TECHNICAL REPORT FOR TYPE ACCEPTANCE

OF SMART COMMUNICATIONS, LTD.

MODEL : SC-580C, SC-581C

FCC ID : O78SC580C

EMI TEST REPORT

Date of test : May 11, 2007

UL Japan, Inc.
YAMAKITA EMC LAB.

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Kanagawa-ken, 258-0124 JAPAN

TECHNICAL DATA – SC- 580 C, SC- 581C Narrow band

A. RF POWER OUTPUT

1. Power measured using test set-up Figure 1.
   Primary power 7.2 VDC at battery input connector.
2. Power Data for 480.000MHz to 512.000MHz @ 4W is presented in Paragraph 1.
3. Power Data for 480.000MHz to 512.000MHz @ 1W is presented in Paragraph 2.

B. FREQUENCY STABILITY

1. a. Frequency stability with varying temperature. See Figure 1 for test set-up.
   b. Data is presented on Paragraph 3 for Standard Primary Input Voltage of 7.2 VDC maintained throughout entire test.
2. a. Frequency stability with Primary Input Voltage. See Figure 1 for test set-up.
   b. Data is presented on Paragraph 4 for Standard Temperature of 25 degrees Celsius maintained throughout entire test.

C. OCCUPIED BANDWIDTH

1. a. A spectrum analyzer was used to determine the occupied bandwidth. See Figure 1 for test set-up.
   b. Data is presented on Paragraph 5 to Paragraph 8 for Standard primary Input Voltage of 7.2 VDC maintained throughout entire test. The carrier and all detectable sidebands were displayed on the spectrum analyzer and pertinent data concerning amplitude and frequency were read from the screen.
   c. un modulated : Data measured at 495.000MHz. (see Paragraph 5)
   d. Input to transmitter audio circuits: 2500Hz sine wave at a level 16dB greater than that necessary to produce 50% modulation. Data measured at 495.000MHz and is typical of all frequencies. (see Paragraph 6)
   e. Input to transmitter audio circuits: 2500Hz sine wave at a level 16dB greater than that necessary to produce 50% modulation with CTCSS(250.3Hz). Data measured at 495.000MHz and is typical of all frequencies. (see Paragraph 7)
   f. Input to transmitter audio circuits: 2500Hz sine wave at a level 16dB greater than that necessary to produce 50% modulation with DCS(023). Data measured at 495.000MHz and is typical of all frequencies. (see Paragraph 8)

D. MODULATION CHARACTERISTICS

1. Modulation Deviation

    a. Measured using test set-up, see Figure 1.

    b. Primary Input Voltage of 7.2 VDC at battery input connector.

    c. Data (Positive peak) is presented in Paragraph 9

    d. Data (Negative peak) is presented in Paragraph 10.

    e. Data (Positive peak) with CTCSS (250.3Hz) is presented in Paragraph 11.

    f. Data (Negative peak) with CTCSS (250.3Hz) is presented in Paragraph 12.

    g. Data (Positive peak) with DCS (023) is presented in Paragraph 13.

    h. Data (Negative peak) with DCS (023) is presented in Paragraph 14.

2. Transmitter Audio Frequency Response

    a. Measured using test set-up, see Figure 1.

    b. Primary Input Voltage of 7.2 VDC at battery input connector.
    Ref = 1 kHz tone response at +-1.5 kHz deviation. Curve was taken maintaining constant +- 1.5 kHz deviation.

    c. Data is presented in Paragraph 15.

3. Low-Pass Filter Response

    a. Measured using test set-up, see Figure 1.

    b. Primary Input Voltage of 7.2 VDC at battery input connector.
    Input 1 kHz tone at a level 20dB greater than that required for 3 kHz deviation The response at 1 kHz tone = 0dB. Curve was taken maintaining constant input at modulation sensitivity. Output of low-pass filter was monitored using Audio Analyzer

    c. Data is presented in Paragraph 16.

E. CONDUCTED SPURIOUS EMISSION

1. Conducted spurious data was measured at 25 degrees Celsius, 7.2 VDC applied at battery input connector external power input and using external antenna jack. See Figure 1 for test set-up.
2. Data for 480.000MHz @ 4W is presented in Paragraph 17.
3. Data for 495.000MHz @ 4W is presented in Paragraph 18.
4. Data for 512.000MHz @ 4W is presented in Paragraph 19.
5. Data for 480.000MHz @ 1W is presented in Paragraph 20.
6. Data for 495.000MHz @ 1W is presented in Paragraph 21.

7. Data for 512.000MHz @ 1W is presented in Paragraph 22.
8. Data for 495.025MHz @ Receiver is presented in Paragraph 23.

F. TRANSIENT BEHAVIOR

a. Measured using test set-up, see Figure 1.

b. Primary Input Voltage of 7.2 VDC at battery input connector.

c. Data is presented in Paragraph 24.

G. RADIATED SPURIOUS EMISSION

1. Radiated spurious data was measured at 20 degrees Celsius, 7.2 VDC applied at battery input and using external antenna jack into a 50 ohm non-radiating load. The substitution method found in TIA/EIA 603 procedure.
2. Data for 480.000MHz @ 4W is presented in Paragraph 25.
3. Data for 495.000MHz @ 4W is presented in Paragraph 26.
4. Data for 512.000MHz @ 4W is presented in Paragraph 27.

H. RADIATED SPURIOUS EMISSION (Receiver)

1. Data for 480.025MHz to 511.9750MHz @ Receiver is presented in Sheet 1.

I. PARAGRAPHS

1. RF Power Output, 4W
2. RF Power Output, 1W
3. Frequency Stability vs. Temperature
4. Frequency Stability vs. Voltage
5. Occupied Bandwidth, un modulated
6. Occupied Bandwidth, 2500Hz Sine Wave
7. Occupied Bandwidth, 2500Hz Sine Wave with CTCSS (250.3Hz)
8. Occupied Bandwidth, 2500Hz Sine Wave with DCS (023)
9. Deviation vs. Audio input Level - Positive peak
10. Deviation vs. Audio input Level - Negative peak
11. Deviation vs. Audio input Level with CTCSS (250.3Hz) - Positive peak
12. Deviation vs. Audio input Level with CTCSS (250.3Hz) - Negative peak
13. Deviation vs. Audio input Level with DCS (023) - Positive peak
14. Deviation vs. Audio input Level with DCS (023) -Negative peak
15. Transmitter Audio Frequency Response
16. Audio Low-Pass Filter Response
17. Conducted Spurious Emissions, 480.000MHz @ 4W
18. Conducted Spurious Emissions, 495.000MHz @ 4W
19. Conducted Spurious Emissions, 512.000MHz @ 4W
20. Conducted Spurious Emissions, 480.000MHz @ 1W
21. Conducted Spurious Emissions, 495.000MHz @ 1W
22. Conducted Spurious Emissions, 512.000MHz @ 1W
23. Conducted Spurious Emissions, Receiver

24 Transient Behavior

25. Radiated Spurious Emissions, 480.000MHz @ 4W
26. Radiated Spurious Emissions, 495.000MHz @ 4W
27. Radiated Spurious Emissions, 512.000MHz @ 4W

Sheet 1. Radiated Spurious Emissions, Receiver

I. FIGURE

1. Test Set-up

TECHNICAL DATA

Model Name			**: SC-580C, SC-581C**		
Sample Number			**: Sample4**		
Specification is Referenced			**: EIA/TIA-603C**		
Emission Type			**: 11K0F3E**		
Channel Spacing			**: 12.5**		**(kHz)**
Description			**: Handheld**		
Mode			**: FM**		
Frequency Range		**TX**	**: 480.000 - 512.000**		**(MHz)**
		RX	**: 480.000 - 512.000**		**(MHz)**
Test Voltage	**Normal**		**: 7.2**		**(V)**
	Extreme		**: 6.12**	**(7.2-15%)**	**(V)**
			: 8.28	**(7.2+15%)**	**(V)**
Temperature	**Normal**		**: 25**		**(°C)**
	Extreme		**: -30 - +60**		**(°C)**
Test Frequency		**TX**	**: 480.000**		**(MHz)**
		RX	**: 480.025**		**(MHz)**
		TX	**: 495.000**		**(MHz)**
		RX	**: 495.025**		**(MHz)**
		TX	**: 512.000**		**(MHz)**
		RX	**: 511.975**		**(MHz)**
1st IF		**RX**	**: -44.95**		**(MHz)**
2nd IF		**RX**	**: 455**		**(kHz)**
Microphone Impedance			**: 2000**		**(Ω)**
Speaker Impedance			**: 8**		**(Ω)**
Rated RF Power		**HIGH**	**: 4**		**(W)**
		LOW	**: 1**		**(W)**
Test Operator			**: K.Atsuta**		
Test Date		**Start**	**: 2007/5/1**		
		Finish	**: 2007/5/17**		

Carrier Frequency Stability - Temperature Variation

SAMPLE4 495.000

Temperature[℃]	Measured	Frequency error[Hz]	ppm	Upper Limit	Lower Limit
-30	495.00086	860	1.85	2.50	-2.50
-20	495.00070	700	1.51	2.50	-2.50
-10	495.00038	380	0.82	2.50	-2.50
0	494.99995	-50	-0.11	2.50	-2.50
10	494.99994	-60	-0.13	2.50	-2.50
25	495.00000	0	0.00	2.50	-2.50
40	494.99975	-250	-0.54	2.50	-2.50
50	494.99953	-470	-1.01	2.50	-2.50
60	494.99945	-550	-1.18	2.50	-2.50

Audio Frequency Response

Frequency[Hz]	Measured **SAMPLE4**	**Upper Limit**	**Lower Limit**
100			
250	-17.30		
300	-13.87	**-9.46**	**-17.89**
400	-9.80	**-6.96**	**-12.90**
500	-6.97	**-5.02**	**-9.02**
700	-3.47	**-2.10**	**-6.10**
1000	0.00	**1.00**	**-3.00**
1500	3.77	**4.52**	**0.52**
2000	6.33	**7.02**	**3.02**
2500	7.53	**8.96**	**4.96**
3000	8.40	**10.54**	**4.96**
4000	3.63		

Audio LPF Response

AF[kHz]	Measured **SAMPLE4**	**Limit**
1000	0.00	**0.00**
1500	-0.60	**0.00**
2000	-1.10	**0.00**
2500	-1.80	**0.00**
3000	-3.30	**0.00**
4000	-9.80	**-7.50**
5000	-18.40	**-13.31**
7000	-31.90	**-22.08**
10000	-44.70	**-31.37**
15000	-57.50	**-41.94**
20000		**-50.00**
100000		**-50.00**

Modulation Limiting Carrier

SAMPLE4

INPUT		f=300Hz		f=1000Hz		f=3000Hz		**Limit**
V[mV]	[dB]	Positive Peak	Negative Peak	Positive Peak	Negative Peak	Positive Peak	Negative Peak	
1.5	-20	0.13	0.12	0.22	0.21	0.42	0.41	**2.5**
4.7	-10	0.17	0.16	0.47	0.46	1.13	1.12	**2.5**
7.5	-6	0.21	0.20	0.71	0.70	1.48	1.45	**2.5**
10.6	-3	0.26	0.25	0.98	0.97	1.58	1.55	**2.5**
15.0	0	0.33	0.33	1.35	1.34	1.61	1.60	**2.5**
21.2	3	0.42	0.42	1.87	1.83	1.63	1.62	**2.5**
29.9	6	0.59	0.59	1.94	1.92	1.64	1.63	**2.5**
47.4	10	0.88	0.89	2.03	2.01	1.65	1.63	**2.5**
75.2	14	1.35	1.35	2.05	2.06	1.65	1.63	**2.5**
94.6	16	1.69	1.68	2.08	2.07	1.65	1.63	**2.5**
150.0	20	1.88	1.87	2.14	2.09	1.65	1.63	**2.5**
474.3	30	1.90	2.08	2.16	2.18	1.66	1.65	**2.5**

Modulation Limiting with CTCSS 250.3Hz

SAMPLE4

INPUT		f=300Hz		f=1000Hz		f=3000Hz		**Limit**
V[mV]	[dB]	Positive Peak	Negative Peak	Positive Peak	Negative Peak	Positive Peak	Negative Peak	
1.5	-20	0.46	0.45	0.55	0.53	0.70	0.71	**2.5**
4.7	-10	0.49	0.51	0.80	0.79	1.34	1.35	**2.5**
7.5	-6	0.53	0.54	1.02	0.99	1.67	1.66	**2.5**
10.6	-3	0.57	0.58	1.22	1.22	1.77	1.75	**2.5**
15.0	0	0.64	0.67	1.57	1.57	1.79	1.79	**2.5**
21.2	3	0.74	0.73	1.99	1.97	1.81	1.81	**2.5**
29.9	6	0.88	0.89	2.08	2.06	1.81	1.81	**2.5**
47.4	10	1.14	1.13	2.14	2.14	1.81	1.82	**2.5**
75.2	14	1.56	1.56	2.17	2.18	1.81	1.82	**2.5**
94.6	16	1.84	1.84	2.20	2.21	1.82	1.82	**2.5**
150.0	20	2.02	2.03	2.22	2.21	1.83	1.82	**2.5**
474.3	30	2.04	2.21	2.26	2.30	1.84	1.83	**2.5**

Modulation Limiting with DCS 023

SAMPLE4

INPUT		f=300Hz		f=1000Hz		f=3000Hz		**Limit**
V[mV]	[dB]	Positive Peak	Negative Peak	Positive Peak	Negative Peak	Positive Peak	Negative Peak	
1.5	-20	0.57	0.58	0.66	0.68	0.83	0.85	**2.5**
4.7	-10	0.60	0.65	0.93	0.93	1.48	1.49	**2.5**
7.5	-6	0.63	0.69	1.10	1.13	1.80	1.82	**2.5**
10.6	-3	0.71	0.71	1.34	1.36	1.91	1.88	**2.5**
15.0	0	0.78	0.79	1.64	1.70	1.92	1.93	**2.5**
21.2	3	0.84	0.89	2.11	2.12	1.93	1.95	**2.5**
29.9	6	1.01	0.99	2.21	2.22	1.93	1.95	**2.5**
47.4	10	1.25	1.24	2.26	2.28	1.94	1.95	**2.5**
75.2	14	1.74	1.67	2.29	2.33	1.94	1.96	**2.5**
94.6	16	1.91	1.93	2.30	2.35	1.96	1.96	**2.5**
150.0	20	2.15	2.15	2.35	2.36	1.96	1.97	**2.5**
474.3	30	2.17	2.32	2.37	2.45	1.97	1.98	**2.5**

Model Name	SC-580C, SC-581C
FCC ID	O78SC580C
Serial Number	SAMPLE4
Emission Type	11K0F3E
Channel Spacing	12.5[kHz]

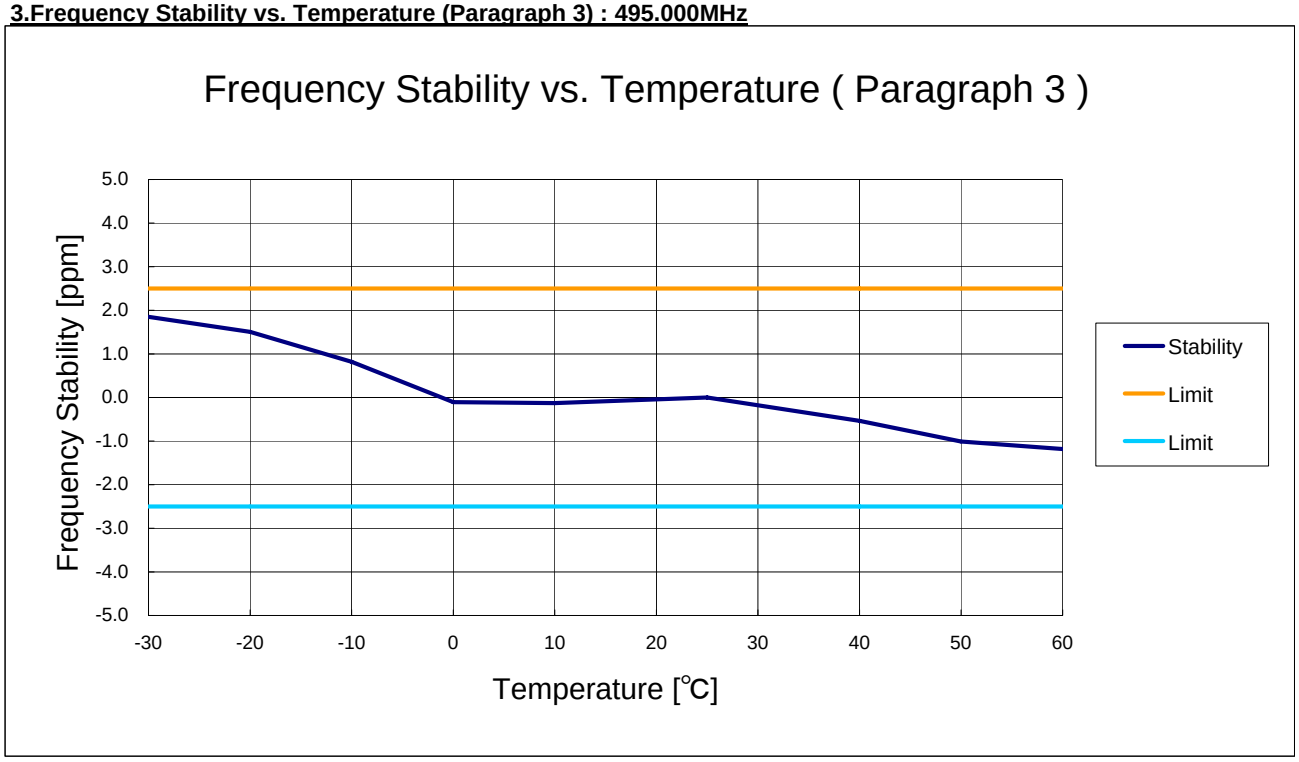
1. RF Power Output @4W (Paragraph 1)

