General

This document describes the FCC/ETSI radiation test report of the ARF2496K. The test result inside this document should be seen as the reference for your product design; the final radiation/emission result of the ARF2496K is depended on the various parameters of the design of the final product; circuit design, PCB layout and component replacement for example.

Test Environment

Followed Requirement: FCC part 15.247 and ETSI EN 300 328

Device Under Test: ARF2496K RF module

Medium of Radiation: PCB antenna on board

Test Condition: In TX mode, output power is 0dBm under direct mode

In RX mode, it operates under direct mode

Power Condition: DC 3V battery

Test Lab: SPORTON International Inc.

Frequency range: 30 MHz to 1 GHz , above 1 GHz

Figure-1 Photo of ARF2496K Module

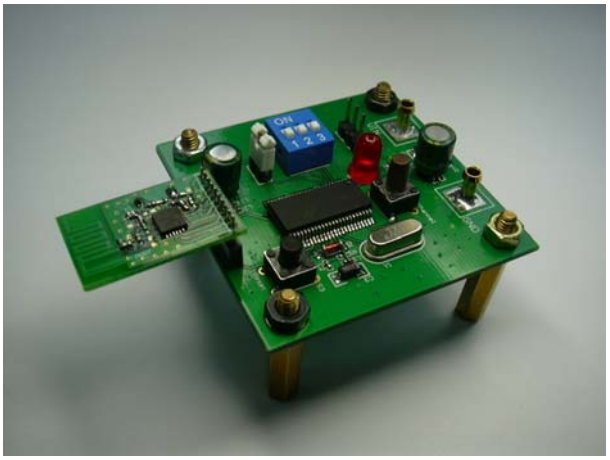


Figure-2 Photo of Test Board

FCC Test Information

Test Condition

Here lists the test conditions of the FCC test at TX/RX mode.

Followed Requirement: FCC part 15.247

Test Chamber: Semi Anechoic Chamber (966)

Measurement Mode: RF antenna radiation test

Operation Mode of ARF2496K: direct mode

Operation Frequency: 2.402GHz, 2.444GHz, 2.483GHz

Output Power: 0 dBm

Test Item

Transmitter field strength at 3m : Measurement the transmitter radiated emission power

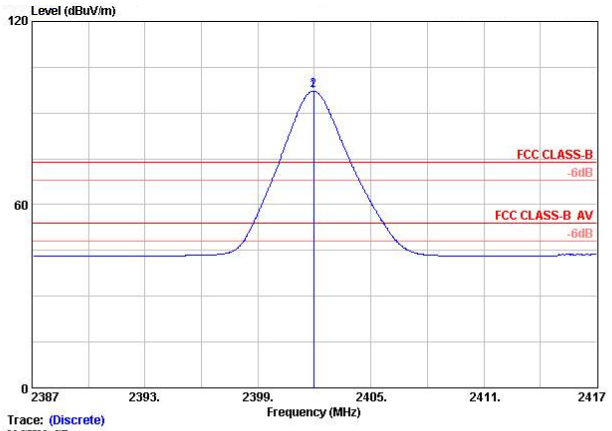
Transmitter radiated emissions test : Below 1 GHz , above 1 GHz

Receiver radiated emissions test : Below 1 GHz , above 1 GHz

Summary of the test results

Applied Standard : FCC part 15.247			
Rule Section	**Description of Test**	**Result**	**Under Limit**
15.247(d)	Transmitter of 30 MHz to 1 GHz	Complies	14 dB
15.247(d)	Transmitter above 1 GHz	Complies	4.7 dB
15.247(d)	Receiver of 30 MHz to 1 GHz	Complies	9.4 dB
15.247(d)	Receiver above 1 GHz	Complies	4.6 dB

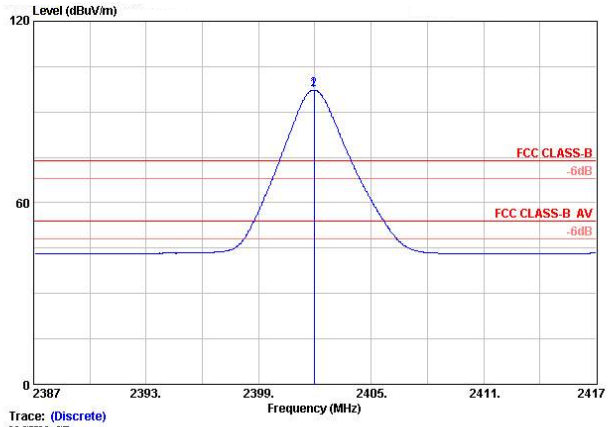
Transmitter field strength at 3m



Site : 03CH01-CB
Condition : FCC CLASS-B 3m 18GHORN ANT:20070301 HORIZONTAL 108cm 272deg
eut : ARF2496K
power : 0
Temp. : 24.3 'C
Relative Humidity : 56%
memo :

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1 @	2401.964	97.12	43.12	54.00	66.70	28.05	2.36	0.00	AVERAGE	108	272	HORIZONTAL
2 @	2401.964	97.30	23.30	74.00	66.88	28.05	2.36	0.00	PEAK	108	272	HORIZONTAL

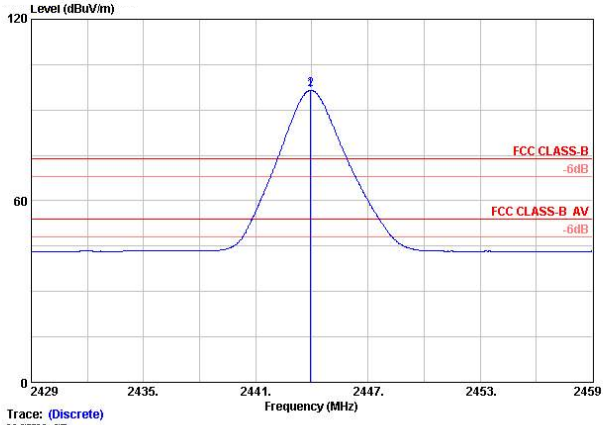
Figure-3 Transmitter field strength at 3m – 2402 MHz (Horizontal)



Site : 03CH01-CB
Condition : FCC CLASS-B 3m 18GHORN ANT:20070301 VERTICAL 106cm 0deg
eut : ARF2496K
power : 0
Temp. : 24.3 'C
Relative Humidity : 56%
memo :

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1 @	2401.964	97.19	43.19	54.00	66.78	28.05	2.36	0.00	AVERAGE	106	0	VERTICAL
2 @	2401.964	97.35	23.35	74.00	66.93	28.05	2.36	0.00	PEAK	106	0	VERTICAL

Figure-4 Transmitter field strength at 3m – 2402 MHz (Vertical)

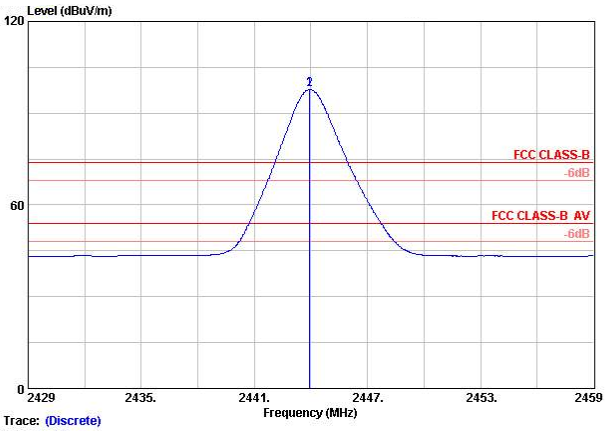


Trace: (Discrete)

Site : 03CH01-CB
Condition : FCC CLASS-B 3m 18GHORN ANT:20070301 HORIZONTAL 108cm 272deg
eut : ARF2496K
power : 0
Temp. : 24.3 'C
Relative Humidity : 56%
memo :

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1	2443.940	96.49	42.49	54.00	65.92	28.18	2.40	0.00	AVERAGE	108	272	HORIZONTAL
2	2443.940	96.65	22.65	74.00	66.08	28.18	2.40	0.00	PEAK	108	272	HORIZONTAL

Figure-5 Transmitter field strength at 3m – 2444 MHz (Horizontal)

