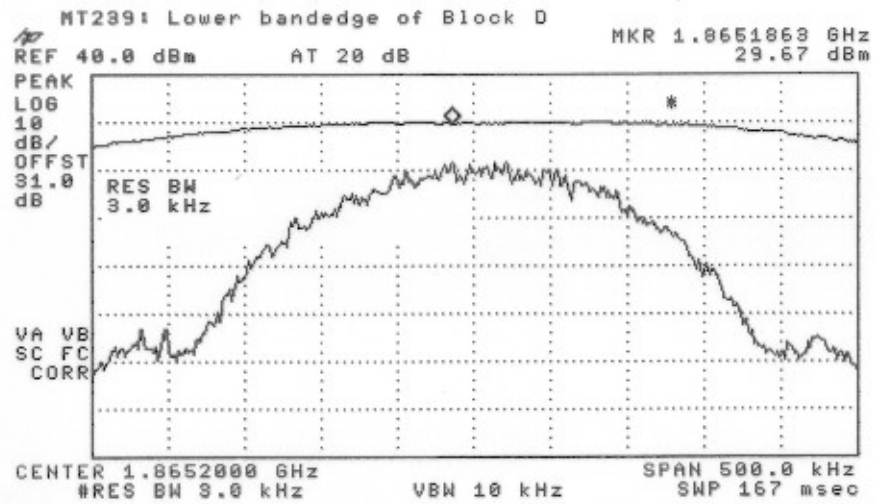


Figure 5.5.2 Lower and Upper Band Edges of Block D

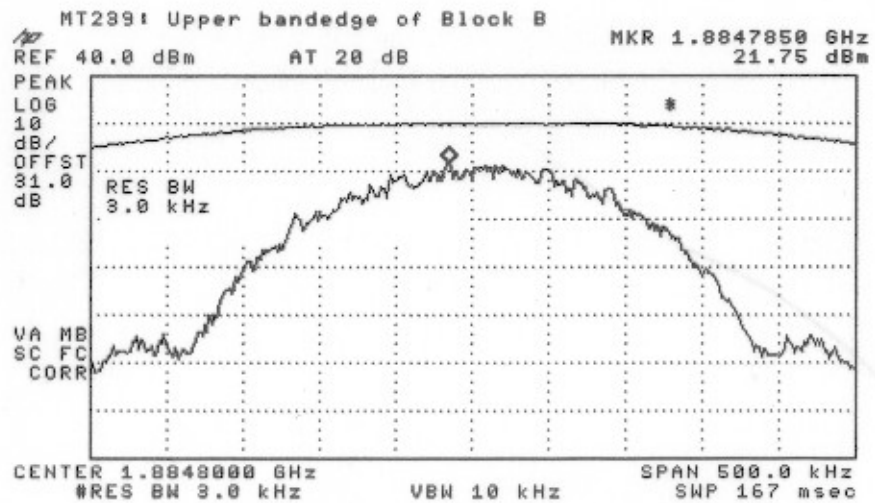
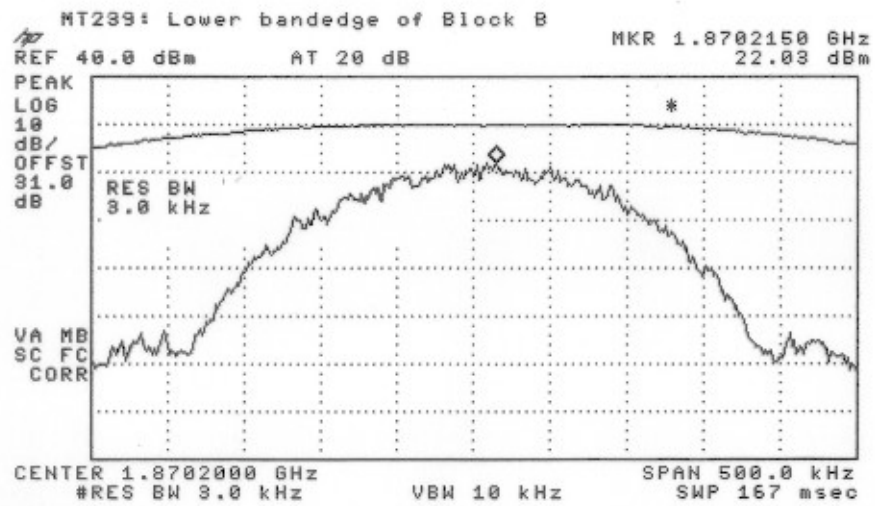