Carrier Frequency [MHz]	RF Power Output [W]	Final D.C. Input Current [A]	D.C. Input Voltage [V]	D.C. Input Power [W]
480.000	4.11	1.76	7.20	12.67
495.000	4.10	1.82	7.20	13.10
512.000	4.13	1.85	7.20	13.32

2. RF Power Output @1W (Paragraph 2)

Carrier Frequency [MHz]	RF Power Output [W]	Final D.C. Input Current [A]	D.C. Input Voltage [V]	D.C. Input Power [W]
480.000	1.02	0.84	7.20	6.05
495.000	1.04	0.87	7.20	6.26
512.000	1.04	0.89	7.20	6.41

3.Frequency Stability vs. Temperature (Paragraph 3) : 495.000MHz

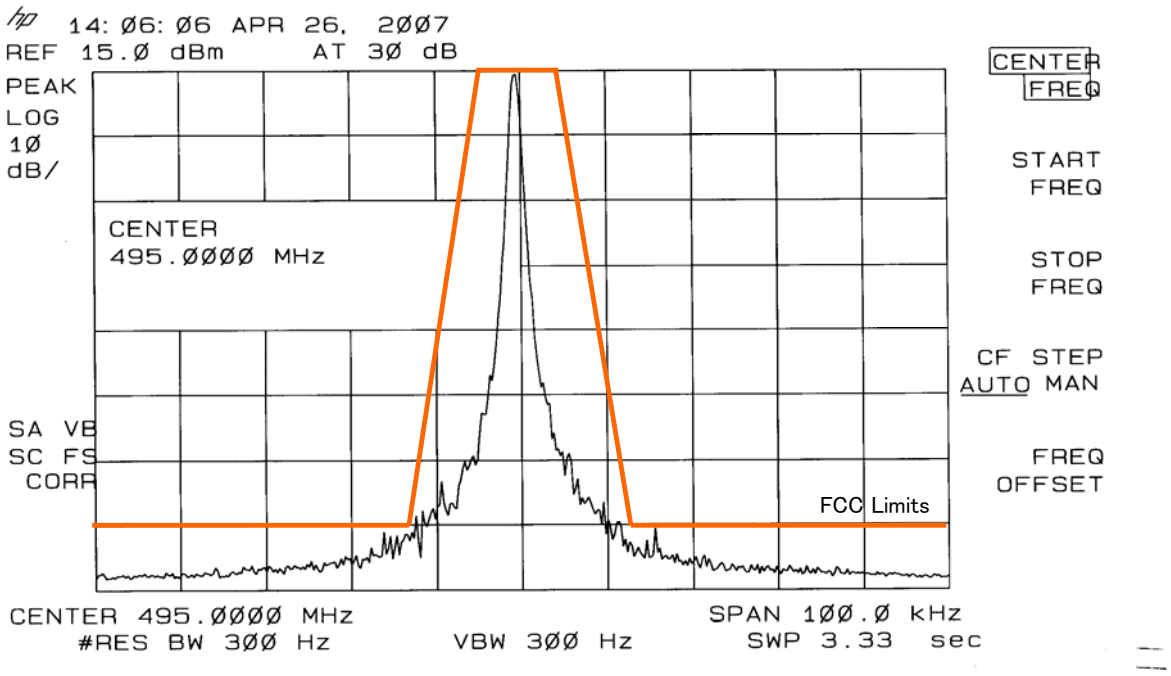


4. Frequency Stability vs. Voltage (Paragraph 4)

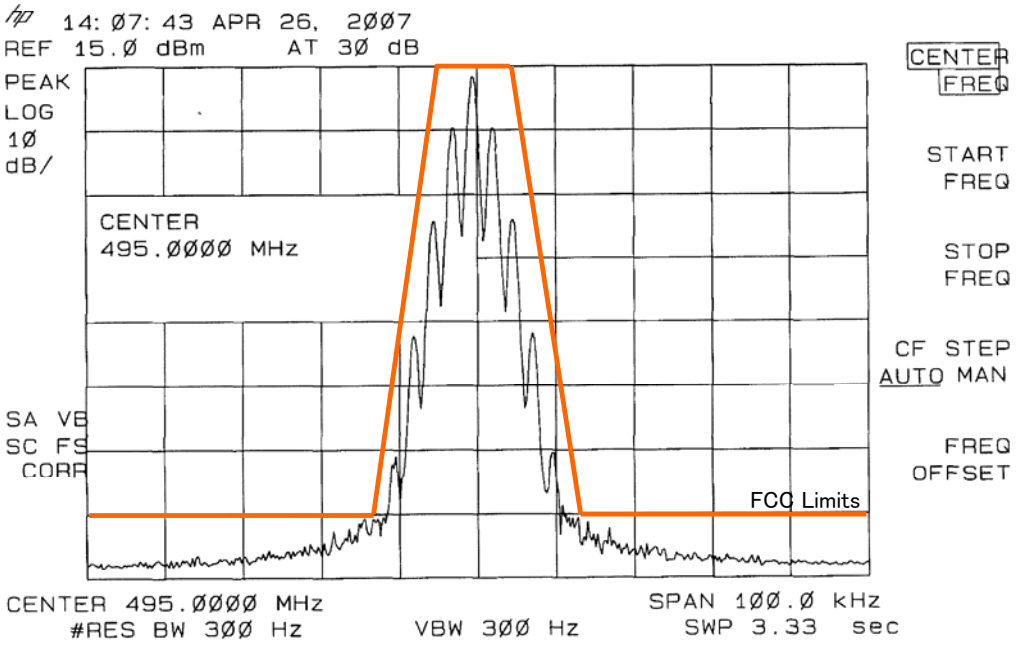
Carrier Frequency [MHz]	STV [%]	Voltage [V]	Change in Frequency		
			[MHz]	[Hz]	[ppm]
495.000	100	7.20	494.99981	-190	-0.38
	85	6.12	494.99981	-190	-0.38
	115	8.28	494.99981	-190	-0.38

Model Name	SC-580C, SC-581C
FCC ID	O78SC580C
Serial Number	SAMPLE4
Emission Type	11K0F3E
Channel Spacing	12.5[kHz]
Frequency	495.000[MHz]

5. Occupied Bandwidth unmodulated (Paragraph 5)

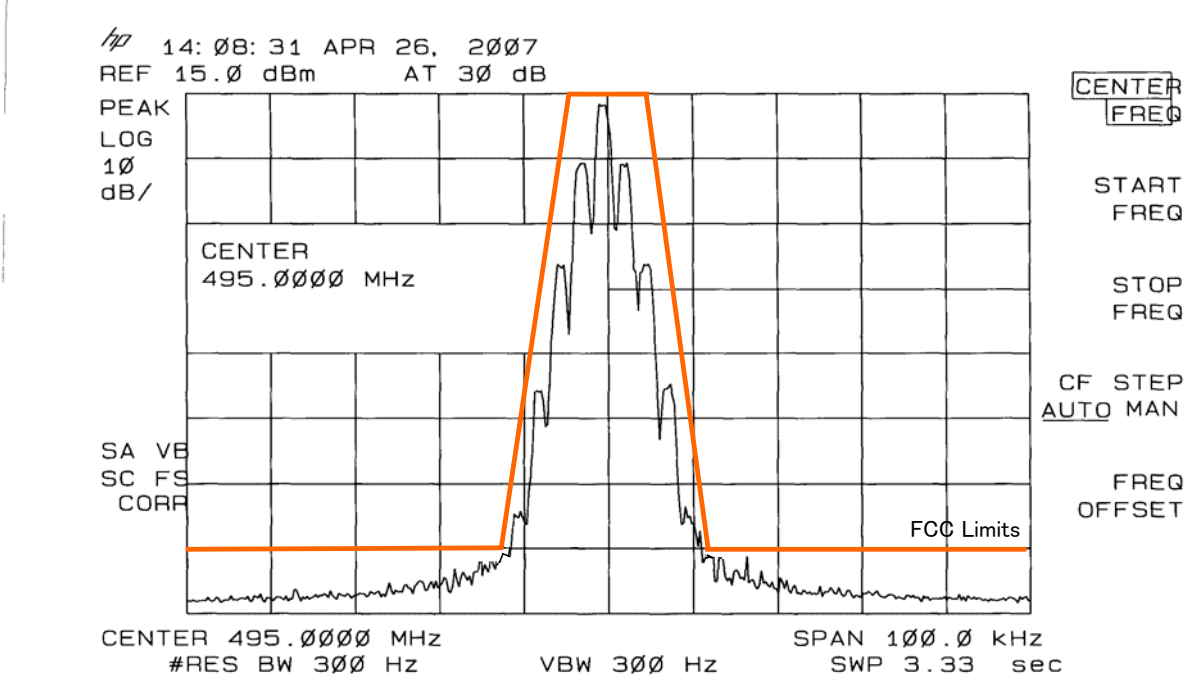


6. Occupied Bandwidth 2500Hz Sine Wave (Paragraph 6)

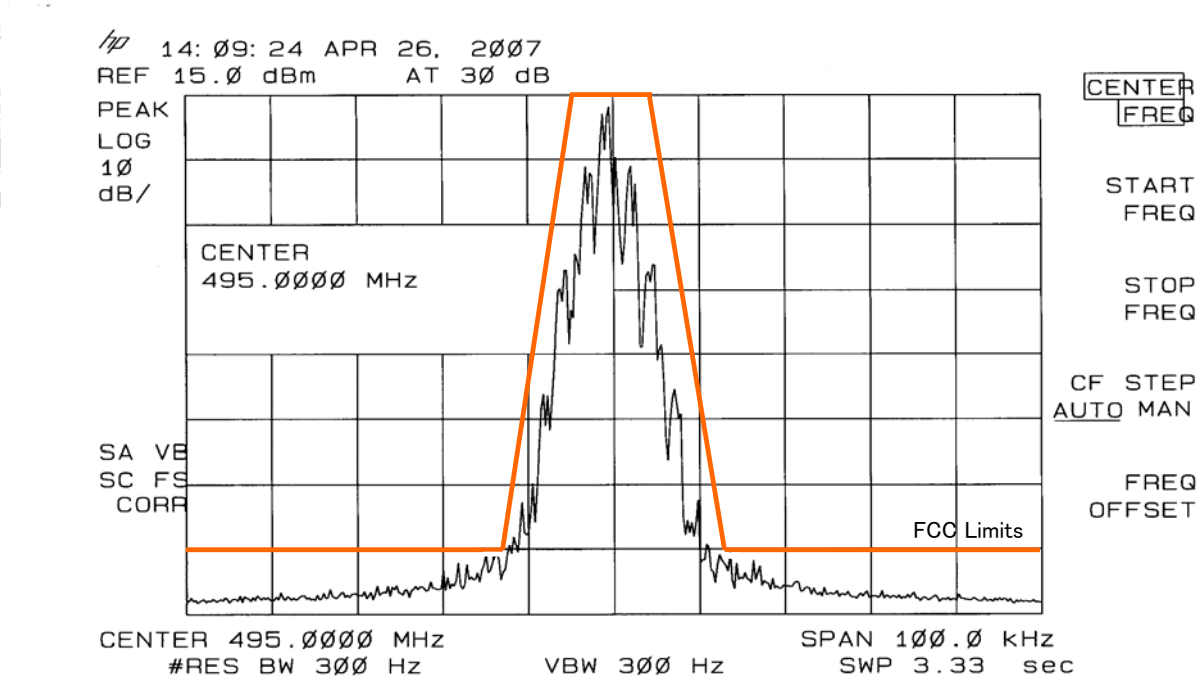


Model Name	SC-580C, SC-581C
FCC ID	O78SC580C
Serial Number	SAMPLE4
Emission Type	11K0F3E
Channel Spacing	12.5[kHz]
Frequency	495.000[MHz]

7. Occupied Bandwidth 2500Hz Sine Wave with CTCSS(250.3Hz) (Paragraph 7)



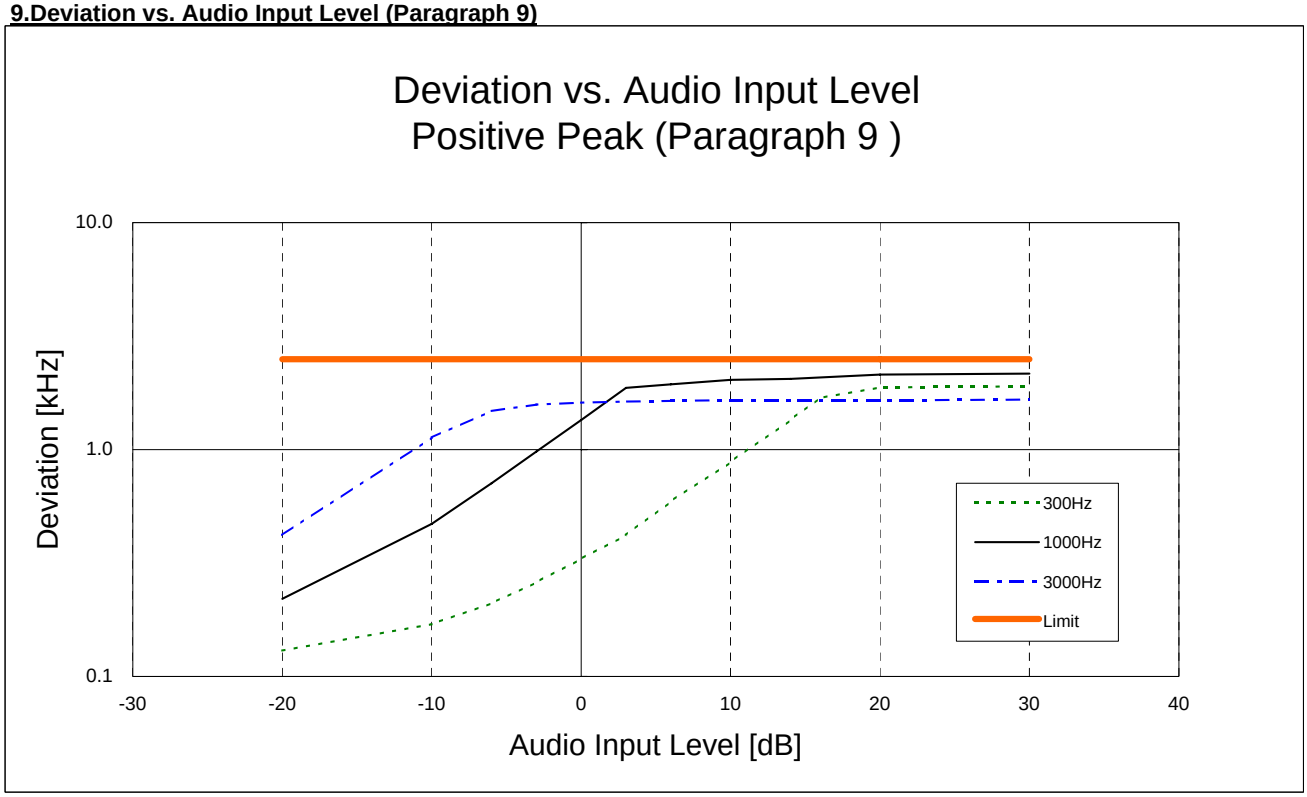
8. Occupied Bandwidth 2500Hz Sine Wave with DCS(023) (Paragraph 8)