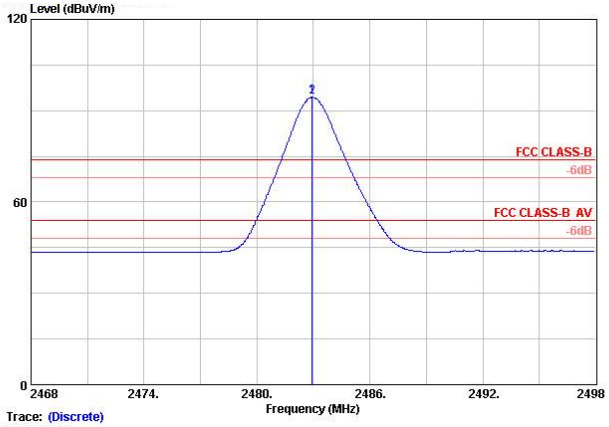


Trace: (Discrete)

Site : 03CH01-CB
Condition : FCC CLASS-B 3m 18GHORN ANT:20070301 VERTICAL 105cm 28deg
eut : ARF2496K
power : 0
Temp. : 24.3 'C
Relative Humidity : 56%
memo :

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1	2443.940	97.67	43.67	54.00	67.09	28.18	2.40	0.00	AVERAGE	105	28	VERTICAL
2	2443.940	97.81	23.81	74.00	67.24	28.18	2.40	0.00	PEAK	105	28	VERTICAL

Figure-6 Transmitter field strength at 3m – 2444 MHz (Vertical)

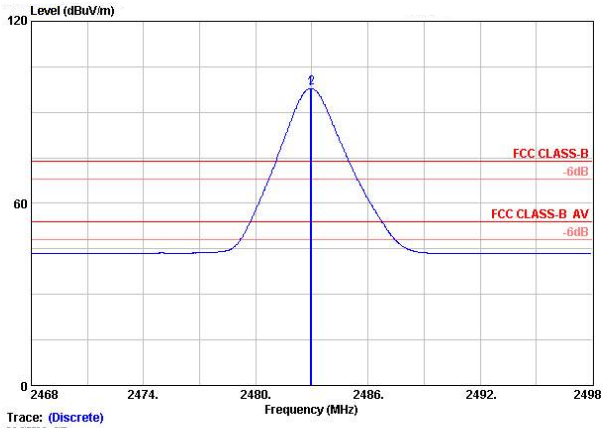


Trace: (Discrete)

Site : 03CH01-CB
Condition : FCC CLASS-B 3m 18GHORN ANT:20070301 HORIZONTAL 105cm 272deg
eut : ARF2496K
power : 0
Temp. : 24.3 'C
Relative Humidity : 56%
memo :

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1	2482.940	94.35	40.35	54.00	63.68	28.26	2.41	0.00	AVERAGE	105	272	HORIZONTAL
2	2482.940	94.53	20.53	74.00	63.86	28.26	2.41	0.00	PEAK	105	272	HORIZONTAL

Figure-7 Transmitter field strength at 3m – 2483 MHz (Horizontal)



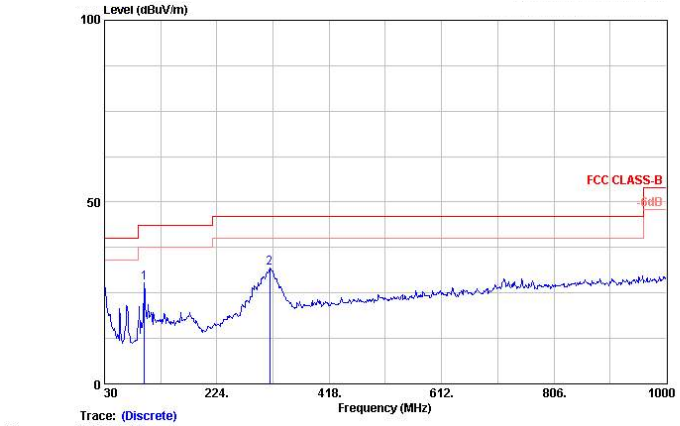
Trace: (Discrete)

Site : 03CH01-CB
Condition : FCC CLASS-B 3m 18GHORN ANT:20070301 VERTICAL 103cm 9deg
eut : ARF2496K
power : 0
Temp. : 24.3 'C
Relative Humidity : 56%
memo :

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1	2482.940	97.78	43.78	54.00	67.11	28.26	2.41	0.00	AVERAGE	103	9	VERTICAL
2	2483.000	97.95	23.95	74.00	67.28	28.26	2.41	0.00	PEAK	103	9	VERTICAL

Figure-8 Transmitter field strength at 3m – 2483 MHz (Vertical)

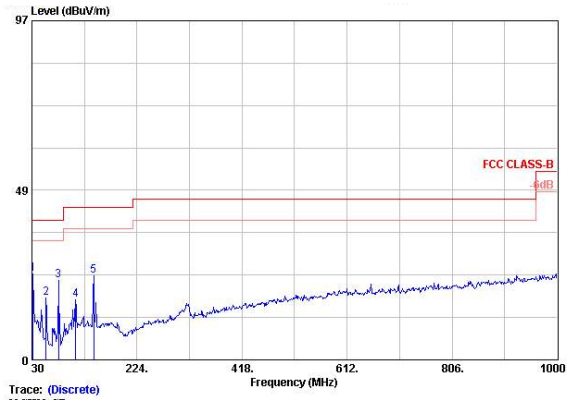
FCC Test Result at TX Mode (Below 1GHz)



Trace: (Discrete)
Site : 03CH01-CB
Condition : FCC CLASS-B 3m BILOG ANT20070726 HORIZONTAL 100cm 0deg
eut : ARF2496K
power : 0
Temp. : 24.3 'C
Relative Humidity : 56%
memo :

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1	98.870	27.75	-15.75	43.50	42.56	10.79	0.36	25.96	Peak	100	0	HORIZONTAL
2	315.180	31.83	-14.17	46.00	41.86	13.78	1.15	24.96	Peak	100	0	HORIZONTAL

Figure-9 Transmitter Radiated Emission - 30 MHz ~ 1 GHz (Horizontal)

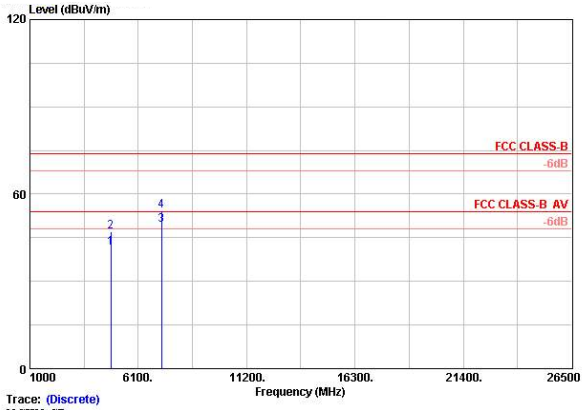


Trace: (Discrete)
Site : 03CH01-CB
Condition : FCC CLASS-B 3m BILOG ANT20070726 VERTICAL 200cm 0deg
eut : ARF2496K
power : 0
Temp. : 24.3 'C
Relative Humidity : 56%
memo :

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1	31.940	24.57	-15.43	40.00	39.74	17.69	0.32	33.19	Peak	200	0	VERTICAL
2	56.190	17.74	-22.26	40.00	42.91	7.47	0.45	33.09	Peak	200	0	VERTICAL
3	79.470	22.64	-17.36	40.00	48.24	7.12	0.32	33.04	Peak	200	0	VERTICAL
4	110.510	17.16	-26.34	43.50	37.74	11.80	0.61	32.99	Peak	200	0	VERTICAL
5	144.460	24.10	-19.40	43.50	44.40	12.12	0.53	32.96	Peak	200	0	VERTICAL

Figure-10 Transmitter Radiated Emission - 30 MHz ~ 1 GHz (Vertical)

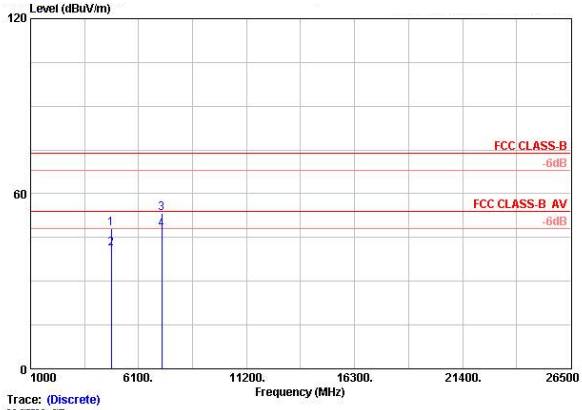
FCC Test Result at TX Mode (Above 1GHz)