Figure 5.5.3 Lower and Upper Band Edges of Block B

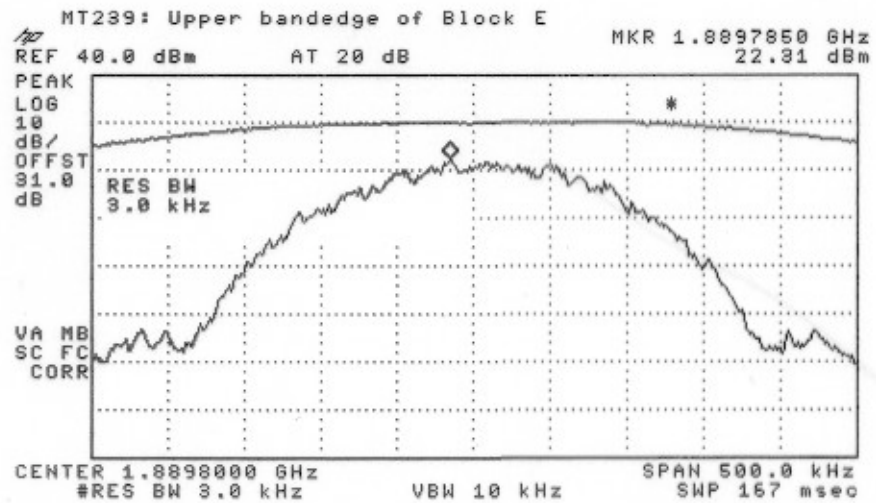
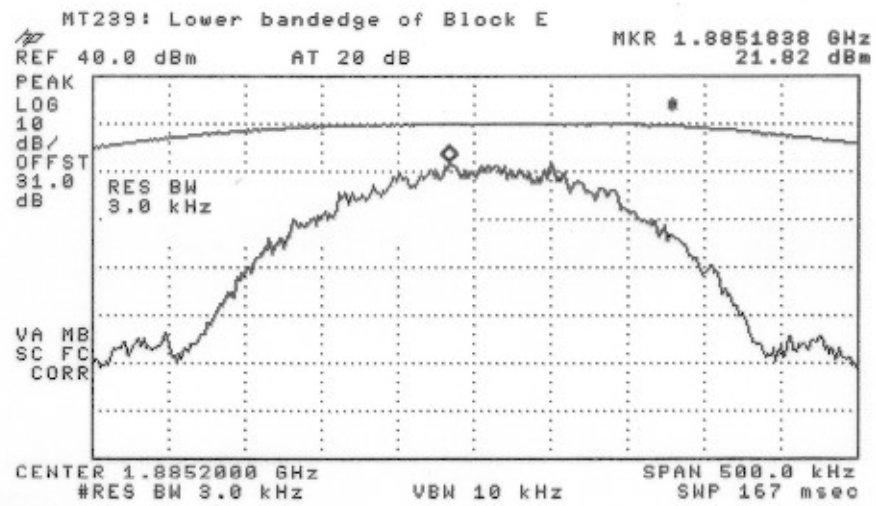


Figure 5.5.4 Lower and Upper Band Edges of Block E

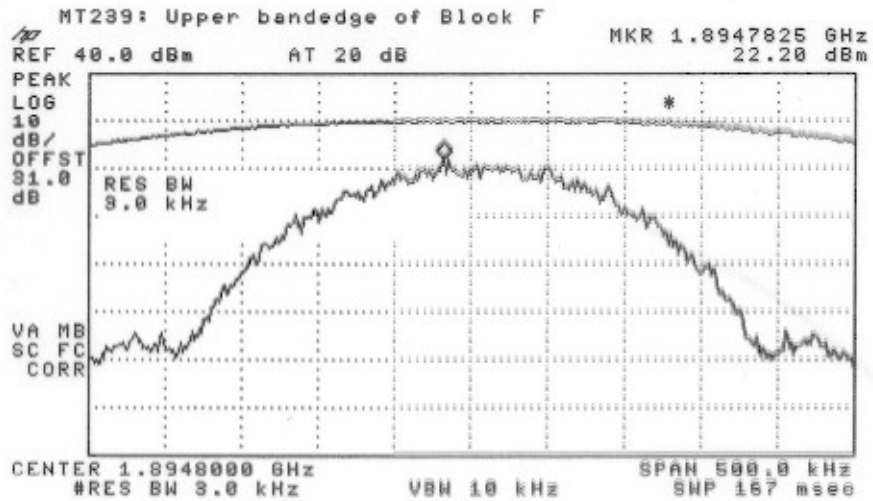
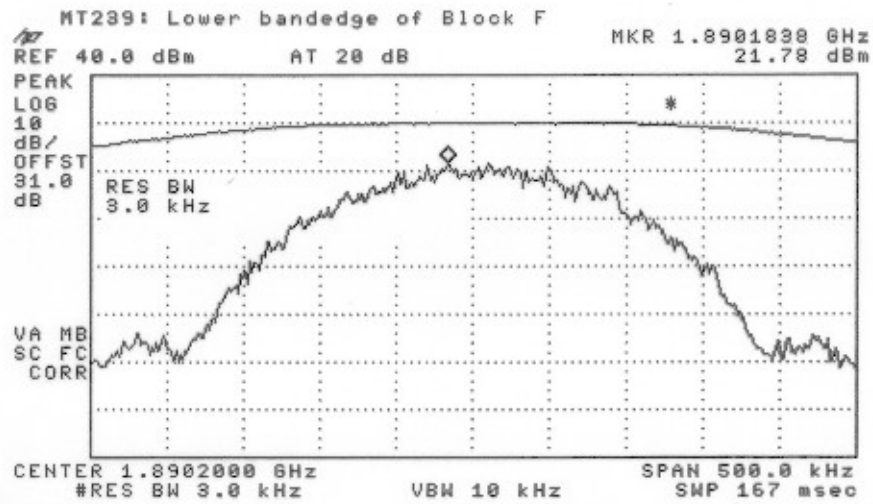