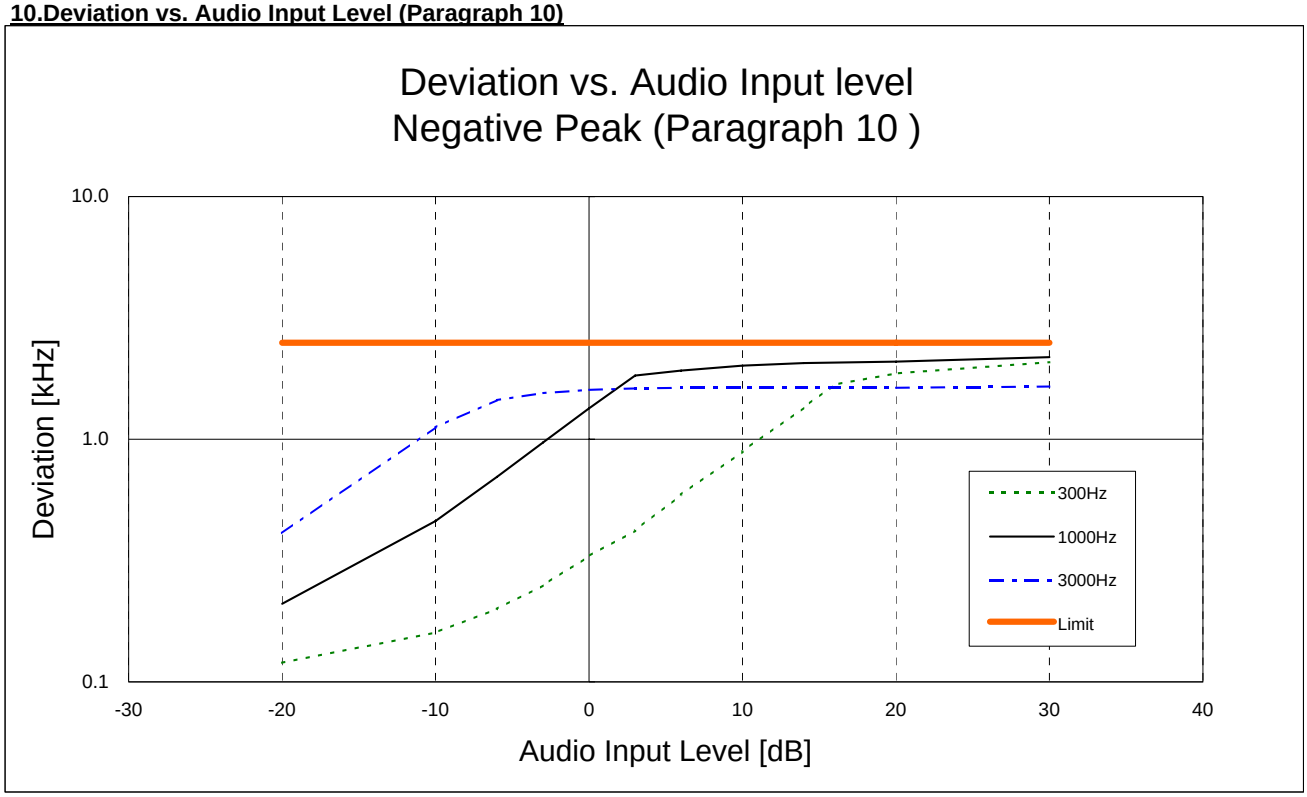
Model Name	SC-580C, SC-581C
FCC ID	O78SC580C
Serial Number	SAMPLE4
Emission Type	11K0F3E
Channel Spacing	12.5[kHz]
Frequency	495.000[MHz]

0dB =15.0[mV]

9.Deviation vs. Audio Input Level (Paragraph 9)



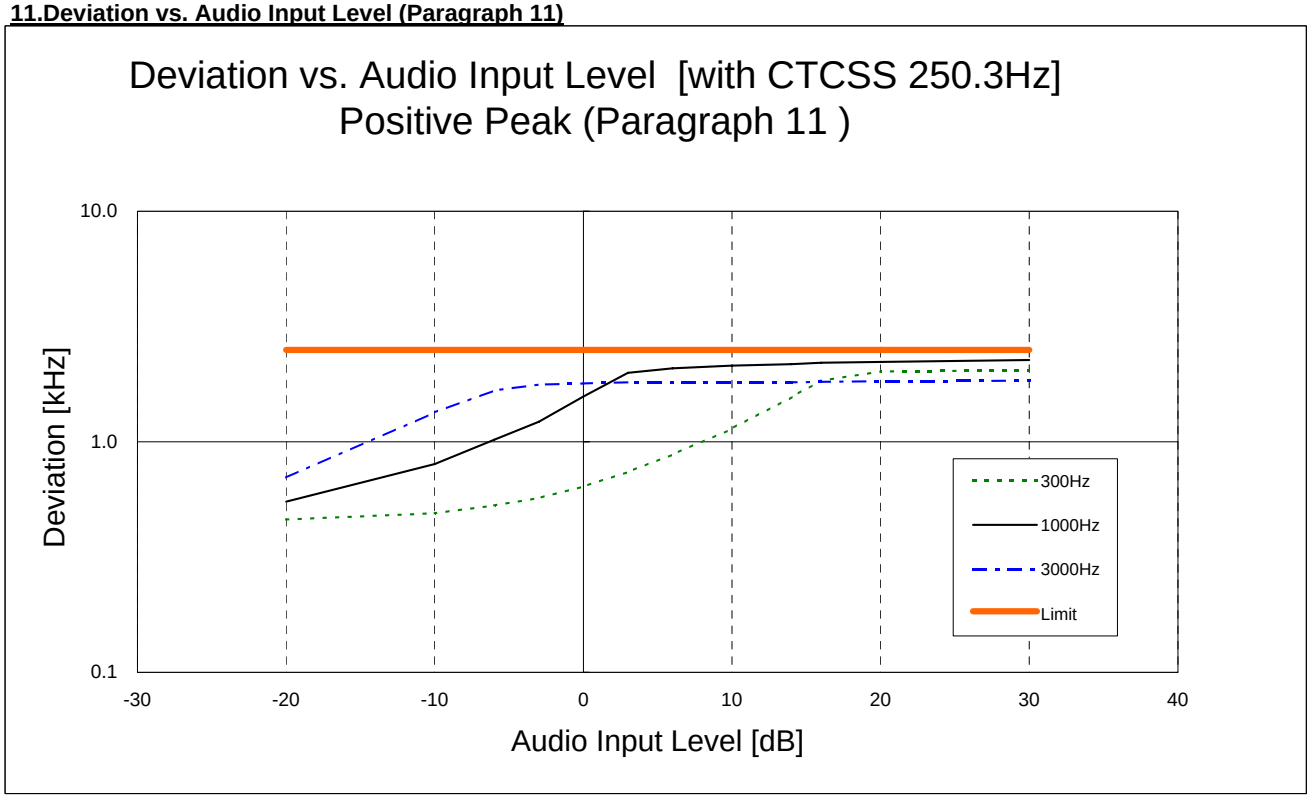
10.Deviation vs. Audio Input Level (Paragraph 10)



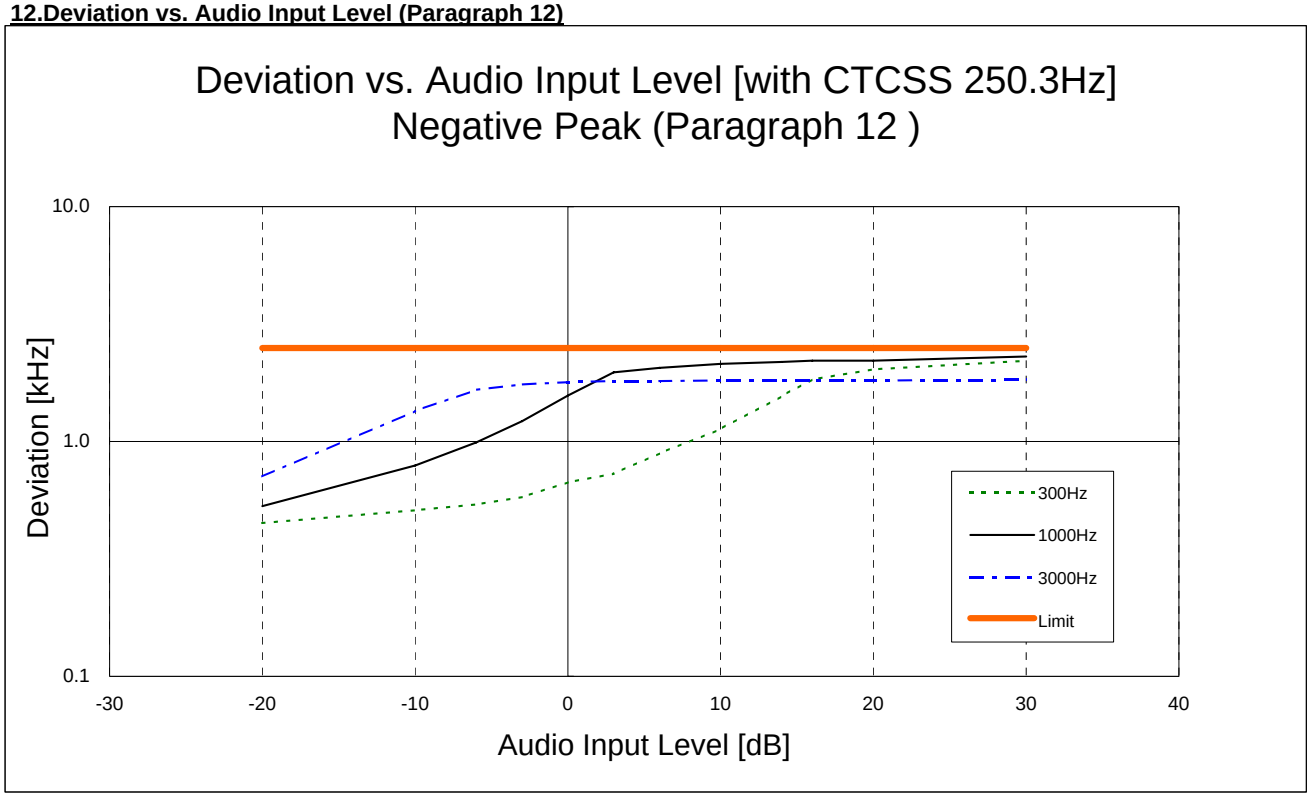
Model Name	SC-580C, SC-581C
FCC ID	O78SC580C
Serial Number	SAMPLE4
Emission Type	11K0F3E
Channel Spacing	12.5[kHz]
Frequency	495.000[MHz]

0dB =15.0[mV]

11.Deviation vs. Audio Input Level (Paragraph 11)



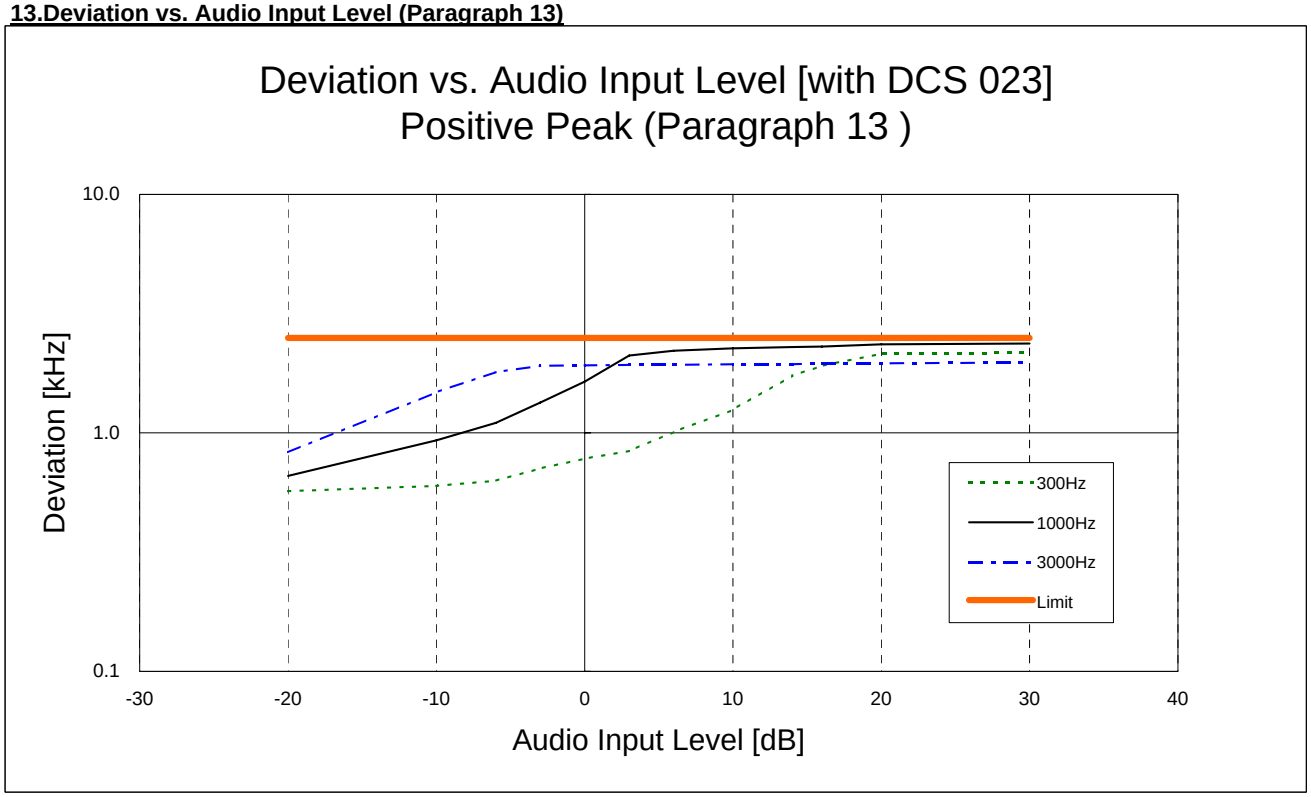
12.Deviation vs. Audio Input Level (Paragraph 12)



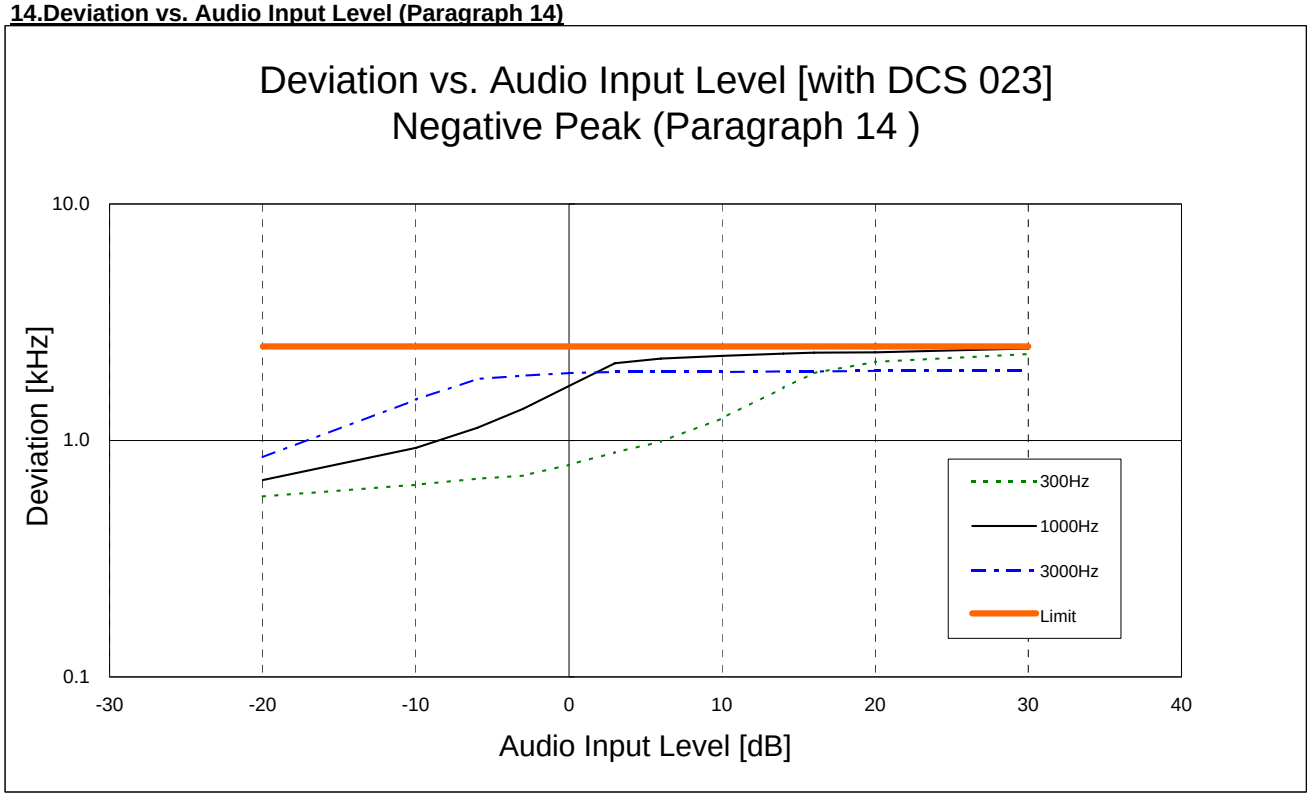
Model Name	SC-580C, SC-581C
FCC ID	O78SC580C
Serial Number	SAMPLE4
Emission Type	11K0F3E
Channel Spacing	12.5[kHz]
Frequency	495.000[MHz]