Trace: (Discrete)
Site : 03CH01-CB
Condition : FCC CLASS-B 3m 18GHORN ANT:20070301 HORIZONTAL 0cm 0deg
eut : ARF2496K
power : 0
Temp. : 24.3 'C
Relative Humidity : 56%
memo :

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1	4803.890	41.42	-12.58	54.00	39.95	33.36	3.36	35.25	AVERAGE	201	53	HORIZONTAL
2	4804.100	47.15	-26.85	74.00	45.68	33.36	3.36	35.25	PEAK	201	53	HORIZONTAL
3 !	7205.848	49.29	-4.71	54.00	44.79	36.33	4.00	35.82	AVERAGE	159	329	HORIZONTAL
4	7205.880	54.15	-19.85	74.00	49.65	36.33	4.00	35.82	PEAK	159	329	HORIZONTAL

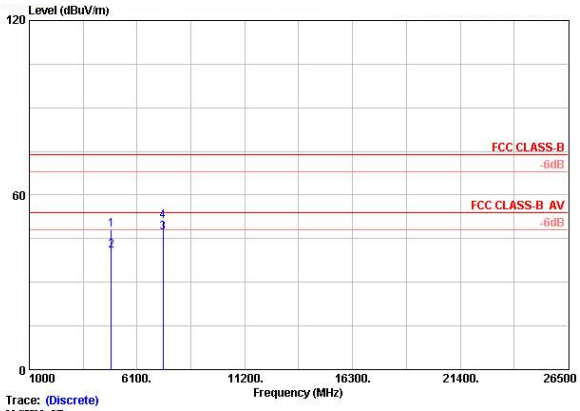
Figure-11 TX harmonic of 2402 MHz (Horizontal)



Trace: (Discrete)
Site : 03CH01-CB
Condition : FCC CLASS-B 3m 18GHORN ANT:20070301 VERTICAL 0cm 0deg
eut : ARF2496K
power : 0
Temp. : 24.3 'C
Relative Humidity : 56%
memo :

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1	4803.690	48.14	-25.86	74.00	46.67	33.36	3.36	35.25	PEAK	100	345	VERTICAL
2	4803.910	41.16	-12.84	54.00	39.69	33.36	3.36	35.25	AVERAGE	100	345	VERTICAL
3	7205.748	53.26	-20.74	74.00	48.76	36.33	4.00	35.82	PEAK	178	86	VERTICAL
4	7205.832	47.70	-6.30	54.00	43.20	36.33	4.00	35.82	AVERAGE	178	86	VERTICAL

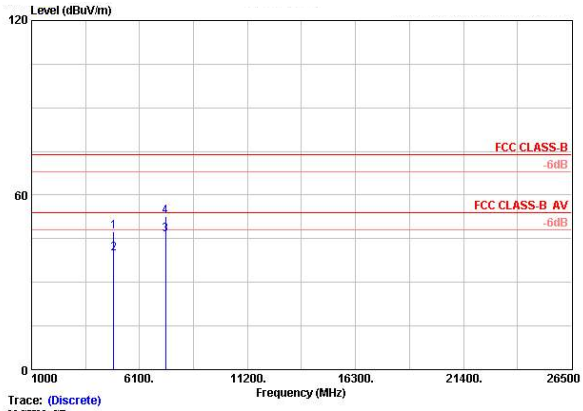
Figure-12 TX harmonic of 2402 MHz (Vertical)



Trace: (Discrete)
Site : 03CH01-CB
Condition : FCC CLASS-B 3m 18GHORN ANT:20070301 HORIZONTAL 0cm 0deg
eut : ARF2496K
power : 0
Temp. : 24.3 'C
Relative Humidity : 56%
memo :

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1	4887.828	48.20	-25.80	74.00	46.54	33.51	3.38	35.25	PEAK	180	298	HORIZONTAL
2	4887.908	40.95	-13.05	54.00	39.30	33.51	3.38	35.25	AVERAGE	180	298	HORIZONTAL
3	7331.828	47.20	-6.80	54.00	42.40	36.52	4.04	35.77	AVERAGE	164	257	HORIZONTAL
4	7332.112	50.97	-23.03	74.00	46.17	36.52	4.04	35.77	PEAK	164	257	HORIZONTAL

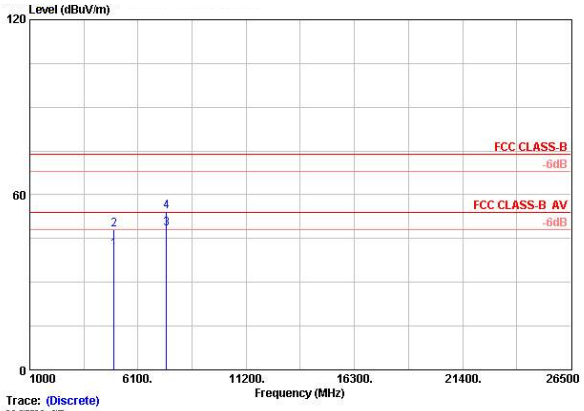
Figure-13 TX harmonic of 2444 MHz (Horizontal)



Trace: (Discrete)
Site : 03CH01-CB
Condition : FCC CLASS-B 3m 18GHORN ANT:20070301 VERTICAL 0cm 0deg
eut : ARF2496K
power : 0
Temp. : 24.3 'C
Relative Humidity : 56%
memo :

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1	4887.820	47.37	-26.63	74.00	45.72	33.51	3.38	35.25	PEAK	157	12	VERTICAL
2	4887.872	39.89	-14.11	54.00	38.24	33.51	3.38	35.25	AVERAGE	157	12	VERTICAL
3	7331.828	46.42	-7.58	54.00	41.62	36.52	4.04	35.77	AVERAGE	197	108	VERTICAL
4	7331.856	52.66	-21.34	74.00	47.86	36.52	4.04	35.77	PEAK	197	108	VERTICAL

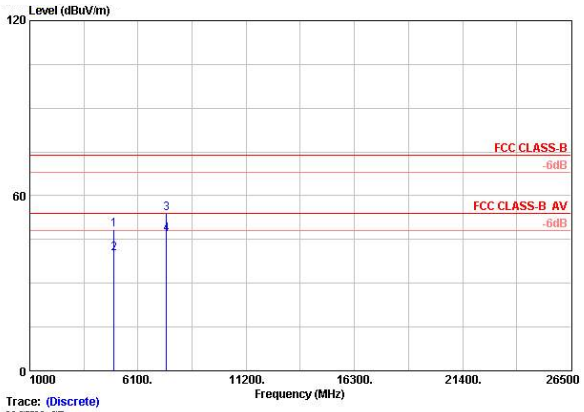
Figure-14 TX harmonic of 2444 MHz (Vertical)



Trace: (Discrete)
Site : 03CH01-CB
Condition : FCC CLASS-B 3m 18GHORN ANT:20070301 HORIZONTAL 0cm 0deg
eut : ARF2496K
power : 0
Temp. : 24.3 'C
Relative Humidity : 56%
memo :

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1	4965.912	41.15	-12.85	54.00	39.34	33.64	3.41	35.24	AVERAGE	197	346	HORIZONTAL
2	4966.130	48.16	-25.84	74.00	46.35	33.64	3.41	35.24	PEAK	197	346	HORIZONTAL
3 !	7448.832	48.23	-5.77	54.00	43.14	36.72	4.08	35.71	AVERAGE	149	264	HORIZONTAL
4	7449.100	54.20	-19.80	74.00	49.11	36.72	4.08	35.71	PEAK	149	264	HORIZONTAL

Figure-15 TX harmonic of 2483 MHz (Horizontal)

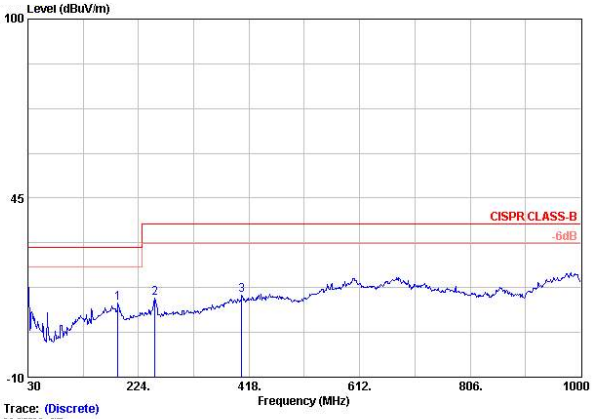


Trace: (Discrete)
Site : 03CH01-CB
Condition : FCC CLASS-B 3m 18GHORN ANT:20070301 VERTICAL 0cm 0deg
eut : ARF2496K
power : 0
Temp. : 24.3 'C
Relative Humidity : 56%
memo :