Figure 5.5.5 Lower and Upper Band Edges of Block F

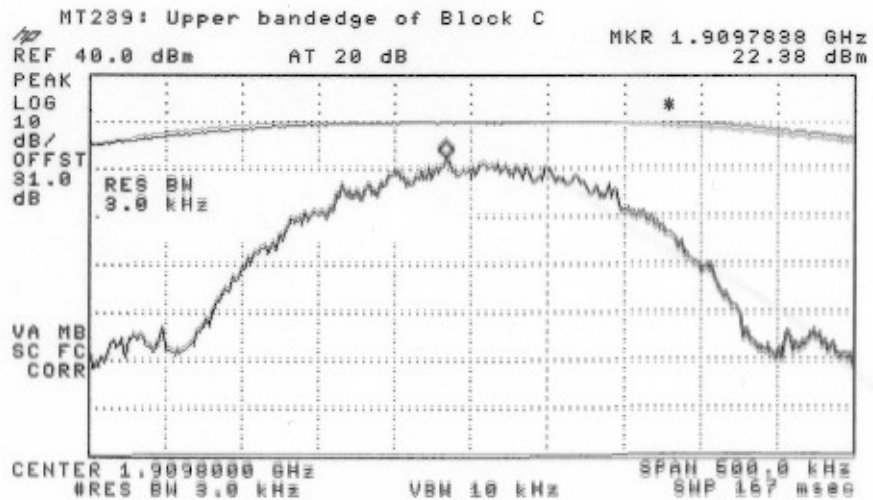
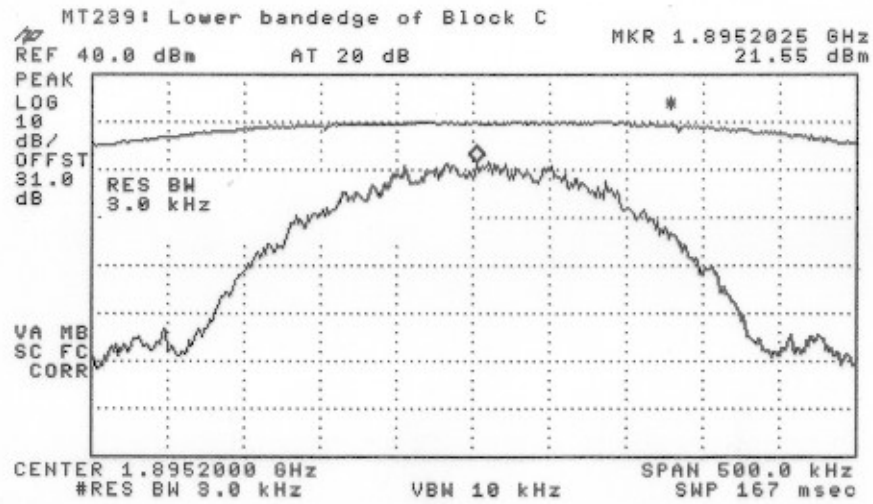


Figure 5.5.6 Lower and Upper Band Edges of Block C

5.4 Spurious Emissions at Antenna Terminal Measurement Data {2.991}

Refer to Table 5.2.2 for conducted power measured at Power Level 0 (+30dBm Nominal).

Frequency Range	Emissions Level (dBm) Carrier @ 1850.2 MHz (Ch 512)	Frequency of Spur (MHz)
13 - 1000 MHz	-32.9	812.5
1000 - 2900 MHz		
2900 MHz - 20 GHz	-25.7	11.11 GHz
1849 - 1850 MHz	-13.9	

Table 5.6.1 Recorded Conducted Emissions with Carrier @ 1850.2 MHz (Ch 512) Power Level 0

Frequency Range	Emissions Level (dBm) Carrier @ 1864.8 MHz (Ch 585)	Frequency of Spur (MHz)
13 - 1000 MHz	-32.5	834.7
1000 - 2900 MHz		
2900 MHz - 20 GHz	-25.9	11.19 GHz
1865 - 1866 MHz	-15.8	

Table 5.6.2 Recorded Conducted Emissions with Carrier @ 1864.8 MHz (Ch 585) Power Level 0

Frequency Range	Emissions Level (dBm) Carrier @ 1865.2 MHz (Ch 587)	Frequency of Spur (MHz)
13 - 1000 MHz	-32.5	837.1
1000 - 2900 MHz		
2900 MHz - 20 GHz	-26.7	11.19 GHz
1864 - 1865 MHz	-15.1	

Table 5.6.3 Recorded Conducted Emissions with Carrier @ 1865.2 MHz (Ch 587) Power Level 0

Frequency Range	Emissions Level (dBm) Carrier @ 1869.8 MHz (Ch 610)	Frequency of Spur (MHz)
13 - 1000 MHz	-32.7	842.1
1000 - 2900 MHz		
2900 MHz - 20 GHz	-26.8	11.24 GHz
1870 - 1871 MHz	-14.7	