0dB =15.0[mV]

13.Deviation vs. Audio Input Level (Paragraph 13)

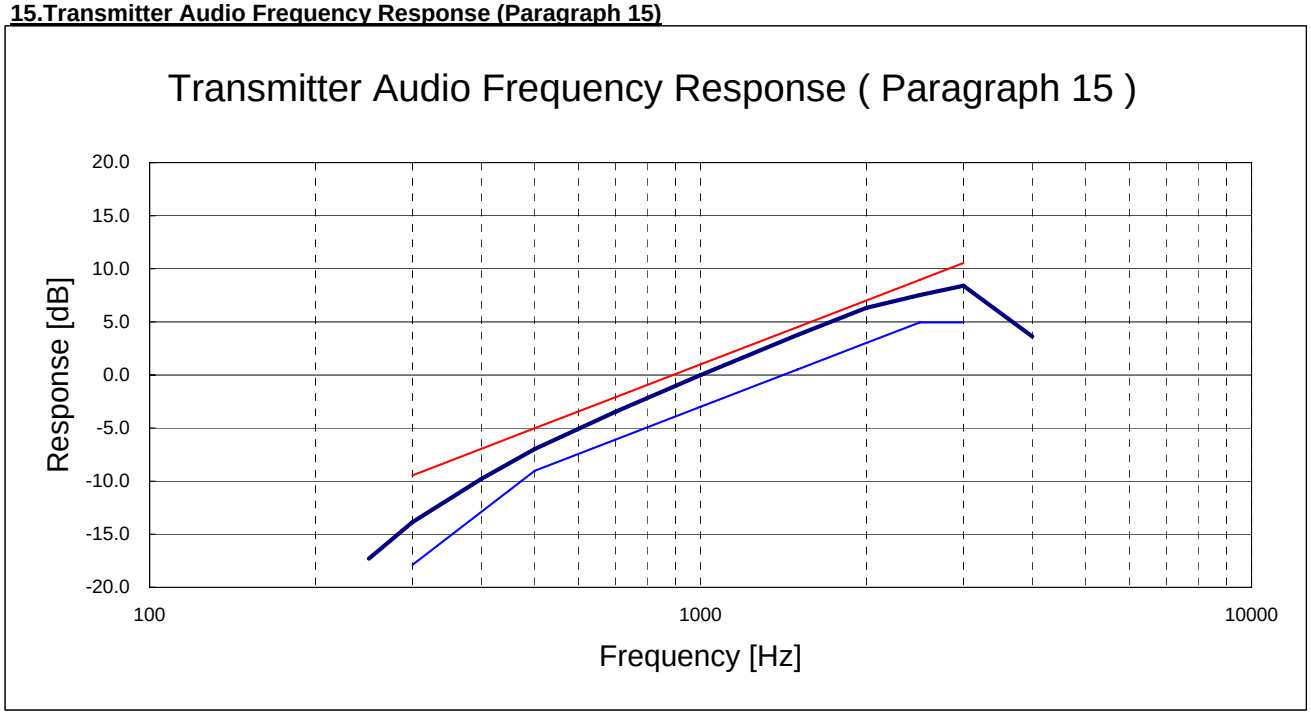


14.Deviation vs. Audio Input Level (Paragraph 14)

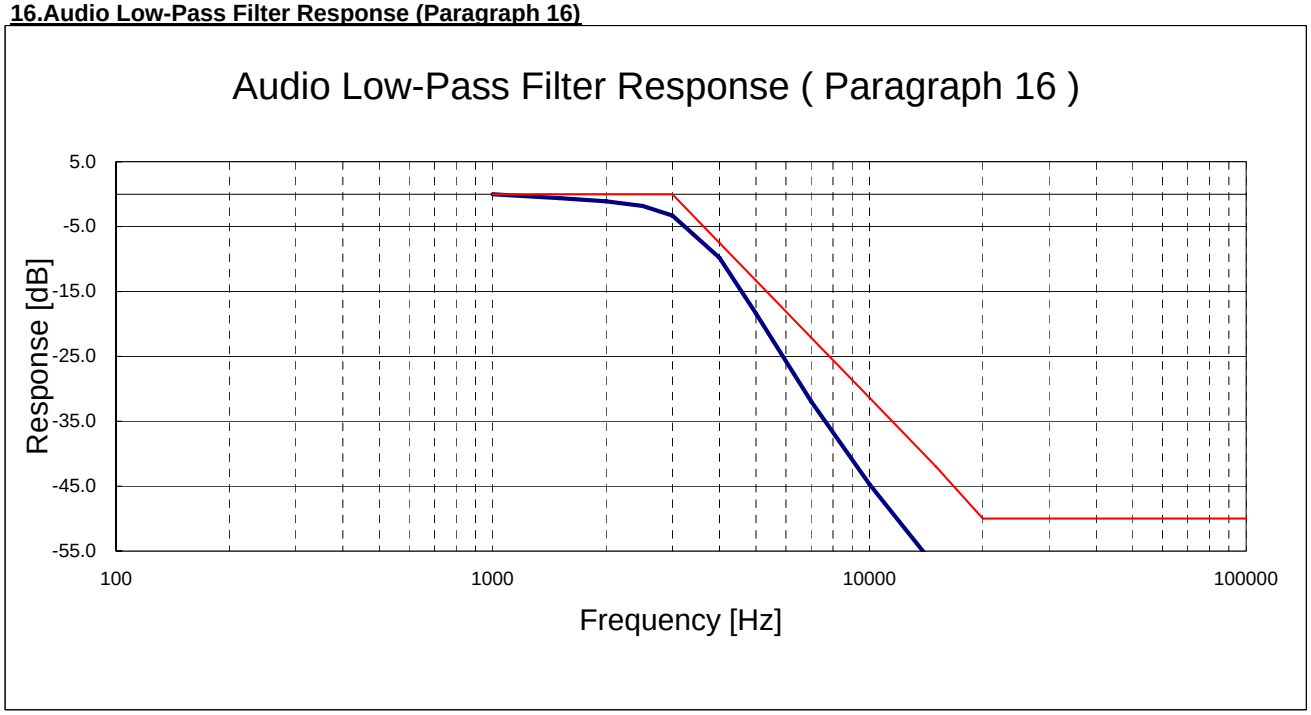


Model Name	SC-580C, SC-581C
FCC ID	O78SC580C
Serial Number	SAMPLE4
Emission Type	11K0F3E
Channel Spacing	12.5[kHz]
Frequency	495.000[MHz]

15.Transmitter Audio Frequency Response (Paragraph 15)

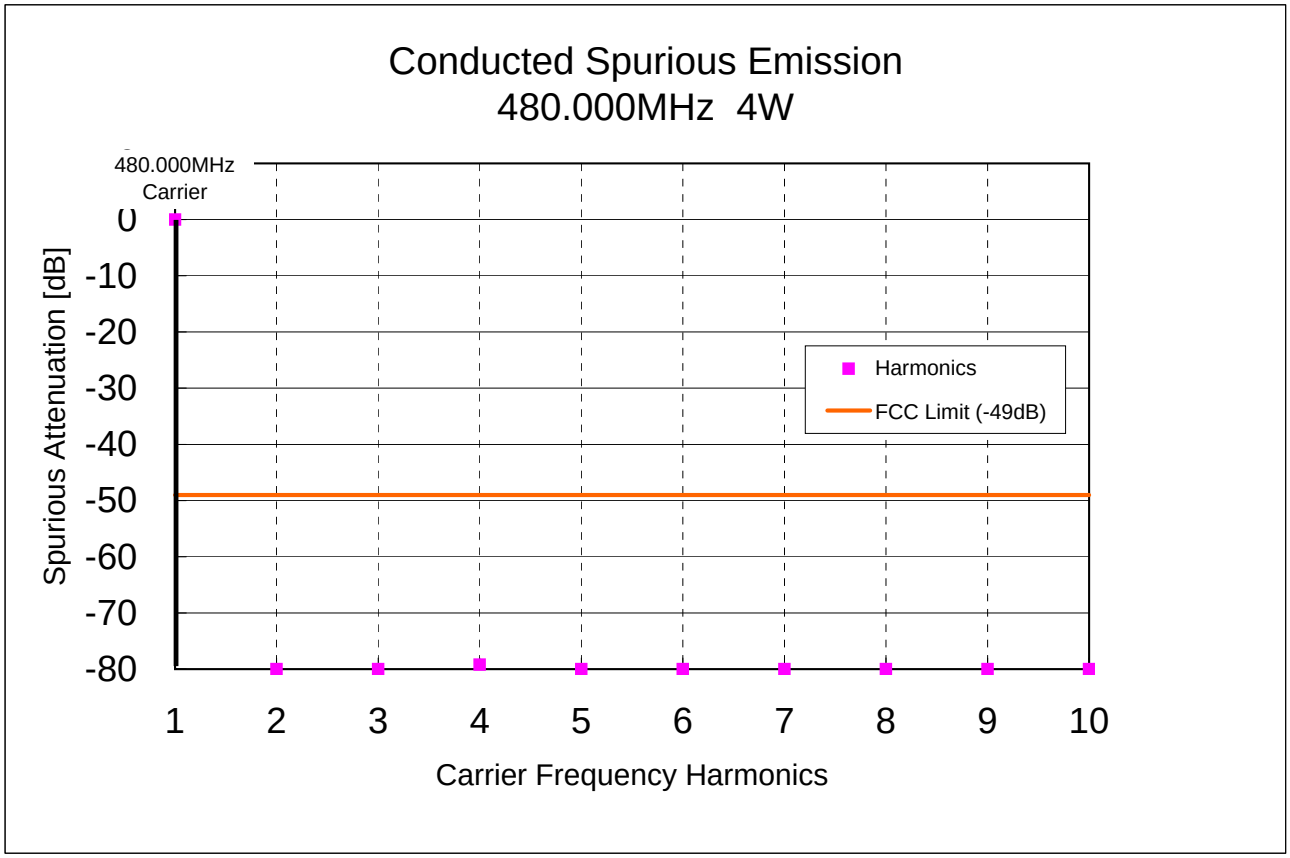


16.Audio Low-Pass Filter Response (Paragraph 16)



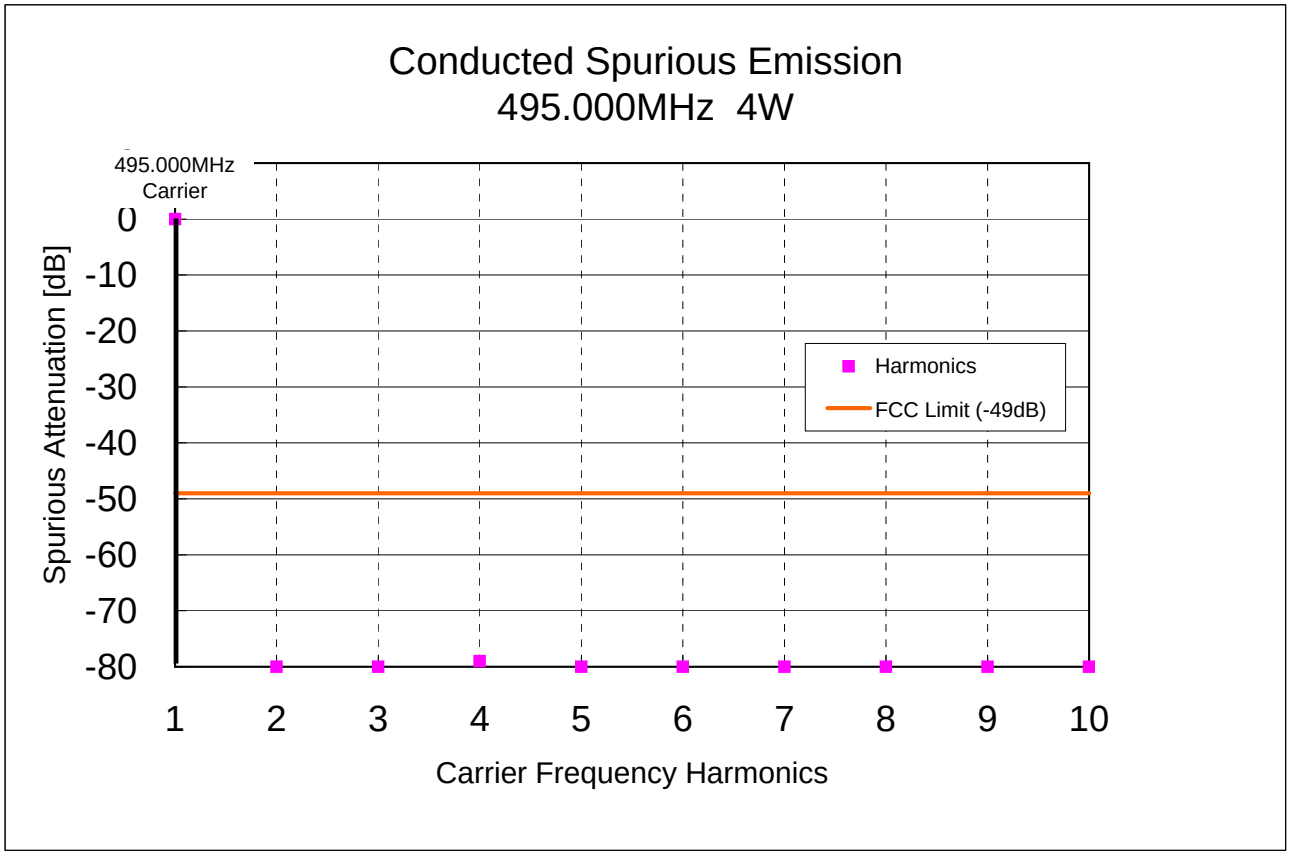
17.Conducted Spurious Emission, 480.000MHz@4W (PARAGRAPH 17)

Harmonics	Emission Frequency [MHz]	Spurious Attenuation [dB]	FCC Limit
1	480.000(Carrier)	0.0	-49.0
2	960.000	-80.0	-49.0
3	1440.000	-80.0	-49.0
4	1920.000	-79.2	-49.0
5	2400.000	-80.0	-49.0
6	2880.000	-80.0	-49.0
7	3360.000	-80.0	-49.0
8	3840.000	-80.0	-49.0
9	4320.000	-80.0	-49.0
10	4800.000	-80.0	-49.0



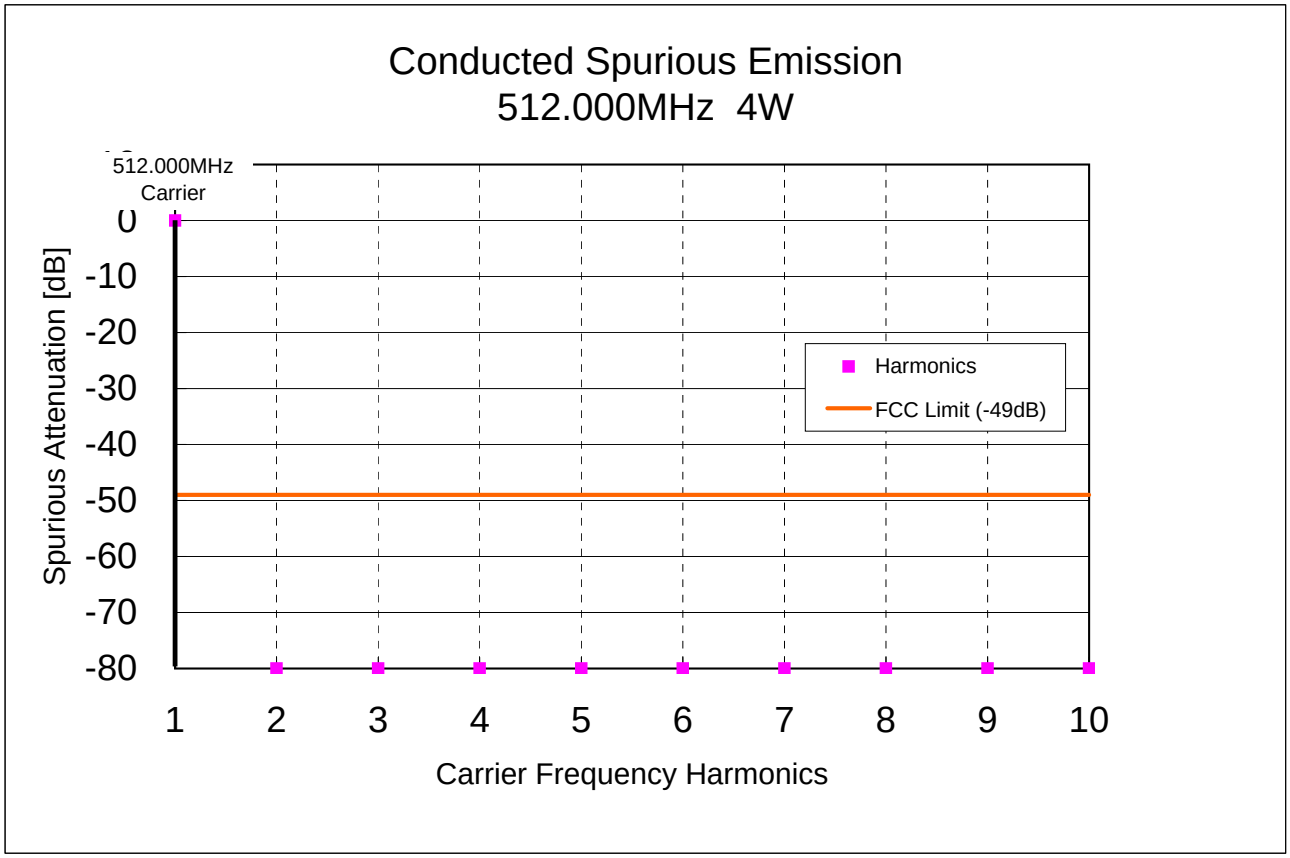
18.Conducted Spurious Emission, 495.000MHz@4W (PARAGRAPH 18)