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1	4965.838	48.50	-25.50	74.00	46.69	33.64	3.41	35.24	PEAK	100	272	VERTICAL
2	4965.892	40.07	-13.93	54.00	38.26	33.64	3.41	35.24	AVERAGE	100	272	VERTICAL
3	7448.636	53.93	-20.07	74.00	48.84	36.72	4.08	35.71	PEAK	102	161	VERTICAL
4	7448.832	46.60	-7.40	54.00	41.52	36.72	4.08	35.71	AVERAGE	102	161	VERTICAL

Figure-16 TX harmonic of 2483 MHz (Vertical)

FCC Test Result at RX Mode (Below 1GHz)

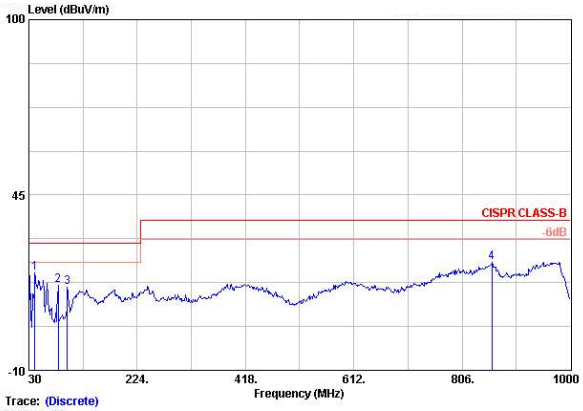


Trace: (Discrete)

Site : 03CH01-CB
Condition : CISPR CLASS-B 10m BILOG ANT20070726 HORIZONTAL 100cm 0deg
eut : ARF2496K
power : 0
Temp. : 24.3 'C
Relative Humidity : 56%
memo : RX < 1G

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1	188.110	12.78	-17.22	30.00	25.89	11.50	0.79	25.40	Peak	100	0	HORIZONTAL
2	253.100	14.27	-22.73	37.00	25.71	12.80	1.15	25.39	Peak	100	0	HORIZONTAL
3	405.390	15.04	-21.96	37.00	22.88	16.15	1.59	25.59	Peak	100	0	HORIZONTAL

Figure-17 Receiver Radiated Emission - 30 MHz ~ 1 GHz (Horizontal)



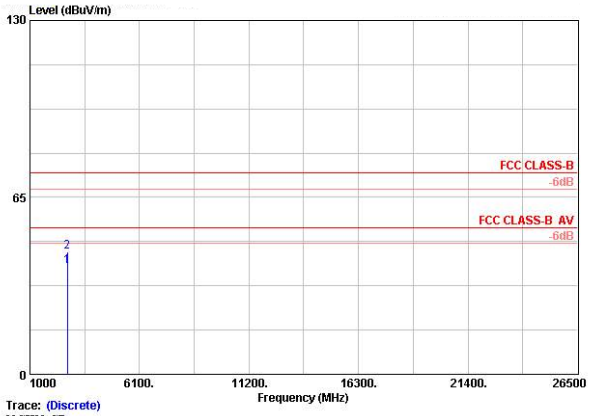
Trace: (Discrete)

Site : 03CH01-CB
Condition : CISPR CLASS-B 10m BILOG ANT20070726 VERTICAL 200cm 0deg
eut : ARF2496K
power : 0
Temp. : 24.3 'C
Relative Humidity : 56%
memo : RX < 1G

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1 @	40.670	20.58	-9.42	30.00	34.00	12.55	0.61	26.58	Peak	200	0	VERTICAL
2	82.380	16.73	-13.27	30.00	35.00	7.53	0.39	26.18	Peak	200	0	VERTICAL
3	98.870	15.99	-14.01	30.00	30.80	10.79	0.36	25.96	Peak	200	0	VERTICAL
4	859.350	24.00	-13.00	37.00	26.12	20.22	2.56	24.90	Peak	200	0	VERTICAL

Figure-18 Receiver Radiated Emission - 30 MHz ~ 1 GHz (Vertical)

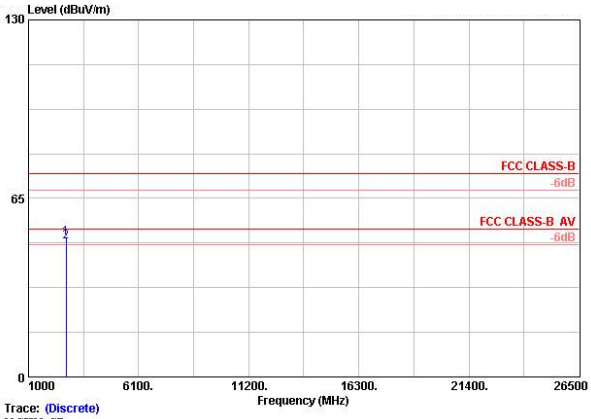
FCC Test Result at RX Mode (Above 1GHz)



Trace: (Discrete)
Site : 03CH01-CB
Condition : FCC CLASS-B 3m 18GHORN ANT:20070301 HORIZONTAL 0cm 0deg
eut : ARF2496K
power : 0
Temp. : 24.3 'C
Relative Humidity : 56%
memo : RX > 1G @ 2739 MHz

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1	2739.358	39.84	-14.16	54.00	43.12	29.05	2.75	35.09	AVERAGE	100	240	HORIZONTAL
2	2739.618	44.85	-29.15	74.00	48.14	29.05	2.75	35.09	PEAK	100	240	HORIZONTAL

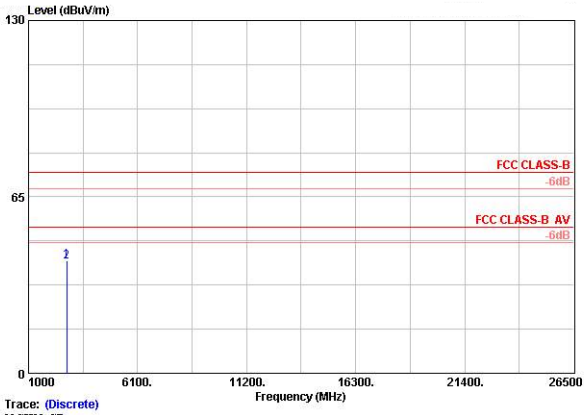
Figure-19 RX_LO of 2739 MHz (Horizontal)



Trace: (Discrete)
Site : 03CH01-CB
Condition : FCC CLASS-B 3m 18GHORN ANT:20070301 VERTICAL 0cm 0deg
eut : ARF2496K
power : 0
Temp. : 24.3 'C
Relative Humidity : 56%
memo : RX > 1G @ 2739 MHz

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1	2739.376	50.57	-23.43	74.00	53.85	29.05	2.75	35.09	PEAK	100	32	VERTICAL
2 @	2739.388	49.37	-4.63	54.00	52.66	29.05	2.75	35.09	AVERAGE	100	32	VERTICAL

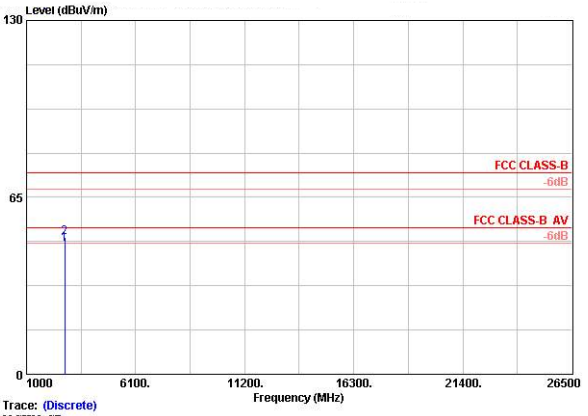
Figure-20 RX_LO of 2739 MHz (Vertical)



Trace: (Discrete)
Site : 03CH01-CB
Condition : FCC CLASS-B 3m 18GHORN ANT:20070301 HORIZONTAL 0cm 0deg
eut : ARF2496K
power : 0
Temp. : 24.3 'C
Relative Humidity : 56%
memo : RX > 1G @ 2787 MHz