Table 5.6.4 Recorded Conducted Emissions with Carrier @ 1869.8 MHz (Ch 610) Power Level 0

Frequency Range	Emissions Level (dBm) Carrier @ 1870.2 MHz (Ch 612)	Frequency of Spur (MHz)
-----------------	--	----------------------------

13 - 1000 MHz	-33.11	842.1
1000 - 2900 MHz		
2900 MHz - 20 GHz	-26.2	11.24 GHz
1869 - 1870 MHz	-13.2	

Table 5.6.5 Recorded Conducted Emissions with Carrier @ 1870.2 MHz (Ch 612) Power Level 0

Frequency Range	Emissions Level (dBm) Carrier @ 1884.8 MHz (Ch 685)	Frequency of Spur (MHz)
13 - 1000 MHz	-32.1	864.3
1000 - 2900 MHz		
2900 MHz - 20 GHz	-23.8	17.99 GHz
1885 - 1886 MHz	-15.0	

Table 5.6.6 Recorded Conducted Emissions with Carrier @ 1884.8 MHz (Ch 685) Power Level 0

Frequency Range	Emissions Level (dBm) Carrier @ 1885.2 MHz (Ch 687)	Frequency of Spur (MHz)
13 - 1000 MHz	-33.5	74.45
1000 - 2900 MHz		
2900 MHz - 20 GHz	-26.6	11.32 GHz
1884 - 1885 MHz	-15.1	

Table 5.6.7 Recorded Conducted Emissions with Carrier @ 1885.2 MHz (Ch 687) Power Level 0

Frequency Range	Emissions Level (dBm) Carrier @ 1889.8 MHz (Ch 710)	Frequency of Spur (MHz)
13 - 1000 MHz	-33.9	871.7
1000 - 2900 MHz		
2900 MHz - 20 GHz		
1890 - 1891 MHz	-15.5	

Table 5.6.8 Recorded Conducted Emissions with Carrier @ 1889.8 MHz (Ch 710) Power Level 0

Frequency Range	Emissions Level (dBm) Carrier @ 1890.2 MHz (Ch 712)	Frequency of Spur (MHz)
13 - 1000 MHz	-34.1	871.7
1000 - 2900 MHz		
2900 MHz - 20 GHz		
1889 - 1890 MHz	-13.1	

Table 5.6.9 Recorded Conducted Emissions with Carrier @ 1890.2 MHz (Ch 712) Power Level 0

Frequency Range	Emissions Level (dBm) Carrier @ 1894.8 MHz (Ch 735)	Frequency of Spur (MHz)
13 - 1000 MHz	-33.74	879.1
1000 - 2900 MHz		
2900 MHz - 20 GHz		
1895 - 1896 MHz	-15.7	

Table 5.6.10 Recorded Conducted Emissions with Carrier @ 1894.8 MHz (Ch 735) Power Level 0

Frequency Range	Emissions Level (dBm) Carrier @ 1895.2 MHz (Ch 737)	Frequency of Spur (MHz)
13 - 1000 MHz	-33.1	879.1
1000 - 2900 MHz		
2900 MHz - 20 GHz	-28.3	8.59 GHz
1894 - 1895 MHz	-14.9	

Table 5.6.11 Recorded Conducted Emissions with Carrier @ 1895.2 MHz (Ch 737) Power Level 0

Frequency Range	Emissions Level (dBm) Carrier @ 1909.8 MHz (Ch 810)	Frequency of Spur (MHz)
13 - 1000 MHz	-32.4	903.8
1000 - 2900 MHz		
2900 MHz - 20 GHz		
1910 - 1911 MHz	-15.0	

Table 5.6.12 Recorded Conducted Emissions with Carrier @ 1909.8 MHz (Ch 810) Power Level 0

5.5 Field Strength of Spurious Emissions Measurement Data {2.993}

All harmonics and spurs beyond the third harmonic were below the spectrum analyzers noise floor of $\cong -90$ dBm.