Harmonics	Emission Frequency [MHz]	Spurious Attenuation [dB]	FCC Limit
1	495.000(Carrier)	0.0	-49.0
2	990.000	-80.0	-49.0
3	1485.000	-80.0	-49.0
4	1980.000	-79.0	-49.0
5	2475.000	-80.0	-49.0
6	2970.000	-80.0	-49.0
7	3465.000	-80.0	-49.0
8	3960.000	-80.0	-49.0
9	4455.000	-80.0	-49.0
10	4950.000	-80.0	-49.0



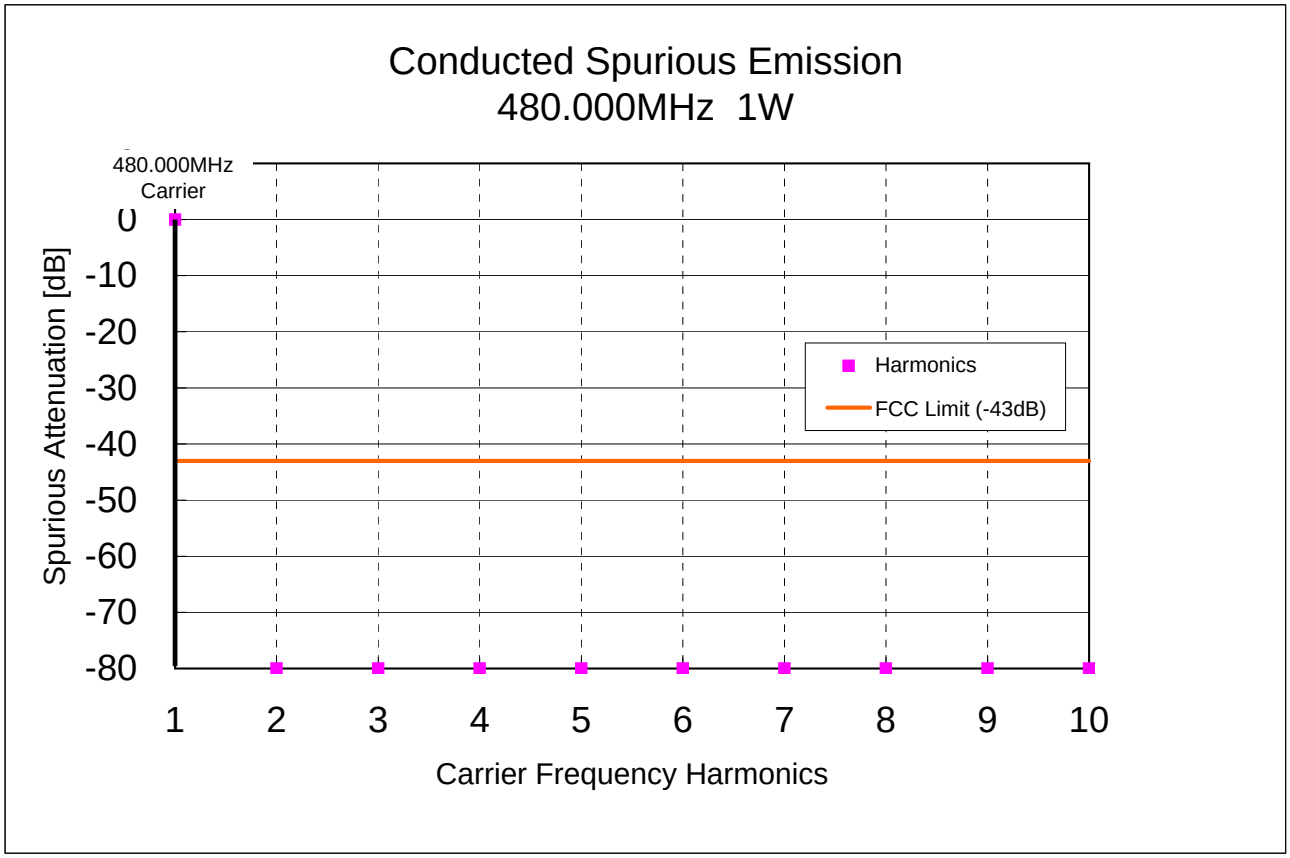
19.Conducted Spurious Emission, 512.000MHz@4W (PARAGRAPH 19)

Harmonics	Emission Frequency [MHz]	Spurious Attenuation [dB]	FCC Limit
1	512.000(Carrier)	0.0	-49.0
2	1024.000	-80.0	-49.0
3	1536.000	-80.0	-49.0
4	2048.000	-80.0	-49.0
5	2560.000	-80.0	-49.0
6	3072.000	-80.0	-49.0
7	3584.000	-80.0	-49.0
8	4096.000	-80.0	-49.0
9	4608.000	-80.0	-49.0
10	5120.000	-80.0	-49.0



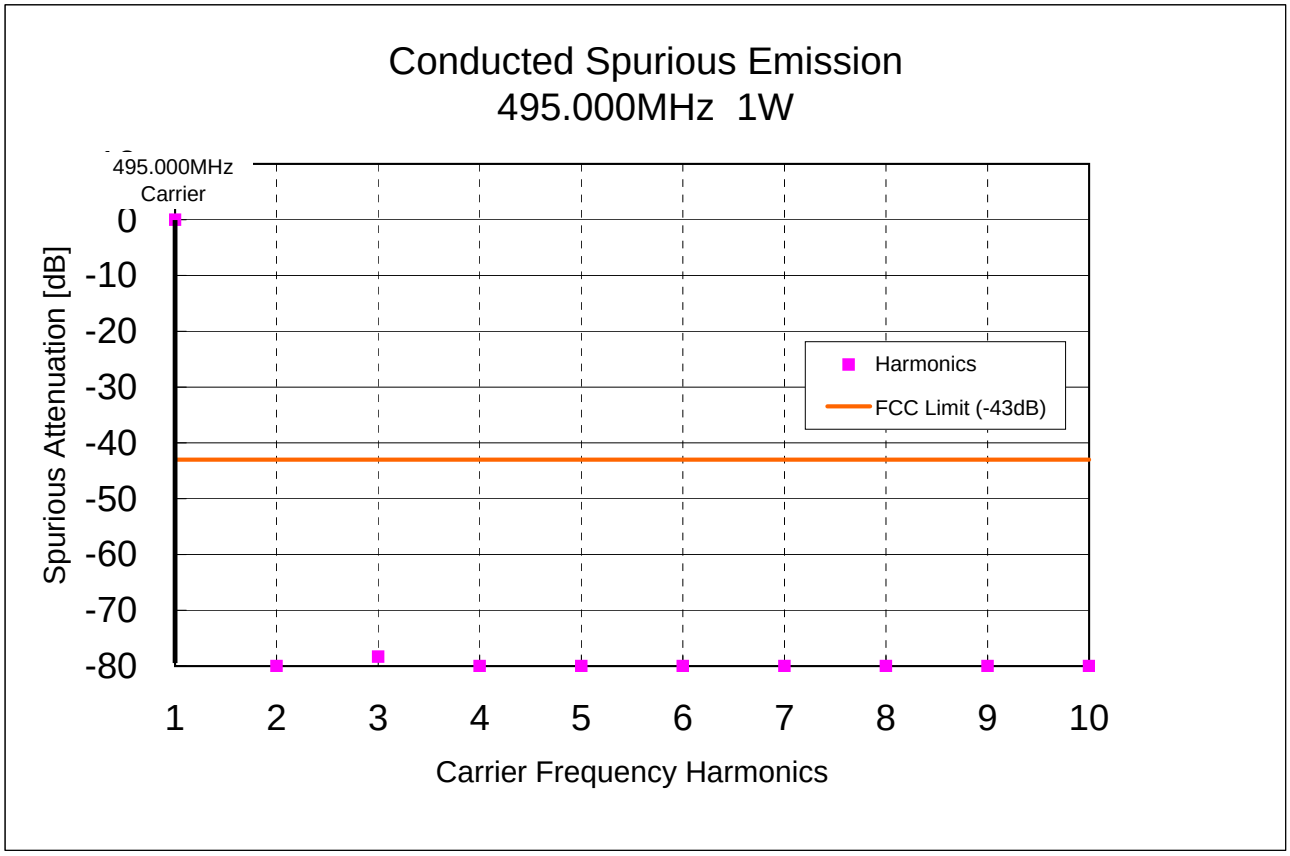
20.Conducted Spurious Emission, 480.000MHz@1W (PARAGRAPH 20)

Harmonics	Emission Frequency [MHz]	Spurious Attenuation [dB]	FCC Limit
1	480.000(Carrier)	0.0	-43.0
2	960.000	-80.0	-43.0
3	1440.000	-80.0	-43.0
4	1920.000	-80.0	-43.0
5	2400.000	-80.0	-43.0
6	2880.000	-80.0	-43.0
7	3360.000	-80.0	-43.0
8	3840.000	-80.0	-43.0
9	4320.000	-80.0	-43.0
10	4800.000	-80.0	-43.0



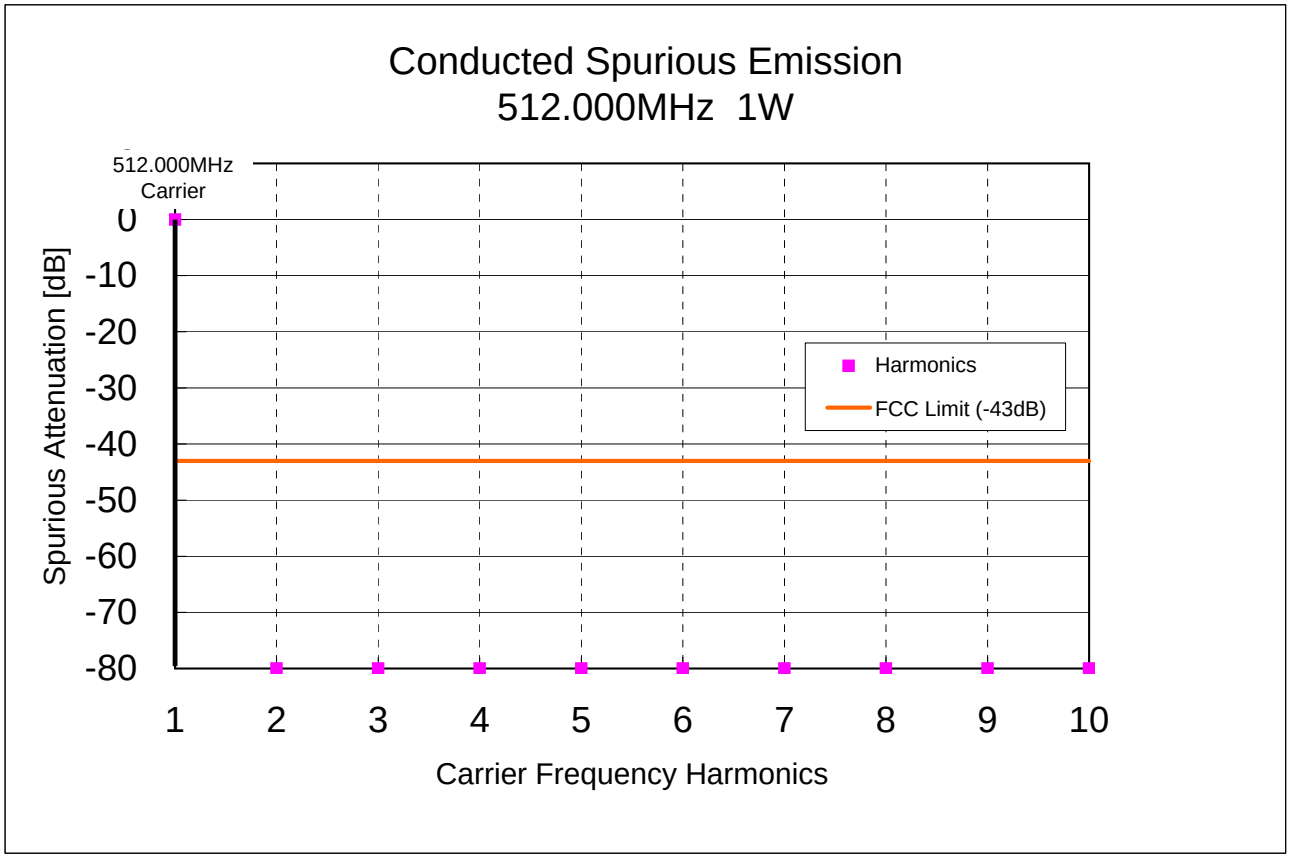
21.Conducted Spurious Emission, 495.000MHz@1W (PARAGRAPH 21)

Harmonics	Emission Frequency [MHz]	Spurious Attenuation [dB]	FCC Limit
1	495.000(Carrier)	0.0	-43.0
2	990.000	-80.0	-43.0
3	1485.000	-78.3	-43.0
4	1980.000	-80.0	-43.0
5	2475.000	-80.0	-43.0
6	2970.000	-80.0	-43.0
7	3465.000	-80.0	-43.0
8	3960.000	-80.0	-43.0
9	4455.000	-80.0	-43.0
10	4950.000	-80.0	-43.0



22.Conducted Spurious Emission, 512.000MHz@1W (PARAGRAPH 22)

Harmonics	Emission Frequency [MHz]	Spurious Attenuation [dB]	FCC Limit
1	512.000(Carrier)	0.0	-43.0
2	1024.000	-80.0	-43.0
3	1536.000	-80.0	-43.0
4	2048.000	-80.0	-43.0
5	2560.000	-80.0	-43.0
6	3072.000	-80.0	-43.0
7	3584.000	-80.0	-43.0
8	4096.000	-80.0	-43.0
9	4608.000	-80.0	-43.0
10	5120.000	-80.0	-43.0



Model Name	SC-580C, SC-581C
FCC ID	O78SC580C
Serial Number	SAMPLE4
Emission Type	11K0F3E
Channel Spacing	12.5[kHz]
Frequency	495.025[MHz]

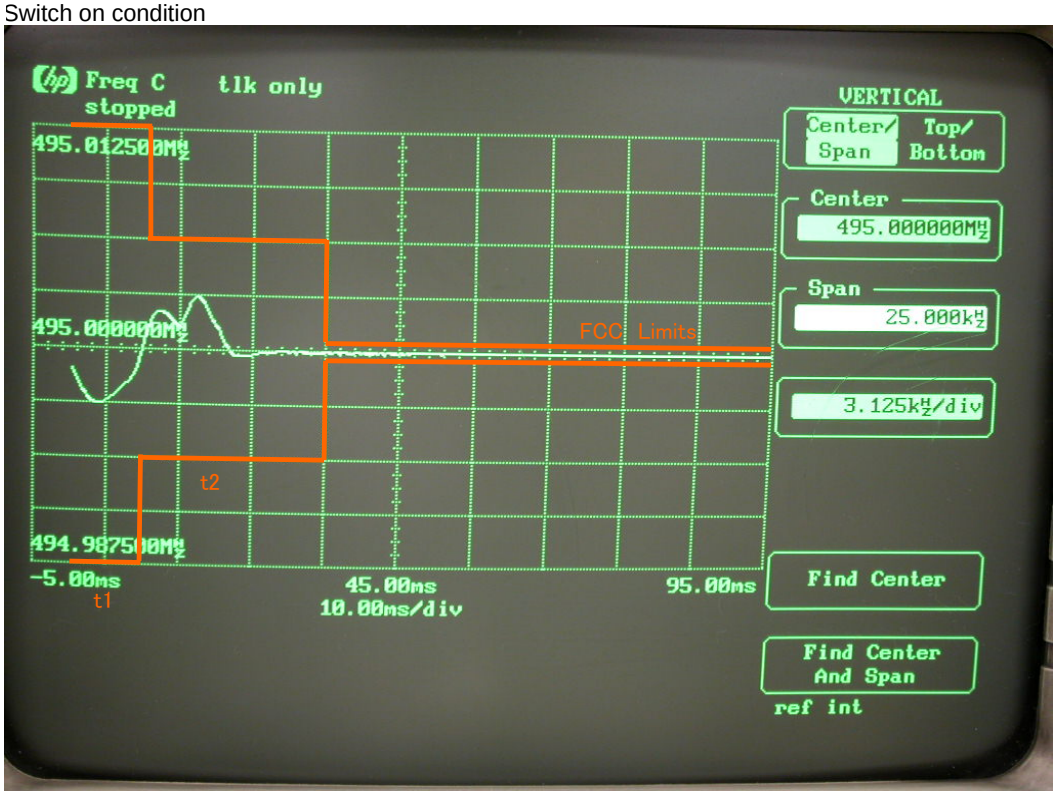
23.Conducted Spurious Emission@Receiver (Paragraph 23)