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1	2787.360	41.41	-32.59	74.00	44.48	29.21	2.82	35.10	PEAK	109	119	HORIZONTAL
2	2787.370	40.92	-13.08	54.00	43.99	29.21	2.82	35.10	AVERAGE	109	119	HORIZONTAL

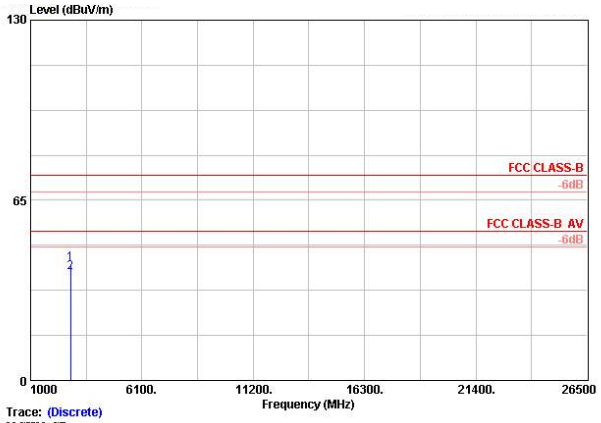
Figure-21 RX_LO of 2787 MHz (Horizontal)



Trace: (Discrete)
Site : 03CH01-CB
Condition : FCC CLASS-B 3m 18GHORN ANT:20070301 VERTICAL 0cm 0deg
eut : ARF2496K
power : 0
Temp. : 24.3 'C
Relative Humidity : 56%
memo : RX > 1G @ 2787 MHz

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1	2787.386	47.87	-6.13	54.00	50.95	29.21	2.82	35.10	AVERAGE	114	148	VERTICAL
2	2787.386	50.28	-23.72	74.00	53.35	29.21	2.82	35.10	PEAK	114	148	VERTICAL

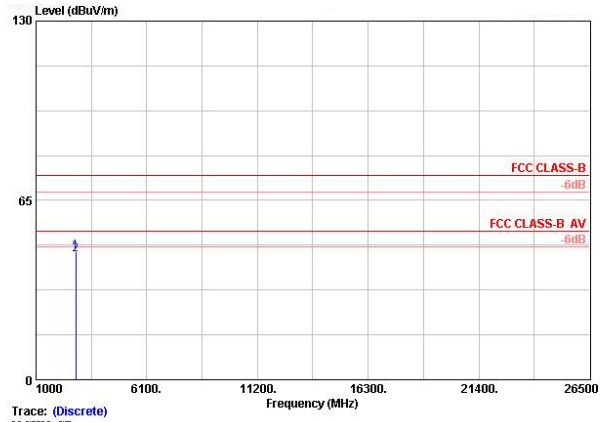
Figure-22 RX_LO of 2787 MHz (Vertical)



Trace: (Discrete)
Site : 03CH01-CB
Condition : FCC CLASS-B 3m 18GHORN ANT:20070301 HORIZONTAL 0cm 0deg
eut : ARF2496K
power : 0
Temp. : 24.3 'C
Relative Humidity : 56%
memo : RX > 1G @ 2832 MHz

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1	2831.872	42.18	-31.82	74.00	45.03	29.37	2.90	35.12	PEAK	100	76	HORIZONTAL
2	2831.948	38.95	-15.05	54.00	41.81	29.37	2.90	35.12	AVERAGE	100	76	HORIZONTAL

Figure-23 RX_LO of 2832 MHz (Horizontal)



Trace: (Discrete)
Site : 03CH01-CB
Condition : FCC CLASS-B 3m 18GHORN ANT:20070301 VERTICAL 0cm 0deg
eut : ARF2496K
power : 0
Temp. : 24.3 'C
Relative Humidity : 56%
memo : RX > 1G @ 2832 MHz

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1	2831.824	46.58	-27.42	74.00	49.43	29.37	2.90	35.12	PEAK	100	98	VERTICAL
2	2831.952	45.49	-8.51	54.00	48.35	29.37	2.90	35.12	AVERAGE	100	98	VERTICAL

Figure-24 RX_LO of 2832 MHz (Vertical)

ETSI Test Information

Test Condition

Here lists the test conditions of the ETSI test at TX/RX mode.

Followed Requirement: ETSI EN 300 328 V1.6.1

Test Chamber: Fully Anechoic Chamber

Measurement Mode: RF antenna radiation test

Operation Mode of ARF2496K: direct mode

Operation Frequency: 2.402GHz, 2.444GHz, 2.483GHz

Output Power: 0 dBm

Test Item

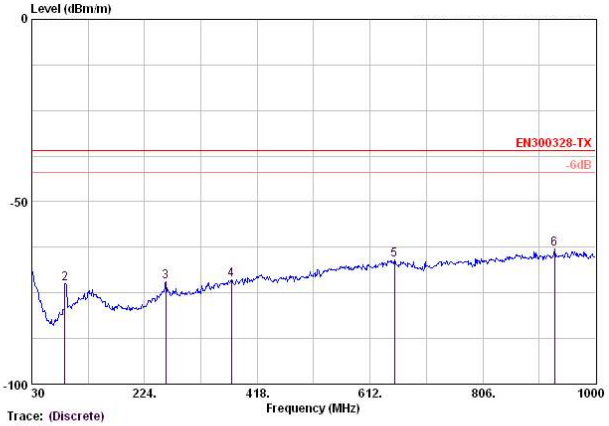
Transmitter radiated emissions test : Below 1 GHz , above 1 GHz

Receiver radiated emissions test : Below 1 GHz , above 1 GHz

Summary of the test results

Applied Standard : ETSI EN 300 328 V1.6.1			
Rule Section	**Description of Test**	**Result**	**Under Limit**
EN 300 328	Transmitter of 30 MHz to 1 GHz	Complies	27 dB
EN 300 328	Transmitter above 1 GHz	Complies	21.7 dB
EN 300 328	Receiver of 30 MHz to 1 GHz	Complies	6 dB
EN 300 328	Receiver above 1 GHz	Complies	3.6 dB

ETSI Test Result at TX Mode (Below 1GHz)

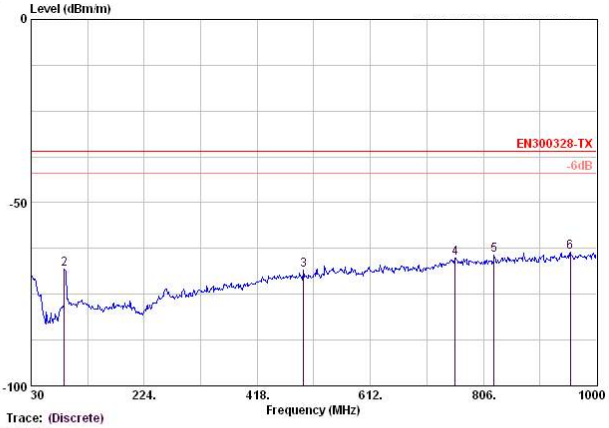


Trace: (Discrete)

Site : 05CH01-CB
Condition : EN300328-TX 3m LF-EIRP2008-01-26 HORIZONTAL
eut : ARF008
power :
memo : TX < 1G

	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm/m	dB	dBm	dB		
1	30.000	-69.05	-36.00	-33.05	-80.35	11.30	Peak	HORIZONTAL
2	87.230	-72.41	-36.00	-36.41	-72.51	0.11	Peak	HORIZONTAL
3	260.860	-71.90	-36.00	-35.90	-77.71	5.81	Peak	HORIZONTAL
4	373.380	-71.36	-36.00	-35.36	-78.86	7.50	Peak	HORIZONTAL
5	653.710	-66.03	-36.00	-30.03	-79.21	13.17	Peak	HORIZONTAL
6	929.190	-63.04	-36.00	-27.04	-78.44	15.41	Peak	HORIZONTAL

Figure-25 Transmitter Radiated Emission - 30 MHz ~ 1 GHz (Horizontal)



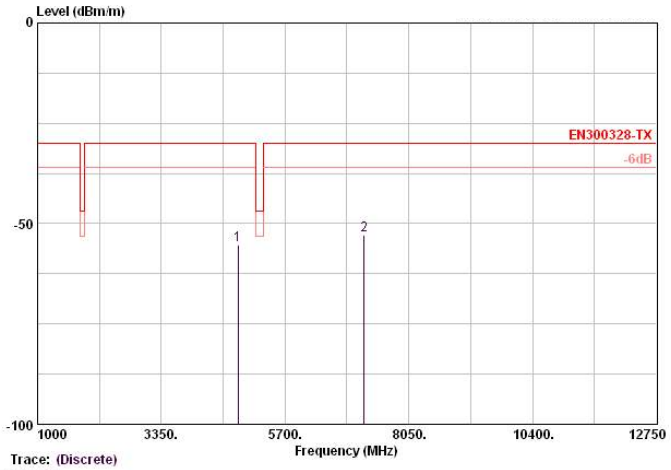
Trace: (Discrete)