Radiated Emissions / Interference									
Notes: TX Low Channel 1850.2MHz +30dBm					Distance: 3				
Ant. Pol. (V/H)	Frequency MHz	Reading dB(uV)	Antenna Factor dB(1/m)	Cable Loss dB	Pre-amp Factor dB	Distance Factor dB	Net dB(uV/m)	Limit dB(uV/m)	Margin dB
TX +30dBm into retractable antenna(fully retracted)									
V	1850.200	96.7	28.6	1.9	0.0	0.0	127.1	n/a	n/a
V	1850.200	77.3	28.6	1.9	0.0	0.0	107.7	n/a	n/a
H	1850.200	95.4	28.6	1.9	0.0	0.0	125.8	n/a	n/a
H	1850.200	75.9	28.6	1.9	0.0	0.0	106.3	n/a	n/a
V	3700.400	31.9	32.3	2.3	0.0	0.0	66.4	84.4	-18.0
V	3700.400	17.1	32.3	2.3	0.0	0.0	51.6	84.4	-32.8
H	3700.400	33.2	32.3	2.3	0.0	0.0	67.7	84.4	-16.7
H	3700.400	18.2	32.3	2.3	0.0	0.0	52.7	84.4	-31.7
V	5550.600	28.3	34.9	2.9	0.0	0.0	66.1	84.4	-18.3
V	5550.600	16.1	34.9	2.9	0.0	0.0	53.9	84.4	-30.5
H	5550.600	27.8	34.9	2.9	0.0	0.0	65.6	84.4	-18.8
H	5550.600	15.8	34.9	2.9	0.0	0.0	53.6	84.4	-30.8
V	7400.800	32.3	37.9	3.5	0.0	0.0	73.7	84.4	-10.7
V	7400.800	20.7	37.9	3.5	0.0	0.0	62.1	84.4	-22.3
H	7400.800	32.0	37.9	3.5	0.0	0.0	73.4	84.4	-11.0
H	7400.800	20.7	37.9	3.5	0.0	0.0	62.1	84.4	-22.3
V	9251.000	32.0	39.4	4.1	0.0	0.0	75.5	84.4	-8.9
V	9251.000	20.7	39.4	4.1	0.0	0.0	64.2	84.4	-20.2
H	9251.000	32.0	39.4	4.1	0.0	0.0	75.5	84.4	-8.9
H	9251.000	21.2	39.4	4.1	0.0	0.0	64.7	84.4	-19.7

Table 5.7.1 Recorded Radiated Emissions with antenna fully retracted, carrier @ 1850.2 MHz (Ch 512) Power Level 0

Radiated Emissions / Interference

Notes: TX Mid Channel 1880.0Mhz +30dBm Distance: 3

Ant. Pol. (V/H)	Frequency MHz	Reading dB(uV)	Antenna Factor dB(1/m)	Cable Loss dB	Pre-amp Factor dB	Distance Factor dB	Net dB(uV/m)	Limit dB(uV/m)	Margin dB	
TX +30dBm into retractable antenna(fully Retracted)										
V	1880.000	96.8	28.8	1.9	0.0	0.0	127.5	n/a	n/a	Pk
V	1880.000	77.0	28.8	1.9	0.0	0.0	107.7	n/a	n/a	Avg
H	1880.000	94.7	28.8	1.9	0.0	0.0	125.4	n/a	n/a	Pk
H	1880.000	75.1	28.8	1.9	0.0	0.0	105.8	n/a	n/a	Avg
V	3760.000	32.2	32.5	2.3	0.0	0.0	67.0	84.4	-17.4	Pk
V	3760.000	17.7	32.5	2.3	0.0	0.0	52.5	84.4	-31.9	Avg
H	3760.000	30.1	32.5	2.3	0.0	0.0	64.9	84.4	-19.5	Pk
H	3760.000	16.1	32.5	2.3	0.0	0.0	50.9	84.4	-33.5	Avg
V	5640.000	26.7	35.4	2.9	0.0	0.0	65.0	84.4	-19.4	Pk
V	5640.000	16.1	35.4	2.9	0.0	0.0	54.4	84.4	-30.0	Avg
H	5640.000	27.7	35.4	2.9	0.0	0.0	66.0	84.4	-18.4	Pk
H	5640.000	15.9	35.4	2.9	0.0	0.0	54.2	84.4	-30.2	Avg
V	7520.000	33.3	37.8	3.5	0.0	0.0	74.6	84.4	-9.8	Pk
V	7520.000	21.9	37.8	3.5	0.0	0.0	63.2	84.4	-21.2	Avg
H	7520.000	33.2	37.8	3.5	0.0	0.0	74.5	84.4	-9.9	Pk
H	7520.000	21.9	37.8	3.5	0.0	0.0	63.2	84.4	-21.2	Avg
V	9400.000	31.8	38.7	4.1	0.0	0.0	74.6	84.4	-9.8	Pk
V	9400.000	20.9	38.7	4.1	0.0	0.0	63.7	84.4	-20.7	Avg
H	9400.000	32.2	38.7	4.1	0.0	0.0	75.0	84.4	-9.4	Pk
H	9400.000	20.9	38.7	4.1	0.0	0.0	63.7	84.4	-20.7	Avg

Table 5.7.2 Recorded Radiated Emissions with antenna fully retracted,
carrier @ 1880 MHz (Ch 661) Power Level 0