Frequency Tuned [MHz]	Frequency Emission [MHz]	Level [dBm]
495.025	450.075	-64.4
495.025	900.150	-79.0
495.025	1350.225	-70.4
495.025	1800.300	-79.1
495.025	2250.375	-82.0
495.025	2700.450	-79.9
495.025	3150.525	-76.3
495.025	3600.600	---
495.025	4050.675	---
495.025	4500.750	---

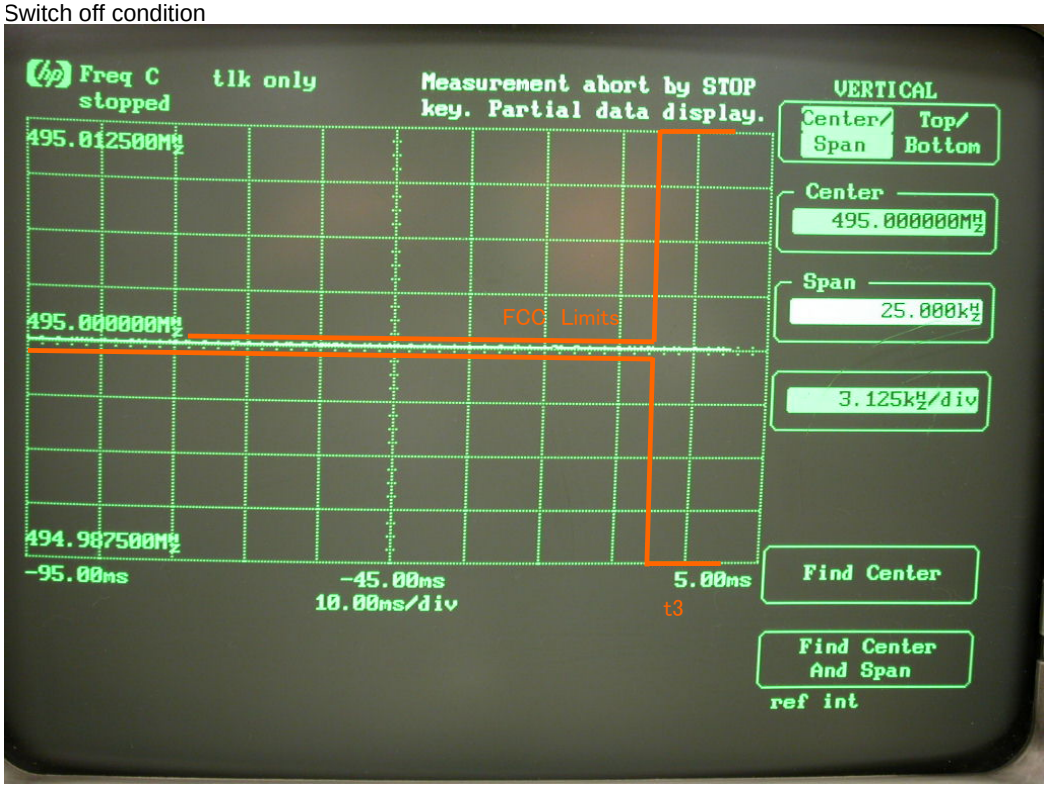
Model Name	SC-580C, SC-581C
FCC ID	O78SC580C
Serial Number	SAMPLE4
Emission Type	11K0F3E
Channel Spacing	12.5[kHz]
Frequency	495.000[MHz]

24.Transient Behavior (Paragraph 24)

Switch on condition



Switch off condition



DATA OF SPURIOUS EMISSIONS TEST (RADIATED)

UL Japan, Inc.
YAMAKITA NO.2 Open Test Site
27IE0351-YK

Applicant	: SMART COMMUNICATIONS LIMITED.					
Kind of Equipment	: UHF Handheld Transceiver					
Model No.	: SC-580 C					
Serial No.	: Sample4					
Power	: DC7.2V					
Mode	: Transmitting(480.0000MHz)					
Remarks	: e.r.p					
Date	: 05/11/2007		: 05/17/2007			
Test Distans	: 3m		: 3m			
Temperature	: 22	℃	: 23	℃	Engineer :	Takahiro Suzuki
Humidity	: 49	%	: 52	%		Tatsuya Arai
Regulation	: FCC Part90					

No.	FREQ	READING		CABLE	ANT	ATTEN	RESULT		LIMITS	MARGIN	
		HOR	VER	LOSS	GAIN		HOR	VER	(ERP)	HOR	VER
	[MHz]	[dBm]		[dB]	[dBi]	[dB]	[dBm]		[dBm]	[dBm]	
1	960.01	-22.0	-19.6	6.5	2.15	10.16	-38.7	-36.3	-13.0	25.7	23.3
2	1440.00	-40.0	-41.9	5.1	8.62	0.00	-38.6	-40.5	-13.0	25.6	27.5
3	1920.00	-35.9	-43.5	6.0	8.99	0.00	-35.1	-42.7	-13.0	22.1	29.7
4	2400.00	-27.7	-31.1	6.5	9.03	0.00	-27.3	-30.7	-13.0	14.3	17.7
5	2880.00	-27.5	-29.8	7.3	8.96	0.00	-28.0	-30.3	-13.0	15.0	17.3
6	3360.00	-27.6	-26.6	7.7	10.50	0.00	-27.0	-26.0	-13.0	14.0	13.0
7	3840.00	-32.2	-38.2	8.4	10.59	0.00	-32.2	-38.2	-13.0	19.2	25.2
8	4320.00	-36.9	-40.1	9.2	10.63	0.00	-37.6	-40.8	-13.0	24.6	27.8
9	4800.00	-42.6	-45.3	9.8	10.52	0.00	-44.0	-46.7	-13.0	31.0	33.7

CALCULATION:READING(SG)-CABLE LOSS+ANT.GAIN-ATTEN-2.15dB
RxANTENNA:Biconical Antenna(30-300MHz), Logperriodic Antenna(No.300-1000MHz), DRG Horn Antenna(1-18GHz)
TxANTENNA:Biconical Antenna(30-60MHz), Dipole Antenna(60-1000MHz), DRG Horn Antenna(1-18GHz)

DATA OF SPURIOUS EMISSIONS TEST (RADIATED)

UL Japan, Inc.
YAMAKITA NO.2 Open Test Site
27IE0351-YK

Applicant	: SMART COMMUNICATIONS LIMITED.					
Kind of Equipment	: UHF Handheld Transceiver					
Model No.	: SC-580 C					
Serial No.	: Sample4					
Power	: DC7.2V					
Mode	: Transmitting(495.0000MHz)					
Remarks	: e.r.p					
Date	: 05/11/2007		: 05/17/2007			
Test Distans	: 3m		: 3m			
Temperature	: 22	℃	: 23	℃	Engineer :	Takahiro Suzuki
Humidity	: 49	%	: 52	%		Tatsuya Arai
Regulation	: FCC Part90					

No.	FREQ	READING		CABLE	ANT	ATTEN	RESULT		LIMITS	MARGIN	
		HOR	VER	LOSS	GAIN		HOR	VER	(ERP)	HOR	VER
	[MHz]	[dBm]		[dB]	[dBi]	[dB]	[dBm]		[dBm]	[dBm]	
1	990.02	-27.7	-20.6	6.6	2.15	10.19	-44.5	-37.4	-13.0	31.5	24.4
2	1485.00	-42.9	-50.3	5.2	8.81	0.00	-41.4	-48.8	-13.0	28.4	35.8
3	1980.00	-35.4	-44.3	6.1	9.00	0.00	-34.7	-43.6	-13.0	21.7	30.6
4	2475.00	-31.7	-35.7	6.6	9.04	0.00	-31.4	-35.4	-13.0	18.4	22.4
5	2970.00	-27.1	-26.5	7.4	8.95	0.00	-27.7	-27.1	-13.0	14.7	14.1
6	3465.00	-29.2	-31.9	7.8	10.96	0.00	-28.2	-30.9	-13.0	15.2	17.9
7	3960.00	-32.6	-36.7	8.6	10.41	0.00	-32.9	-37.0	-13.0	19.9	24.0
8	4455.00	-31.7	-34.0	9.5	10.74	0.00	-32.6	-34.9	-13.0	19.6	21.9
9	4950.00	-35.5	-39.8	9.9	10.38	0.00	-37.2	-41.5	-13.0	24.2	28.5

CALCULATION:READING(SG)-CABLE LOSS+ANT.GAIN-ATTEN-2.15dB
RxANTENNA:Biconical Antenna(30-300MHz), Logperriodic Antenna(No.300-1000MHz), DRG Horn Antenna(1-18GHz)
TxANTENNA:Biconical Antenna(30-60MHz), Dipole Antenna(60-1000MHz), DRG Horn Antenna(1-18GHz)

DATA OF SPURIOUS EMISSIONS TEST (RADIATED)

UL Japan, Inc.
YAMAKITA NO.2 Open Test Site
27IE0351-YK

Applicant	: SMART COMMUNICATIONS LIMITED.		
Kind of Equipment	: UHF Handheld Transceiver		
Model No.	: SC-580 C		
Serial No.	: Sample4		
Power	: DC7.2V		
Mode	: Transmitting(511.9750MHz)		
Remarks	: e.r.p		
Date	: 05/11/2007	: 05/17/2007	
Test Distans	: 3m	: 3m	
Temperature	: 22 ℃	: 23 ℃	Engineer : Takahiro Suzuki
Humidity	: 49 %	: 52 %	Tatsuya Arai
Regulation	: FCC Part90		

No.	FREQ	READING		CABLE	ANT	ATTEN	RESULT		LIMITS	MARGIN	
		HOR	VER	LOSS	GAIN		HOR	VER	(ERP)	HOR	VER
	[MHz]	[dBm]		[dB]	[dBi]	[dB]	[dBm]		[dBm]	[dBm]	
1	1024.00	-37.3	-37.4	4.4	6.81	0.00	-37.0	-37.1	-13.0	24.0	24.1
2	1536.00	-39.4	-39.2	5.3	8.89	0.00	-38.0	-37.8	-13.0	25.0	24.8
3	2048.00	-33.6	-38.7	6.2	9.01	0.00	-32.9	-38.0	-13.0	19.9	25.0
4	2560.00	-30.9	-32.6	6.7	9.03	0.00	-30.7	-32.4	-13.0	17.7	19.4
5	3072.00	-24.6	-28.7	7.5	9.25	0.00	-25.0	-29.1	-13.0	12.0	16.1
6	3584.00	-42.6	-44.6	7.9	10.98	0.00	-41.7	-43.7	-13.0	28.7	30.7
7	4096.00	-31.2	-31.2	8.8	10.43	0.00	-31.7	-31.7	-13.0	18.7	18.7
8	4608.00	-33.6	-36.8	9.6	10.68	0.00	-34.7	-37.9	-13.0	21.7	24.9
9	5120.00	-34.4	-37.4	10.1	10.49	0.00	-36.2	-39.2	-13.0	23.2	26.2

CALCULATION:READING(SG)-CABLE LOSS+ANT.GAIN-ATTEN-2.15dB
RxANTENNA:Biconical Antenna(30-300MHz), Logperriodic Antenna(No.300-1000MHz), DRG Horn Antenna(1-18GHz)
TxANTENNA:Biconical Antenna(30-60MHz), Dipole Antenna(60-1000MHz), DRG Horn Antenna(1-18GHz)

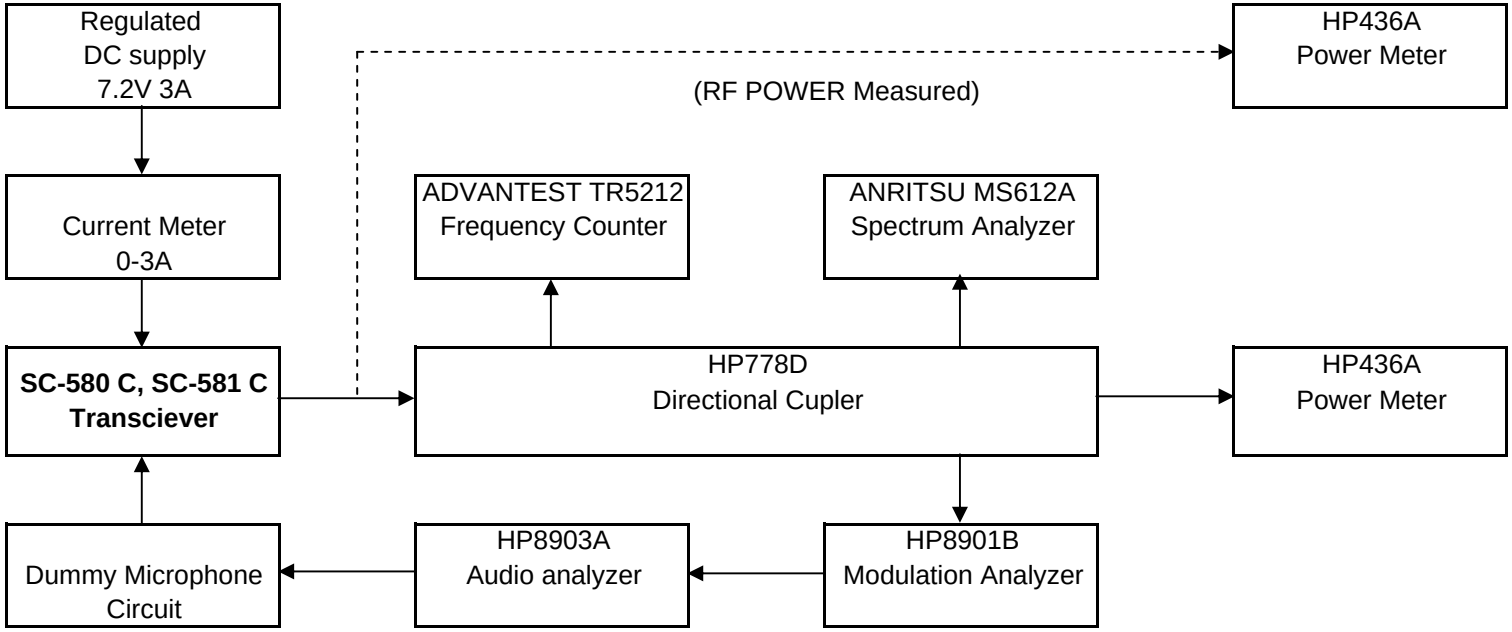


Figure 1. Test Set-Up

TECHNICAL DATA – SC- 580 C, SC- 581 C Wide band

A. RF POWER OUTPUT

1. Power measured using test set-up Figure 1.
   Primary power 7.2 VDC at battery input connector.
2. Power Data for 480.000MHz to 512.000MHz @ 4W is presented in Paragraph 1.
3. Power Data for 480.000MHz to 512.000MHz @ 1W is presented in Paragraph 2.

B. FREQUENCY STABILITY

1. a. Frequency stability with varying temperature. See Figure 1 for test set-up.
   b. Data is presented on Paragraph 3 for Standard Primary Input Voltage of 7.2 VDC maintained throughout entire test.
2. a. Frequency stability with Primary Input Voltage. See Figure 1 for test set-up.
   b. Data is presented on Paragraph 4 for Standard Temperature of 25 degrees Celsius maintained throughout entire test.