Site : 05CH01-CB
Condition : EN300328-TX 3m LF-EIRP2008-01-26 VERTICAL
eut : ARF008
power :
memo : TX < 1G

	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm/m	dB	dBm	dB		
1	30.000	-69.81	-36.00	-33.81	-79.85	10.04	Peak	VERTICAL
2	87.230	-68.14	-36.00	-32.14	-69.70	1.56	Peak	VERTICAL
3	497.540	-68.45	-36.00	-32.45	-78.21	9.76	Peak	VERTICAL
4	757.500	-65.17	-36.00	-29.17	-79.38	14.21	Peak	VERTICAL
5	824.430	-64.21	-36.00	-28.21	-78.39	14.18	Peak	VERTICAL
6	955.380	-63.54	-36.00	-27.54	-79.07	15.53	Peak	VERTICAL

Figure-26 Transmitter Radiated Emission - 30 MHz ~ 1 GHz (Vertical)

ETSI Test Result at TX Mode (Above 1GHz)

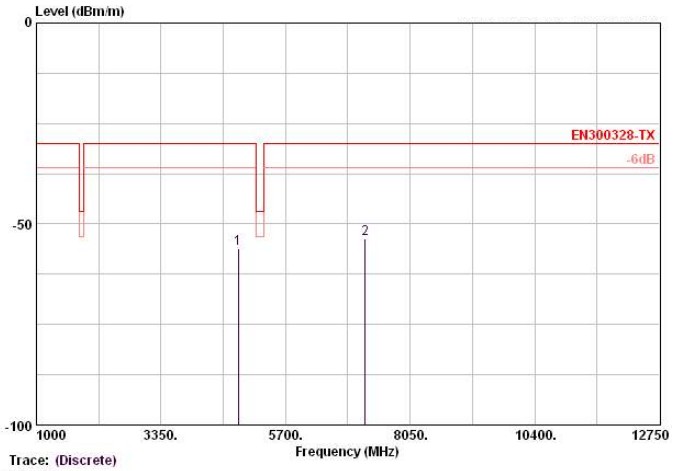


Trace: (Discrete)

Site : 05CH01-CB
Condition : EN300328-TX 3m HF-EIRP1-18G20071109 HORIZONTAL
eut : ARF008
power :
memo : TX_2402 MHz > 1G

	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm/m	dB	dBm	dB		
1	4803.900	-55.31	-30.00	-25.31	-65.42	10.11	PEAK	HORIZONTAL
2	7205.848	-52.89	-30.00	-22.89	-67.30	14.41	PEAK	HORIZONTAL

Figure-27 TX harmonic of 2402 MHz (Horizontal)

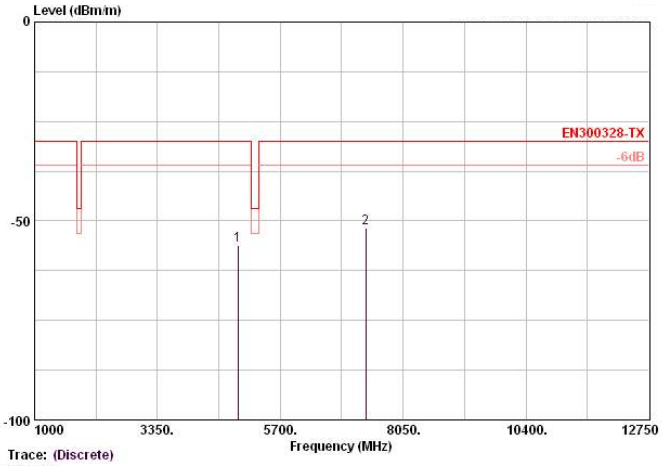


Trace: (Discrete)

Site : 05CH01-CB
Condition : EN300328-TX 3m HF-EIRP1-18G20071109 VERTICAL
eut : ARF008
power :
memo : TX_2402 MHz > 1G

	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm/m	dB	dBm	dB		
1	4803.885	-56.07	-30.00	-26.07	-66.51	10.44	PEAK	VERTICAL
2	7205.846	-53.64	-30.00	-23.64	-68.65	15.00	PEAK	VERTICAL

Figure-28 TX harmonic of 2402 MHz (Vertical)

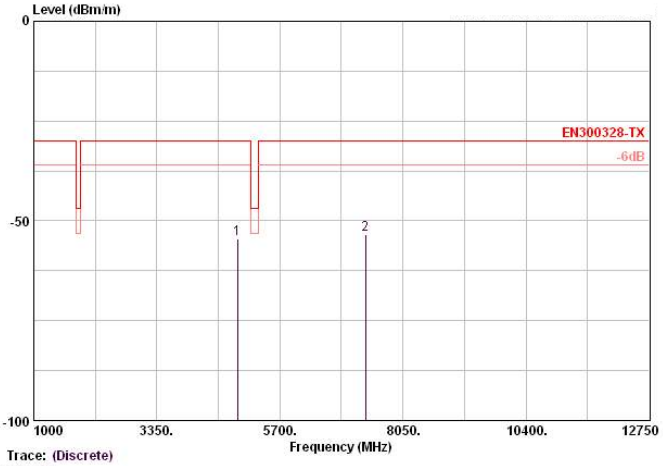


Trace: (Discrete)

Site : 05CH01-CB
Condition : EN300328-TX 3m HF-EIRP1-18G20071109 HORIZONTAL
eut : ARF008
power :
memo : TX_2444 MHz > 1G

	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm/m	dB	dBm	dB		
1	4887.876	-56.00	-30.00	-26.00	-66.35	10.35	PEAK	HORIZONTAL
2	7331.852	-51.70	-30.00	-21.70	-66.32	14.62	PEAK	HORIZONTAL

Figure-29 TX harmonic of 2444 MHz (Horizontal)

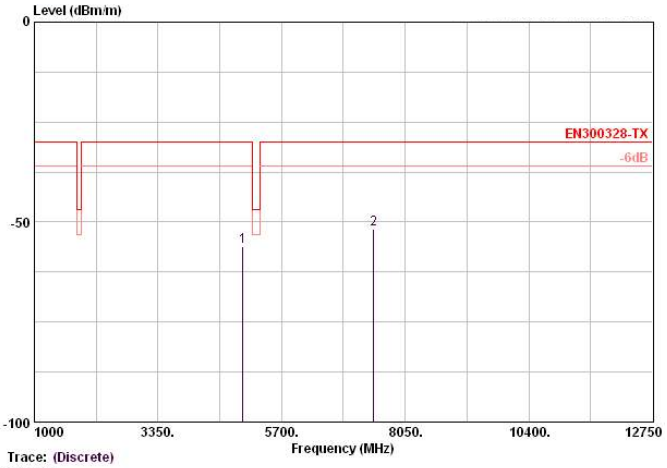


Trace: (Discrete)

Site : 05CH01-CB
Condition : EN300328-TX 3m HF-EIRP1-18G20071109 VERTICAL
eut : ARF008
power :
memo : TX_2444 MHz > 1G

	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm/m	dB	dBm	dB		
1	4887.903	-54.38	-30.00	-24.38	-65.03	10.64	PEAK	VERTICAL
2	7331.842	-53.49	-30.00	-23.49	-68.56	15.07	PEAK	VERTICAL

Figure-30 TX harmonic of 2444 MHz (Vertical)

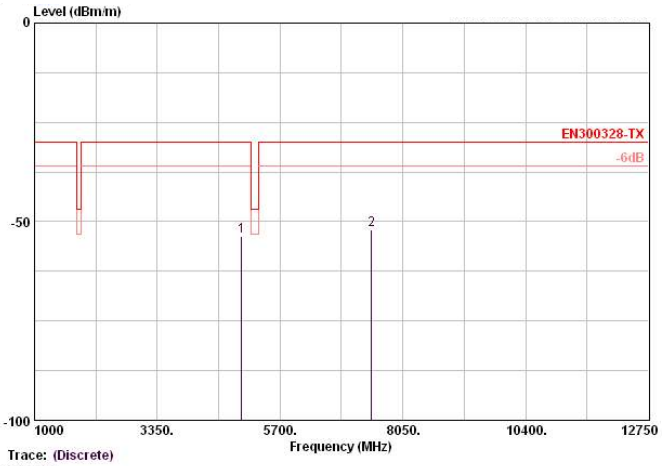


Trace: (Discrete)