Radiated Emissions / Interference

Notes: TX High Channel 1909.8MHz +30dBm Distance: 3

Ant. Pol.	Frequency MHz	Reading dB(uV)	Antenna Factor dB(1/m)	Cable Loss dB	Pre-amp Factor dB	Distance Factor dB	Net dB(uV/m)	Limit dB(uV/m)	Margin dB	
TX +30dBm into Retractable Antenna (fully Retracted)										
V	1909.900	96.1	29.0	1.9	0.0	0.0	127.0	n/a	n/a	Pk
V	1909.900	76.6	29.0	1.9	0.0	0.0	107.5	n/a	n/a	Avg
H	1909.900	94.4	29.0	1.9	0.0	0.0	125.3	n/a	n/a	Pk
H	1909.900	74.9	29.0	1.9	0.0	0.0	105.8	n/a	n/a	Avg
V	3819.600	30.2	32.7	2.3	0.0	0.0	65.2	84.4	-19.2	Pk
V	3819.600	16.4	32.7	2.3	0.0	0.0	51.4	84.4	-33.0	Avg
H	3819.600	29.0	32.7	2.3	0.0	0.0	64.0	84.4	-20.4	Pk
H	3819.600	15.9	32.7	2.3	0.0	0.0	50.9	84.4	-33.5	Avg
V	5729.400	26.7	35.8	2.9	0.0	0.0	65.4	84.4	-19.0	Pk
V	5729.400	15.9	35.8	2.9	0.0	0.0	54.6	84.4	-29.8	Avg
H	5729.400	28.0	35.8	2.9	0.0	0.0	66.7	84.4	-17.7	Pk
H	5729.400	16.0	35.8	2.9	0.0	0.0	54.7	84.4	-29.7	Avg
V	7639.200	33.2	37.5	3.7	0.0	0.0	74.4	84.4	-10.0	Pk
V	7639.200	21.7	37.5	3.7	0.0	0.0	62.9	84.4	-21.5	Avg
H	7639.200	33.1	37.5	3.7	0.0	0.0	74.3	84.4	-10.1	Pk
H	7639.200	21.7	37.5	3.7	0.0	0.0	62.9	84.4	-21.5	Avg
V	9549.000	31.8	38.2	4.1	0.0	0.0	74.1	84.4	-10.3	Pk
V	9549.000	21.0	38.2	4.1	0.0	0.0	63.3	84.4	-21.1	Avg
H	9549.000	33.0	38.2	4.1	0.0	0.0	75.3	84.4	-9.1	Pk
H	9549.000	21.1	38.2	4.1	0.0	0.0	63.4	84.4	-21.0	Avg

Table 5.7.3 Recorded Radiated Emissions with antenna fully retracted,
carrier @ 1909.8 MHz (Ch 810) Power Level 0

Radiated Emissions / Interference

Notes: TX Low Channel 1850.2Mhz +30dBm Distance: 3

Ant. Pol. (V/H)	Frequency MHz	Reading dB(uV)	Antenna Factor dB(1/m)	Cable Loss dB	Pre-amp Factor dB	Distance Factor dB	Net dB(uV/m)	Limit dB(uV/m)	Margin dB	
TX +30dBm into retractable antenna(fully Extended)										
V	1850.200	96.3	28.6	1.9	0.0	0.0	126.7	n/a	n/a	Pk
V	1850.200	76.6	28.6	1.9	0.0	0.0	107.0	n/a	n/a	Avg
H	1850.200	94.2	28.6	1.9	0.0	0.0	124.6	n/a	n/a	Pk
H	1850.200	74.6	28.6	1.9	0.0	0.0	105.0	n/a	n/a	Avg
V	3700.400	30.4	32.3	2.3	0.0	0.0	64.9	84.4	-19.5	Pk
V	3700.400	16.2	32.3	2.3	0.0	0.0	50.7	84.4	-33.7	Avg
H	3700.400	31.0	32.3	2.3	0.0	0.0	65.5	84.4	-18.9	Pk
H	3700.400	16.7	32.3	2.3	0.0	0.0	51.2	84.4	-33.2	Avg
V	5550.600	27.0	34.9	2.9	0.0	0.0	64.8	84.4	-19.6	Pk
V	5550.600	15.8	34.9	2.9	0.0	0.0	53.6	84.4	-30.8	Avg
H	5550.600	27.5	34.9	2.9	0.0	0.0	65.3	84.4	-19.1	Pk
H	5550.600	15.8	34.9	2.9	0.0	0.0	53.6	84.4	-30.8	Avg
V	7400.800	32.6	37.9	3.5	0.0	0.0	74.0	84.4	-10.4	Pk
V	7400.800	20.7	37.9	3.5	0.0	0.0	62.1	84.4	-22.3	Avg
H	7400.800	32.1	37.9	3.5	0.0	0.0	73.5	84.4	-10.9	Pk
H	7400.800	20.7	37.9	3.5	0.0	0.0	62.1	84.4	-22.3	Avg
V	9251.000	32.1	39.4	4.1	0.0	0.0	75.6	84.4	-8.8	Pk
V	9251.000	21.2	39.4	4.1	0.0	0.0	64.7	84.4	-19.7	Avg
H	9251.000	32.1	39.4	4.1	0.0	0.0	75.6	84.4	-8.8	Pk
H	9251.000	21.2	39.4	4.1	0.0	0.0	64.7	84.4	-19.7	Avg

Table 5.7.4 Recorded Radiated Emissions with antenna fully extended,
Carrier @ 1850.2 MHz (Ch 512) Power Level 0