C. OCCUPIED BANDWIDTH

1. a. A spectrum analyzer was used to determine the occupied bandwidth. See Figure 1 for test set-up.
   b. Data is presented on Paragraph 5 to Paragraph 8 for Standard primary Input Voltage of 7.2 VDC maintained throughout entire test. The carrier and all detectable sidebands were displayed on the spectrum analyzer and pertinent data concerning amplitude and frequency were read from the screen.
   c. un modulated : Data measured at 495.000MHz. (see Paragraph 5)
   d. Input to transmitter audio circuits: 2500Hz sine wave at a level 16dB greater than that necessary to produce 50% modulation. Data measured at 495.000MHz and is typical of all frequencies. (see Paragraph 6)
   e. Input to transmitter audio circuits: 2500Hz sine wave at a level 16dB greater than that necessary to produce 50% modulation with CTCSS(250.3Hz). Data measured at 495.000MHz and is typical of all frequencies. (see Paragraph 7)
   f. Input to transmitter audio circuits: 2500Hz sine wave at a level 16dB greater than that necessary to produce 50% modulation with DCS(023). Data measured at 495.000MHz and is typical of all frequencies. (see Paragraph 8)

D. MODULATION CHARACTERISTICS

1. Modulation Deviation

    a. Measured using test set-up, see Figure 1.

    b. Primary Input Voltage of 7.2 VDC at battery input connector.

    c. Data (Positive peak) is presented in Paragraph 9

    d. Data (Negative peak) is presented in Paragraph 10.

    e. Data (Positive peak) with CTCSS (250.3Hz) is presented in Paragraph 11.

    f. Data (Negative peak) with CTCSS (250.3Hz) is presented in Paragraph 12.

    g. Data (Positive peak) with DCS (023) is presented in Paragraph 13.

    h. Data (Negative peak) with DCS (023) is presented in Paragraph 14.

2. Transmitter Audio Frequency Response

    a. Measured using test set-up, see Figure 1.

    b. Primary Input Voltage of 7.2 VDC at battery input connector.
    Ref = 1 kHz tone response at +-1.5 kHz deviation. Curve was taken maintaining constant +- 1.5 kHz deviation.

    c. Data is presented in Paragraph 15.

3. Low-Pass Filter Response

    a. Measured using test set-up, see Figure 1.

    b. Primary Input Voltage of 7.2 VDC at battery input connector.
    Input 1 kHz tone at a level 20dB greater than that required for 3 kHz deviation The response at 1 kHz tone = 0dB. Curve was taken maintaining constant input at modulation sensitivity. Output of low-pass filter was monitored using Audio Analyzer

    c. Data is presented in Paragraph 16.

E. CONDUCTED SPURIOUS EMISSION

1. Conducted spurious data was measured at 25 degrees Celsius, 7.2 VDC applied at battery input connector external power input and using external antenna jack. See Figure 1 for test set-up.
2. Data for 480.000MHz @ 4W is presented in Paragraph 17.
3. Data for 495.000MHz @ 4W is presented in Paragraph 18.
4. Data for 512.000MHz @ 4W is presented in Paragraph 19.
5. Data for 480.000MHz @ 1W is presented in Paragraph 20.
6. Data for 495.000MHz @ 1W is presented in Paragraph 21.

7. Data for 512.000MHz @ 1W is presented in Paragraph 22.
8. Data for 495.050MHz @ Receiver is presented in Paragraph 23.

F. TRANSIENT BEHAVIOR

a. Measured using test set-up, see Figure 1.

b. Primary Input Voltage of 7.2 VDC at battery input connector.

c. Data is presented in Paragraph 24.

G. PARAGRAPHS

1. RF Power Output, 4W
2. RF Power Output, 1W
3. Frequency Stability vs. Temperature
4. Frequency Stability vs. Voltage
5. Occupied Bandwidth, un modulated
6. Occupied Bandwidth, 2500Hz Sine Wave
7. Occupied Bandwidth, 2500Hz Sine Wave with CTCSS (250.3Hz)
8. Occupied Bandwidth, 2500Hz Sine Wave with DCS (023)
9. Deviation vs. Audio input Level - Positive peak
10. Deviation vs. Audio input Level - Negative peak
11. Deviation vs. Audio input Level with CTCSS (250.3Hz) - Positive peak
12. Deviation vs. Audio input Level with CTCSS (250.3Hz) - Negative peak
13. Deviation vs. Audio input Level with DCS (023) - Positive peak
14. Deviation vs. Audio input Level with DCS (023) -Negative peak
15. Transmitter Audio Frequency Response
16. Audio Low-Pass Filter Response
17. Conducted Spurious Emissions, 480.000MHz @ 4W
18. Conducted Spurious Emissions, 495.000MHz @ 4W
19. Conducted Spurious Emissions, 512.000MHz @ 4W
20. Conducted Spurious Emissions, 480.000MHz @ 1W
21. Conducted Spurious Emissions, 495.000MHz @ 1W
22. Conducted Spurious Emissions, 512.000MHz @ 1W
23. Conducted Spurious Emissions, Receiver
24 Transient Behavior

TECHNICAL DATA

Model Name			**: SC-580C, SC-581C**		
Sample Number			**: Sample4**		
Specification is Referenced			**: EIA/TIA-603C**		
Emission Type			**: 16K0F3E**		
Channel Spacing			**: 25**		**(kHz)**
Description			**: Handheld**		
Mode			**: FM**		
Frequency Range		**TX**	**: 480.000 - 512.000**		**(MHz)**
		RX	**: 480.000 - 512.000**		**(MHz)**
Test Voltage	**Normal**		**: 7.2**		**(V)**
	Extreme		**: 6.12**	**(7.2-15%)**	**(V)**
			: 8.28	**(7.2+15%)**	**(V)**
Temperature	**Normal**		**: 25**		**(℃)**
	Extreme		**: -30 - +60**		**(℃)**
Test Frequency		**TX**	**: 480.0000**		**(MHz)**
		RX	**: 480.0500**		**(MHz)**
		TX	**: 495.0000**		**(MHz)**
		RX	**: 495.0500**		**(MHz)**
		TX	**: 512.0000**		**(MHz)**
		RX	**: 511.9500**		**(MHz)**
1st IF		**RX**	**: -44.95**		**(MHz)**
2nd IF		**RX**	**: 455**		**(kHz)**
Microphone Impedance			**: 2000**		**(Ω)**
Speaker Impedance			**: 8**		**(Ω)**
Rated RF Power		**HIGH**	**: 4**		**(W)**
		LOW	**: 1**		**(W)**
Test Operator			**: K.Atsuta**		
Test Date		**Start**	**: 2007/5/1**		
		Finish	**: 2007/5/17**		

Carrier Frequency Stability - Temperature Variation

SAMPLE4 495.000

Temperature[℃]	Measured	Frequency error[Hz]	ppm	Upper Limit	Lower Limit
-30	495.00086	860	1.85	2.50	-2.50
-20	495.00070	700	1.51	2.50	-2.50
-10	495.00038	380	0.82	2.50	-2.50
0	494.99995	-50	-0.11	2.50	-2.50
10	494.99994	-60	-0.13	2.50	-2.50
25	495.00000	0	0.00	2.50	-2.50
40	494.99975	-250	-0.54	2.50	-2.50
50	494.99953	-470	-1.01	2.50	-2.50
60	494.99945	-550	-1.18	2.50	-2.50

Audio Frequency Response

Frequency[Hz]	Measured **SAMPLE4**	**Upper Limit**	**Lower Limit**
100			
250	-17.33		
300	-13.83	**-9.46**	**-17.89**
400	-9.87	**-6.96**	**-12.90**
500	-7.10	**-5.02**	**-9.02**
700	-3.50	**-2.10**	**-6.10**
1000	0.00	**1.00**	**-3.00**
1500	3.60	**4.52**	**0.52**
2000	6.00	**7.02**	**3.02**
2500	7.37	**8.96**	**4.96**
3000	7.60	**10.54**	**4.96**
4000	2.47		

Audio LPF Response

AF[kHz]	Measured **SAMPLE4**	**Limit**
1000	0.00	**0.00**
1500	-0.70	**0.00**
2000	-1.30	**0.00**
2500	-2.20	**0.00**
3000	-3.90	**0.00**
4000	-10.80	**-7.50**
5000	-19.80	**-13.31**
7000	-32.00	**-22.08**
10000	-45.00	**-31.37**
15000	-58.10	**-41.94**
20000		**-50.00**
100000		**-50.00**

Modulation Limiting Carrier

SAMPLE4

INPUT		f=300Hz		f=1000Hz		f=3000Hz		**Limit**
V[mV]	[dB]	Positive Peak	Negative Peak	Positive Peak	Negative Peak	Positive Peak	Negative Peak	
1.5	-20	0.16	0.15	0.36	0.36	0.76	0.76	**5**
4.7	-10	0.27	0.27	0.99	0.99	2.26	2.25	**5**
7.5	-6	0.36	0.36	1.51	1.50	2.76	2.72	**5**
10.6	-3	0.48	0.48	2.08	2.07	2.85	2.85	**5**
15.0	0	0.69	0.67	2.92	2.89	2.92	2.91	**5**
21.2	3	0.90	0.89	3.72	3.66	2.97	2.95	**5**
29.9	6	1.23	1.23	3.83	3.77	2.98	2.95	**5**
47.4	10	1.90	1.88	3.92	3.89	2.99	2.95	**5**
75.2	14	2.96	2.94	4.02	3.96	3.00	2.96	**5**
94.6	16	3.70	3.65	4.09	3.98	3.00	2.98	**5**
150.0	20	3.73	3.70	4.10	4.03	3.00	2.98	**5**
474.3	30	3.83	4.05	4.11	4.10	3.02	3.01	**5**

Modulation Limiting with CTCSS 250.3Hz

SAMPLE4

INPUT		f=300Hz		f=1000Hz		f=3000Hz		**Limit**
V[mV]	[dB]	Positive Peak	Negative Peak	Positive Peak	Negative Peak	Positive Peak	Negative Peak	
1.5	-20	0.72	0.70	0.90	0.92	1.23	1.29	**5**
4.7	-10	0.81	0.83	1.44	1.43	2.56	2.55	**5**
7.5	-6	0.89	0.91	1.92	1.90	3.04	2.99	**5**
10.6	-3	1.01	1.01	2.40	2.42	3.14	3.10	**5**
15.0	0	1.14	1.15	3.14	3.14	3.16	3.15	**5**
21.2	3	1.35	1.36	3.85	3.82	3.19	3.18	**5**
29.9	6	1.65	1.65	3.93	3.92	3.20	3.19	**5**
47.4	10	2.21	2.20	4.07	4.03	3.20	3.19	**5**
75.2	14	3.19	3.22	4.12	4.09	3.21	3.19	**5**
94.6	16	3.87	3.80	4.18	4.11	3.21	3.20	**5**
150.0	20	3.87	3.82	4.21	4.18	3.21	3.20	**5**
474.3	30	3.88	4.17	4.21	4.21	3.25	3.24	**5**

Modulation Limiting with DCS 023

SAMPLE4

INPUT		f=300Hz		f=1000Hz		f=3000Hz		**Limit**
V[mV]	[dB]	Positive Peak	Negative Peak	Positive Peak	Negative Peak	Positive Peak	Negative Peak	
1.5	-20	0.88	0.94	1.12	1.15	1.45	1.51	**5**
4.7	-10	0.99	1.04	1.63	1.66	2.75	2.82	**5**
7.5	-6	1.07	1.13	2.09	2.16	3.23	3.22	**5**
10.6	-3	1.16	1.22	2.60	2.66	3.31	3.36	**5**
15.0	0	1.32	1.43	3.38	3.39	3.38	3.41	**5**
21.2	3	1.57	1.57	4.05	4.05	3.39	3.43	**5**
29.9	6	1.76	1.83	4.14	4.14	3.39	3.44	**5**
47.4	10	2.45	2.50	4.26	4.24	3.40	3.44	**5**
75.2	14	3.36	3.37	4.33	4.36	3.40	3.44	**5**
94.6	16	4.00	4.05	4.36	4.37	3.41	3.44	**5**
150.0	20	4.03	4.07	4.39	4.40	3.41	3.45	**5**
474.3	30	4.08	4.37	4.40	4.44	3.47	3.49	**5**

Model Name	SC-580C, SC-581C
FCC ID	O78SC580C
Serial Number	SAMPLE4
Emission Type	16K0F3E
Channel Spacing	25[kHz]

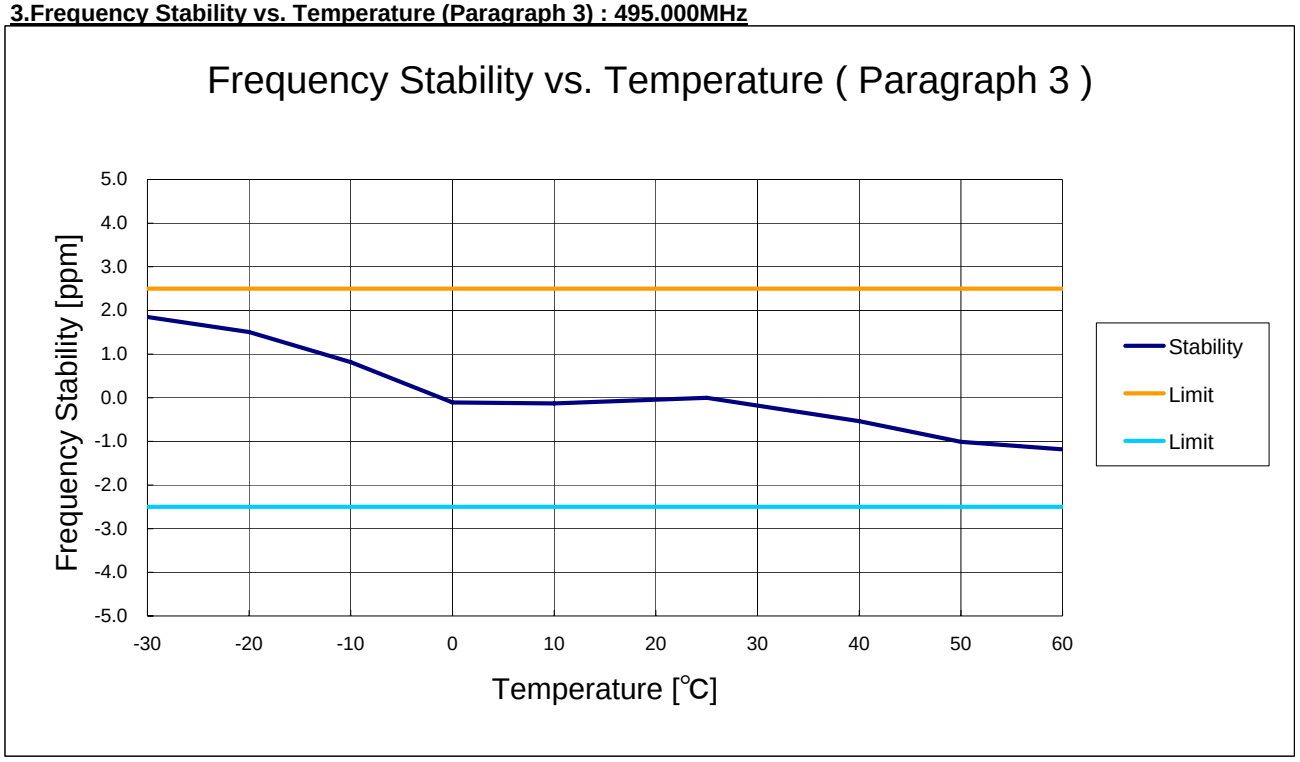
1. RF Power Output @4W (Paragraph 1)

Carrier Frequency [MHz]	RF Power Output [W]	Final D.C. Input Current [A]	D.C. Input Voltage [V]	D.C. Input Power [W]
480.000	4.11	1.76	7.20	12.67
495.000	4.10	1.82	7.20	13.10
512.000	4.13	1.85	7.20	13.32

2. RF Power Output @1W (Paragraph 2)

Carrier Frequency [MHz]	RF Power Output [W]	Final D.C. Input Current [A]	D.C. Input Voltage [V]	D.C. Input Power [W]
480.000	1.02	0.84	7.20	6.05
495.000	1.04	0.87	7.20	6.26
512.000	1.04	0.89	7.20	6.41