Site : 05CH01-CB
Condition : EN300328-TX 3m HF-EIRP1-18G20071109 HORIZONTAL
eut : ARF008
power :
memo : TX_2483 MHz > 1G

	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm/m	dB	dBm	dB		
1	4965.890	-56.11	-30.00	-26.11	-66.63	10.52	PEAK	HORIZONTAL
2	7448.847	-51.76	-30.00	-21.76	-66.60	14.84	PEAK	HORIZONTAL

Figure-31 TX harmonic of 2483 MHz (Horizontal)



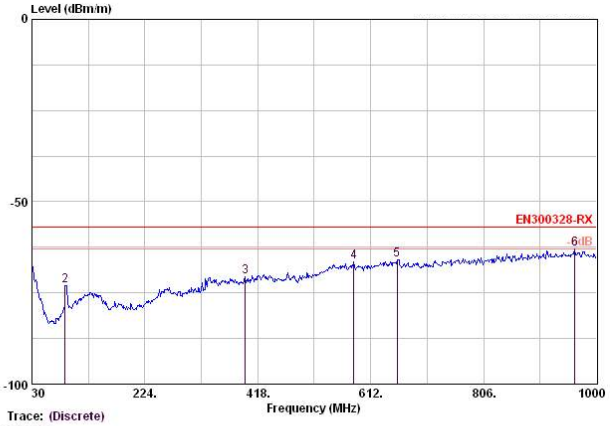
Trace: (Discrete)

Site : 05CH01-CB
Condition : EN300328-TX 3m HF-EIRP1-18G20071109 VERTICAL
eut : ARF008
power :
memo : TX_2483 MHz > 1G

	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm/m	dB	dBm	dB		
1	4965.889	-53.73	-30.00	-23.73	-64.52	10.79	PEAK	VERTICAL
2	7448.848	-52.12	-30.00	-22.12	-67.25	15.13	PEAK	VERTICAL

Figure-32 TX harmonic of 2483 MHz (Vertical)

ETSI Test Result at RX Mode (Below 1GHz)

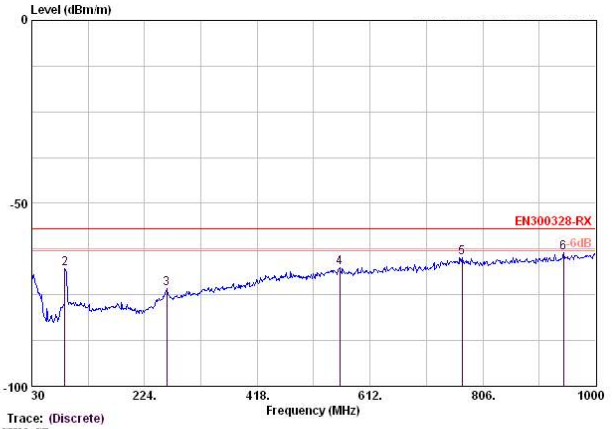


Trace: (Discrete)

Site : 05CH01-CB
Condition : EN300328-RX 3m LF-EIRP2008-01-26 HORIZONTAL
eut : ARF008
power :
memo : RX < 1G

	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm/m	dB	dBm	dB		
1	30.000	-67.56	-57.00	-10.56	-78.86	11.30	Peak	HORIZONTAL
2	87.230	-72.90	-57.00	-15.90	-73.00	0.11	Peak	HORIZONTAL
3	396.660	-70.58	-57.00	-13.58	-78.65	8.07	Peak	HORIZONTAL
4	582.900	-66.62	-57.00	-9.62	-78.45	11.83	Peak	HORIZONTAL
5	657.590	-65.99	-57.00	-8.99	-79.08	13.08	Peak	HORIZONTAL
6	963.140	-63.02	-57.00	-6.02	-78.52	15.50	Peak	HORIZONTAL

Figure-33 Receiver Radiated Emission - 30 MHz ~ 1 GHz (Horizontal)



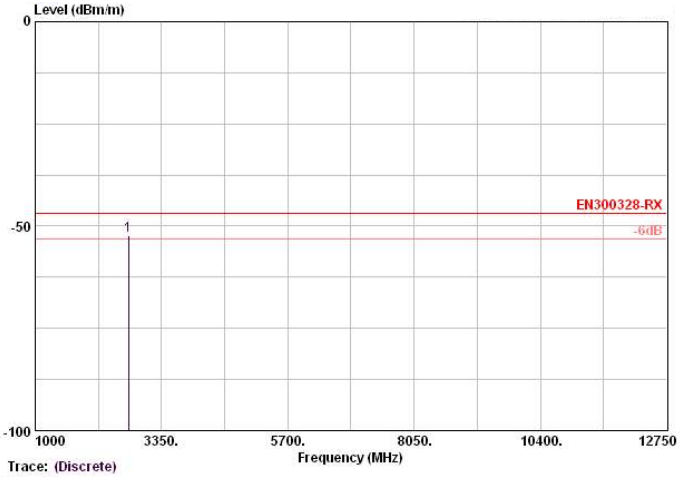
Trace: (Discrete)

Site : 05CH01-CB
Condition : EN300328-RX 3m LF-EIRP2008-01-26 VERTICAL
eut : ARF008
power :
memo : RX < 1G

	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm/m	dB	dBm	dB		
1	30.000	-69.20	-57.00	-12.20	-79.24	10.04	Peak	VERTICAL
2	87.230	-67.90	-57.00	-10.90	-69.46	1.56	Peak	VERTICAL
3	261.830	-73.41	-57.00	-16.41	-78.68	5.27	Peak	VERTICAL
4	559.620	-67.65	-57.00	-10.65	-79.08	11.42	Peak	VERTICAL
5	770.110	-64.74	-57.00	-7.74	-78.88	14.14	Peak	VERTICAL
6	944.710	-63.51	-57.00	-6.51	-78.90	15.39	Peak	VERTICAL

Figure-34 Receiver Radiated Emission - 30 MHz ~ 1 GHz (Vertical)

ETSI Test Result at RX Mode (Above 1GHz)

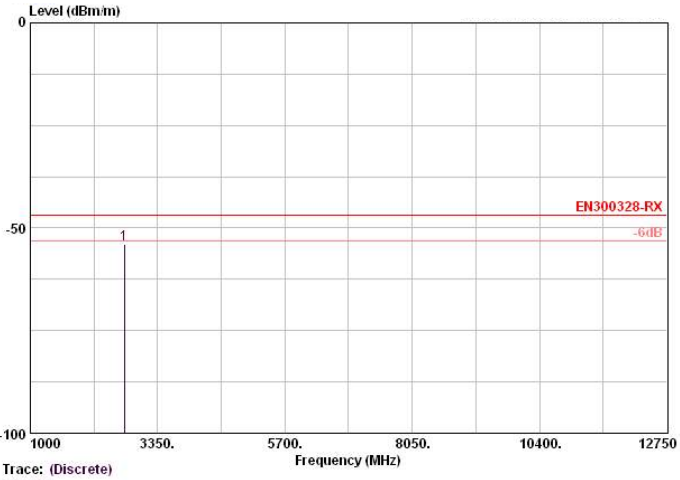


Trace: (Discrete)

Site : 05CH01-CB
Condition : EN300328-RX 3m HF-EIRP1-18G20071109 HORIZONTAL
eut : ARF008
power :
memo : RX 2739 > 1G

	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm/m	dB	dBm	dB		
1 !	2739.386	-52.29	-47.00	-5.29	-58.94	6.65		HORIZONTAL

Figure-35 RX_LO of 2739 MHz (Horizontal)

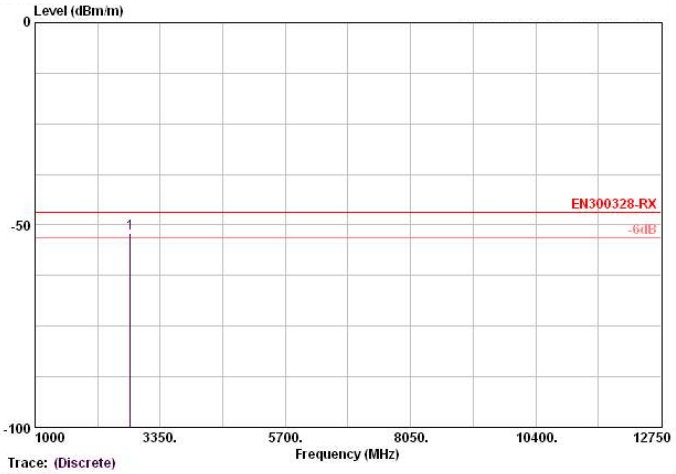


Trace: (Discrete)