Radiated Emissions / Interference

Notes: TX Mid Channel 1880.0Mhz +30dBm Distance: 3

Ant. Pol.	Frequency MHz	Reading dB(uV)	Antenna Factor dB(1/m)	Cable Loss dB	Pre-amp Factor dB	Distance Factor dB	Net dB(uV/m)	Limit dB(uV/m)	Margin dB	
TX +30dBm into Retractable Antenna (fully Extended)										
V	1880.000	98.0	28.8	1.9	0.0	0.0	128.6	n/a	n/a	Pk
V	1880.000	78.3	28.8	1.9	0.0	0.0	108.9	n/a	n/a	Avg
H	1880.000	92.7	28.8	1.9	0.0	0.0	123.3	n/a	n/a	Pk
H	1880.000	73.3	28.8	1.9	0.0	0.0	103.9	n/a	n/a	Avg
V	3760.000	32.0	32.5	2.3	0.0	0.0	66.8	84.4	-17.6	Pk
V	3760.000	17.0	32.5	2.3	0.0	0.0	51.8	84.4	-32.6	Avg
H	3760.000	30.9	32.5	2.3	0.0	0.0	65.7	84.4	-18.7	Pk
H	3760.000	16.6	32.5	2.3	0.0	0.0	51.4	84.4	-33.0	Avg
V	5640.000	27.6	35.4	2.9	0.0	0.0	65.9	84.4	-18.5	Pk
V	5640.000	16.0	35.4	2.9	0.0	0.0	54.3	84.4	-30.1	Avg
H	5640.000	27.8	35.4	2.9	0.0	0.0	66.1	84.4	-18.3	Pk
H	5640.000	15.9	35.4	2.9	0.0	0.0	54.2	84.4	-30.2	Avg
V	7520.000	33.8	37.8	3.6	0.0	0.0	75.2	84.4	-9.2	Pk
V	7520.000	22.0	37.8	3.6	0.0	0.0	63.4	84.4	-21.0	Avg
H	7520.000	33.0	37.8	3.6	0.0	0.0	74.4	84.4	-10.0	Pk
H	7520.000	21.9	37.8	3.6	0.0	0.0	63.3	84.4	-21.1	Avg
V	9400.000	31.3	38.7	4.1	0.0	0.0	74.1	84.4	-10.3	Pk
V	9400.000	21.0	38.7	4.1	0.0	0.0	63.8	84.4	-20.6	Avg
H	9400.000	32.6	38.7	4.1	0.0	0.0	75.4	84.4	-9.0	Pk
H	9400.000	21.0	38.7	4.1	0.0	0.0	63.8	84.4	-20.6	Avg

Table 5.7.5 Recorded Radiated Emissions with antenna fully extended,
carrier @ 1880 MHz (Ch 661) Power Level 0

Radiated Emissions / Interference

Notes: TX High Channel 1909.8Mhz +30dBm Distance: 3

Ant. Pol.	Frequency MHz	Reading dB(uV)	Antenna Factor dB(1/m)	Cable Loss dB	Pre-amp Factor dB	Distance Factor dB	Net dB(uV/m)	Limit dB(uV/m)	Margin dB	
TX +30dBm into Retractable Antenna (fully Extended)										
V	1909.900	96.9	29.0	1.9	0.0	0.0	127.8	n/a	n/a	Pk
V	1909.900	77.4	29.0	1.9	0.0	0.0	108.3	n/a	n/a	Avg
H	1909.900	93.3	29.0	1.9	0.0	0.0	124.2	n/a	n/a	Pk
H	1909.900	73.5	29.0	1.9	0.0	0.0	104.4	n/a	n/a	Avg
V	3819.600	29.7	32.7	2.3	0.0	0.0	64.7	84.4	-19.7	Pk
V	3819.600	15.9	32.7	2.3	0.0	0.0	50.9	84.4	-33.5	Avg
H	3819.600	29.3	32.7	2.3	0.0	0.0	64.3	84.4	-20.1	Pk
H	3819.600	15.8	32.7	2.3	0.0	0.0	50.8	84.4	-33.6	Avg
V	5729.400	28.1	35.8	2.9	0.0	0.0	66.8	84.4	-17.6	Pk
V	5729.400	16.1	35.8	2.9	0.0	0.0	54.8	84.4	-29.6	Avg
H	5729.400	27.4	35.8	2.9	0.0	0.0	66.1	84.4	-18.3	Pk
H	5729.400	15.9	35.8	2.9	0.0	0.0	54.6	84.4	-29.8	Avg
V	7639.200	34.0	37.5	3.7	0.0	0.0	75.2	84.4	-9.2	Pk
V	7639.200	21.7	37.5	3.7	0.0	0.0	62.9	84.4	-21.5	Avg
H	7639.200	33.5	37.5	3.7	0.0	0.0	74.7	84.4	-9.7	Pk
H	7639.200	21.7	37.5	3.7	0.0	0.0	62.9	84.4	-21.5	Avg
V	9549.000	32.6	38.2	4.1	0.0	0.0	74.9	84.4	-9.5	Pk
V	9549.000	21.1	38.2	4.1	0.0	0.0	63.4	84.4	-21.0	Avg
H	9549.000	31.9	38.2	4.1	0.0	0.0	74.2	84.4	-10.2	Pk
H	9549.000	21.0	38.2	4.1	0.0	0.0	63.3	84.4	-21.1	Avg

Table 5.7.6 Recorded Radiated Emissions with antenna fully extended,
carrier @ 1909.8 MHz (Ch 810) Power Level 0

5.6 Frequency Stability Measurement Data {2.995}

5.6.1 Frequency Stability with Voltage Variation Measurement Data

The mobile station will operate @ 3.8 Vdc $\pm$ 10%.

Voltage (Vdc)	Frequency Variation (Hz)
3.4	98.9
3.5	97.6
3.6	103.7
3.7	107.7
3.8	106.2
3.9	109.3
4.0	103.3
4.1	101.6
4.2	14.9

Table 5.8.1 Frequency Stability with Voltage Variation Measurement Data

5.6.2 Frequency Stability with Temperature Variation Measurement Data

Temp. (°C)	Frequency Variation (Hz)
-30	20.7
-20	83.9
-10	94.7
0	87.2
10	78.2
20	-28.6
30	96.6
40	43.9
50	11.4

Table 5.8.2 Frequency Stability with Temperature Variation Measurement Data

5.7 Measurement Procedures and Data {Part 15 Class B}

Test Methodology

Both AC mains line-conducted and radiated emission measurements were performed according to the procedures in ANSI C63.4 (1992). All measurements were performed at: Mitsubishi Electric Corporation 8-1-1, Tsukaguti-Honmachi Amagasaki city, Hyogo 661 Japan. This test facility has been filed in FCC under the criteria in ANSI C63.4-1992. Preliminary scans were performed in the Test facility only to determine worst case modes. For each scan, the procedure for maximizing emissions as described below was followed. All radiated tests were performed at an antenna to EUT distance of 3 meters.

Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor, and subtracting the Amplifier Gain (if any) from the measured reading. The basic equation with a sample calculation is as follows:

$$FS = RA + AF + CF - AG$$

Where FS = Field Strength in dB μ V/m

RA = Receiver Amplitude (including preamplifier) in dB μ V

CF = Cable Attenuation Factor in dB

AF = Antenna Factor in dB/m

AG = Amplifier Gain in dB

In the following table(s), the reading shown on the data table reflects the preamplifier gain. An example for the calculations in the following table is as follows:

Assume a receiver reading of 52.0 dB μ V is obtained. The antenna factor of 7.4 dB/m and cable factor of 1.6 dB is added. The amplifier gain of 29 dB is subtracted, giving a field strength of 32 dB μ V/m. This value in dB μ V/m was converted to its corresponding level in μ V/m.

$$RA = 52.0 \text{ dB}(\mu\text{V})$$

$$AF = 7.4 \text{ dB}(1/\text{m})$$

$$CF = 1.6 \text{ dB}$$

$$AG = 29.0 \text{ dB}$$

$$FS = 32 \text{ dB}(\mu\text{V}/\text{m})$$

$$\text{Level in } \mu\text{V}/\text{m} = \text{Common Antilogarithm } [(32 \text{ dB}(\mu\text{V}/\text{m}))/20] = 39.8 \mu\text{V}/\text{m}$$

Emissions Test Procedures

The following is a description of the test procedure used by Mitsubishi Electric corporation in the measurements of equipment operating under FCC Part 15, Subpart B rules.

The test set-up and procedures described below are designed to meet the requirements of ANSI C63.4: 1992.

The Equipment Under Test (EUT) is placed on a wooden turntable which is 1.0m x 1.5m and 0.8 meters in height above the groundplane. During the radiated emissions test, the turntable is rotated and any cables leaving the EUT are manipulated to find the configuration resulting in maximum emissions. The antenna height and polarization are also varied during the testing to search for maximum signal levels. The height of the antenna is varied from one to four meters.

The receiver detector function for radiated emissions below 1 GHz is quasi-peak mode. Average readings, when required, are taken using the average detector function of the receiver. The detector function used for each measurement is indicated in the data tables.

For radiated emissions, the frequency range scanned is from the lowest radio frequency signal generated or used in the device or 30 MHz, whichever is lower, to the upper frequency chosen based on the following table from §15.33(b)(1) for digital unintentional radiators:

Highest frequency generated or used in the device or on which the device operates or tunes (MHz)	Upper frequency of measurement range (MHz)
Below 1.705	30
1.705 – 108	1000
108 – 500	2000
500 – 1000	5000
Above 1000	5th harmonic of the highest frequency or 40 GHz, whichever is lower

For line conducted emissions, the frequency range scanned is 450 kHz to 30 MHz.

For conducted emission measurements, an IF bandwidth of 10 kHz is used, and quasi-peak detection is employed. The resolution bandwidth used for measurement of radiated signals below 1 GHz is 120 kHz. Where pulsed transmissions of short enough pulse duration warrant, a greater bandwidth is selected according to the recommendations of Hewlett Packard Application Note 150-2. Above GHz, a resolution bandwidth of 1 MHz is used.

Measurements are normally conducted at a test distance of three meters. However, to assure low enough noise floor above 1 GHz, signals may be acquired at a distance of one meter or less. All measurements are extrapolated to three meters using inverse scaling (20dB/decade), but those measurements taken at a closer distance are so marked.

5.8 Measurement Data for Transmitter {SAR}

For SAR document, refer to EX11ASARDATA.doc in the RF Exposure Info folder.