Site : 05CH01-CB
Condition : EN300328-RX 3m HF-EIRP1-18G20071109 VERTICAL
eut : ARF008
power :
memo : RX 2739 > 1G

	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm/m	dB	dBm	dB		
1	2739.370	-53.82	-47.00	-6.82	-60.54	6.72		VERTICAL

Figure-36 RX_LO of 2739 MHz (Vertical)

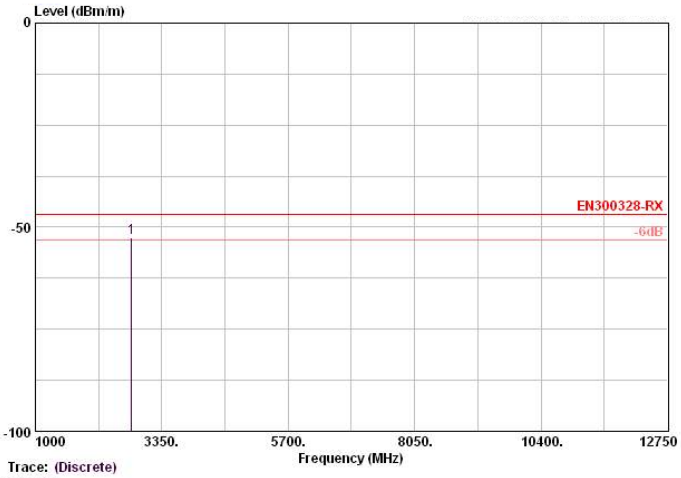


Trace: (Discrete)

Site : 05CH01-CB
Condition : EN300328-RX 3m HF-EIRP1-18G20071109 HORIZONTAL
eut : ARF008
power :
memo : RX 2787 > 1G

	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm/m	dB	dBm	dB		
1 !	2787.383	-52.06	-47.00	-5.06	-58.69	6.63		HORIZONTAL

Figure-37 RX_LO of 2787 MHz (Horizontal)

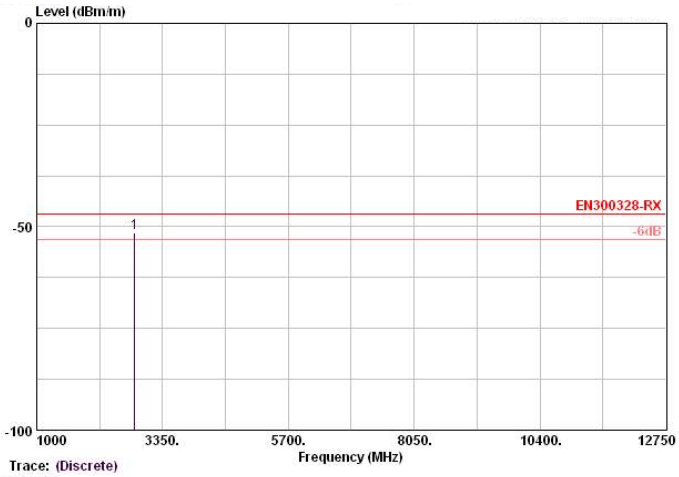


Trace: (Discrete)

Site : 05CH01-CB
Condition : EN300328-RX 3m HF-EIRP1-18G20071109 VERTICAL
eut : ARF008
power :
memo : RX 2787 > 1G

	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm/m	dB	dBm	dB		
1 !	2787.391	-52.47	-47.00	-5.47	-59.13	6.67		VERTICAL

Figure-38 RX_LO of 2787 MHz (Vertical)

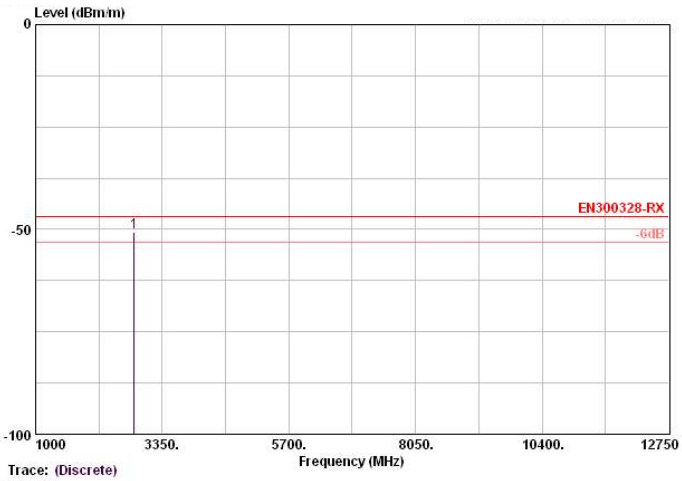


Trace: (Discrete)

Site : 05CH01-CB
Condition : EN300328-RX 3m HF-EIRP1-18G20071109 HORIZONTAL
eut : ARF008
power :
memo : RX 2832 > 1G

	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm/m	dB	dBm	dB		
1 !	2831.939	-51.48	-47.00	-4.48	-58.08	6.60		HORIZONTAL

Figure-39 RX_LO of 2832 MHz (Horizontal)



Trace: (Discrete)

Site : 05CH01-CB
Condition : EN300328-RX 3m HF-EIRP1-18G20071109 VERTICAL
eut : ARF008
power :
memo : RX 2832 > 1G

	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm/m	dB	dBm	dB		
1 !	2831.947	-50.65	-47.00	-3.65	-57.27	6.62		VERTICAL

Figure-40 RX_LO of 2832 MHz (Vertical)

PHOTOGRAPHS OF TEST SET-UP

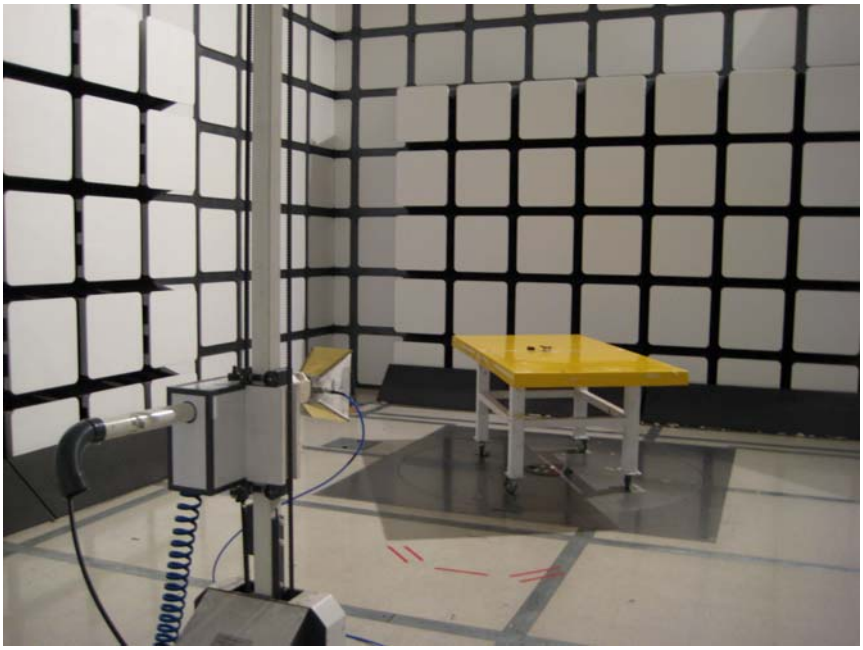


Figure-41 FCC measurement environment

Figure-42 ETSI measurement environment

Revision Information

Version	Modify Information	Updated Date
V1.0	Initial Drift	11/Dec/06’
V1.1	Add FCC test result at transmit mode for 30MHz~1GHz	18/Jan/06’
V1.2	Add FCC test result by RX mode and ETSI test result by TX mode.	19/Jan/07’
V1.3	Replace ARF008_D2 version FCC & ETSI test result	16/Feb/07’
V2.0	Replace ARF008_E version FCC & ETSI test result with 100% duty cycle	7/May/08