3.Frequency Stability vs. Temperature (Paragraph 3) : 495.000MHz

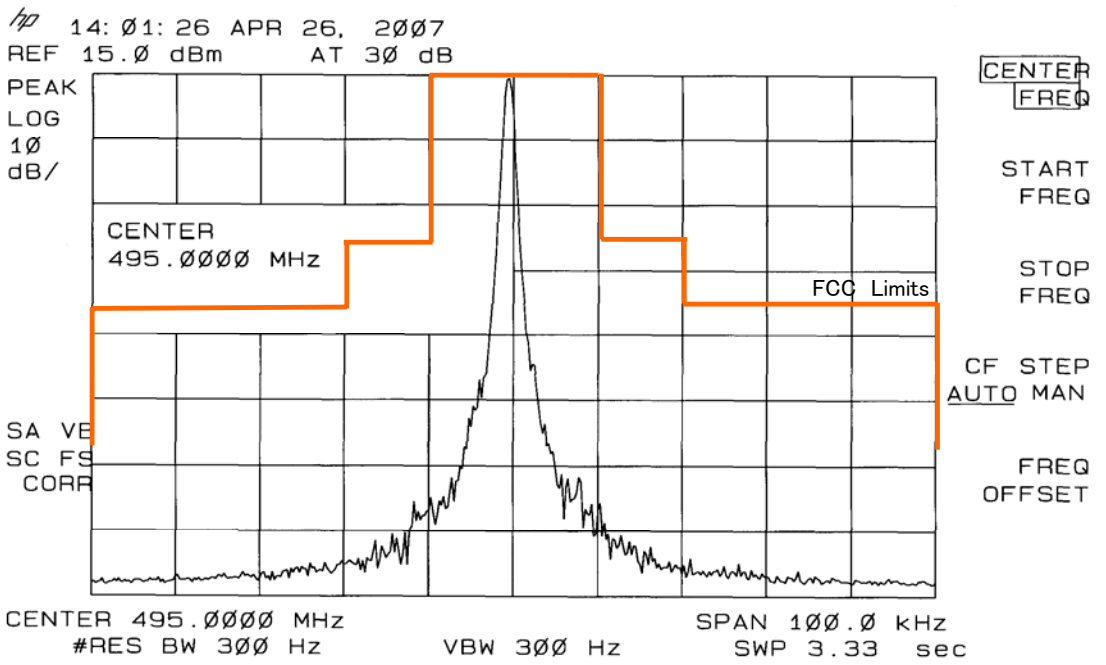


4. Frequency Stability vs. Voltage (Paragraph 4)

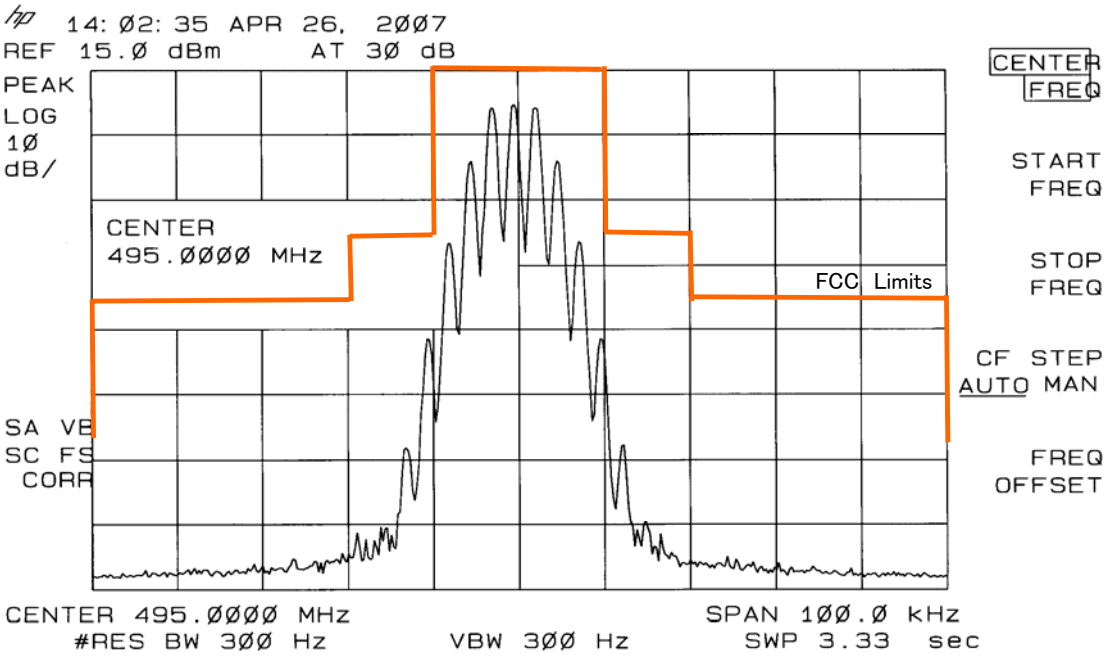
Carrier Frequency [MHz]	STV [%]	Voltage [V]	Change in Frequency		
			[MHz]	[Hz]	[ppm]
495.000	100	7.20	494.99981	-190	-0.38
	85	6.12	494.99981	-190	-0.38
	115	8.28	494.99981	-190	-0.38

Model Name	SC-580C, SC-581C
FCC ID	O78SC580C
Serial Number	SAMPLE4
Emission Type	16K0F3E
Channel Spacing	25[kHz]
Frequency	495.000[MHz]

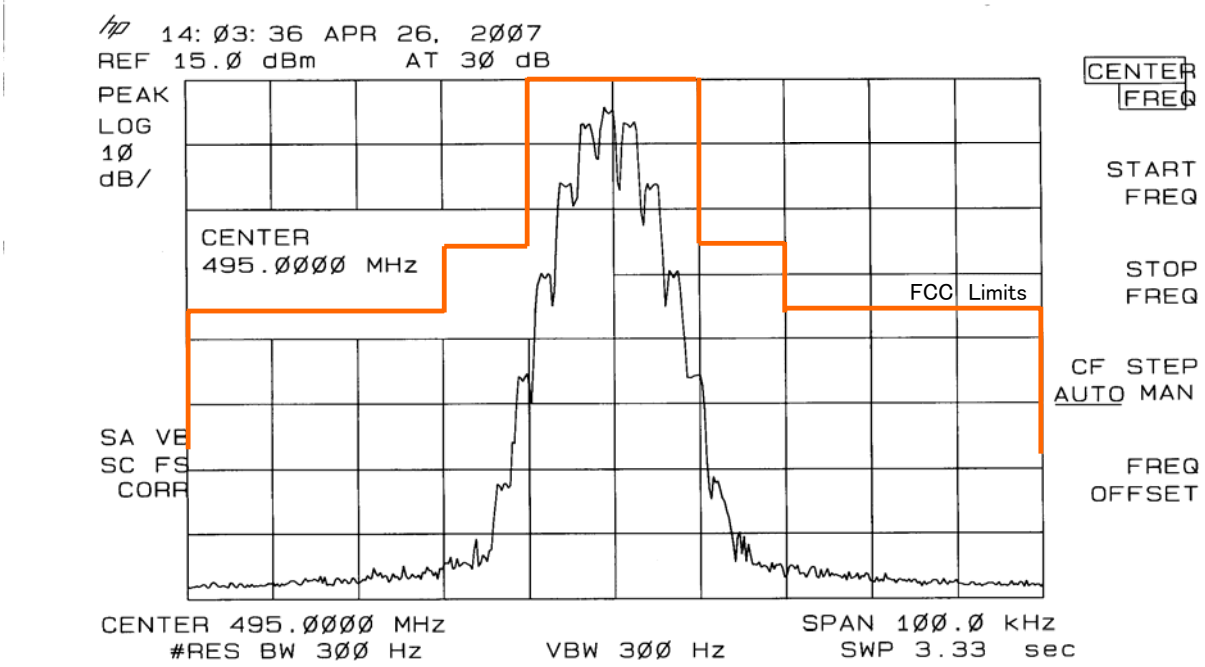
5. Occupied Bandwidth unmodulated (Paragraph 5)



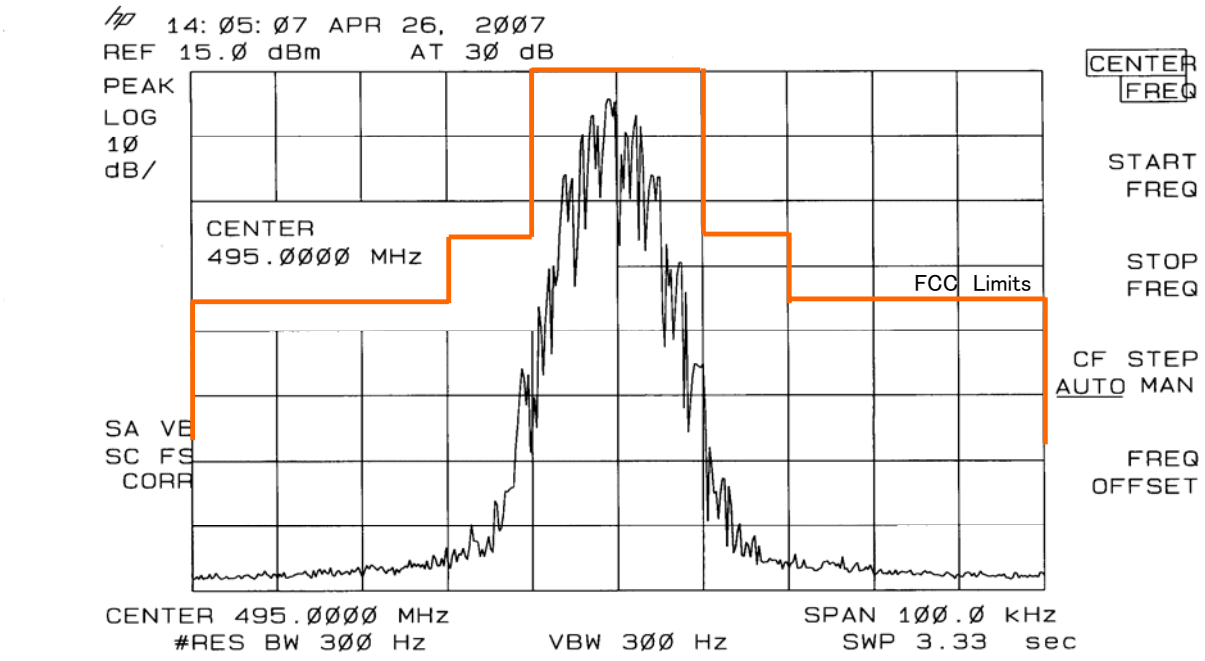
6. Occupied Bandwidth 2500Hz Sine Wave (Paragraph 6)



7. Occupied Bandwidth 2500Hz Sine Wave with CTCSS(250.3Hz) (Paragraph 7)



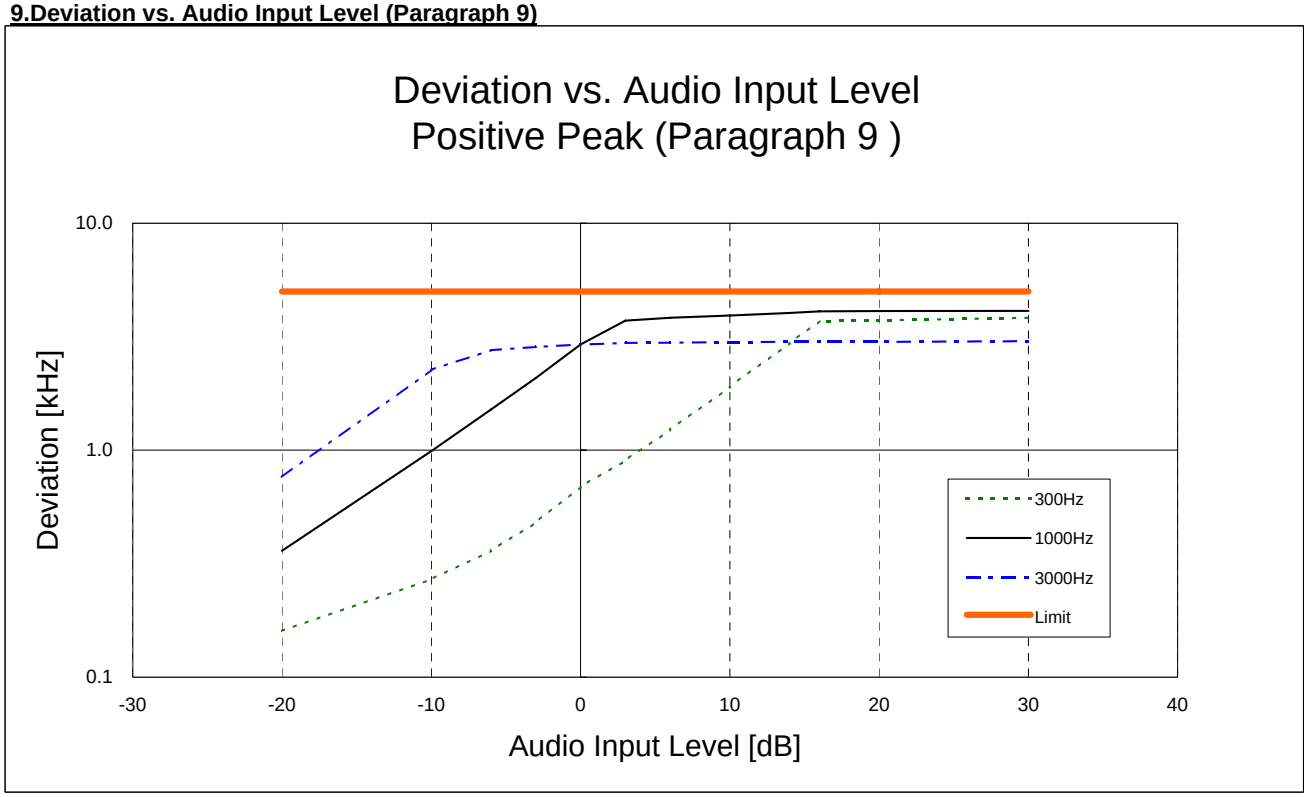
8. Occupied Bandwidth 2500Hz Sine Wave with DCS(023) (Paragraph 8)



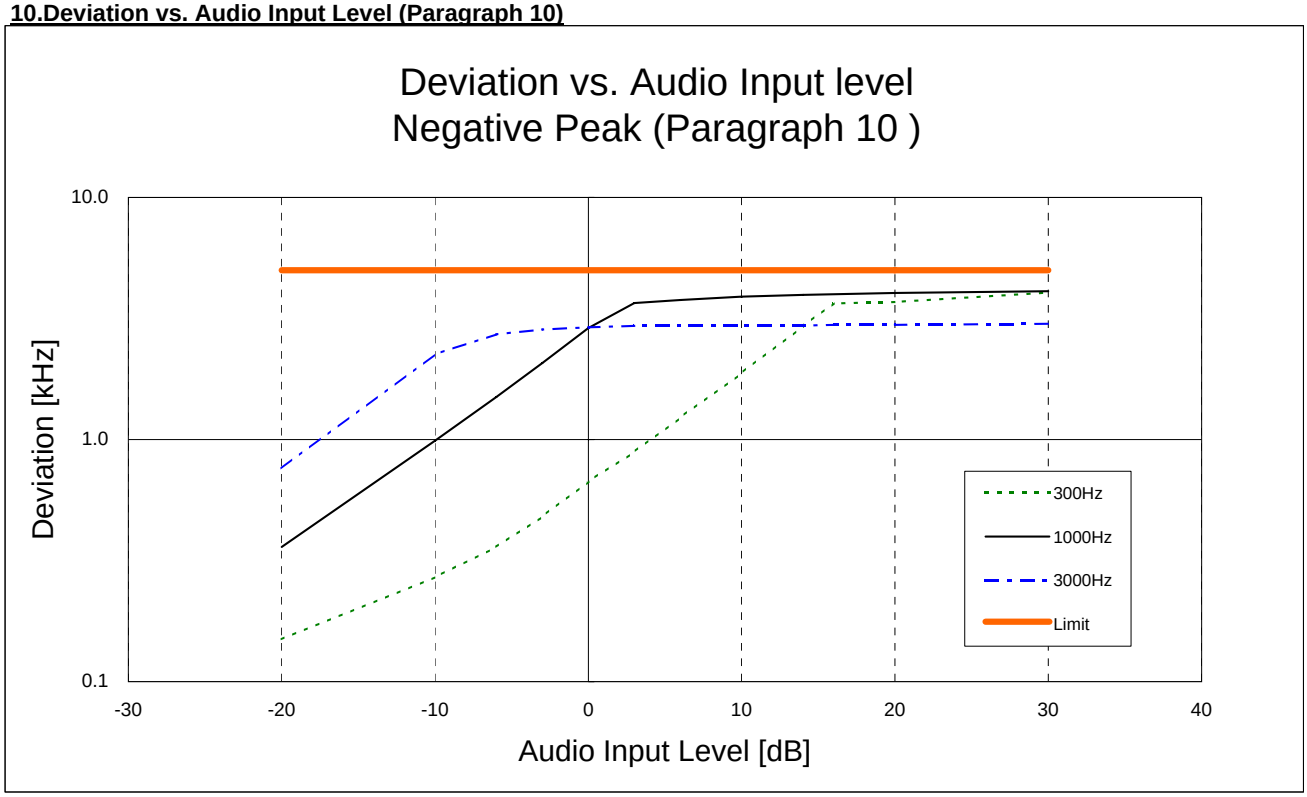
Model Name	SC-580C, SC-581C
FCC ID	O78SC580C
Serial Number	SAMPLE4
Emission Type	16K0F3E
Channel Spacing	25[kHz]
Frequency	495.000[MHz]

0dB =15.0[mV]

9.Deviation vs. Audio Input Level (Paragraph 9)



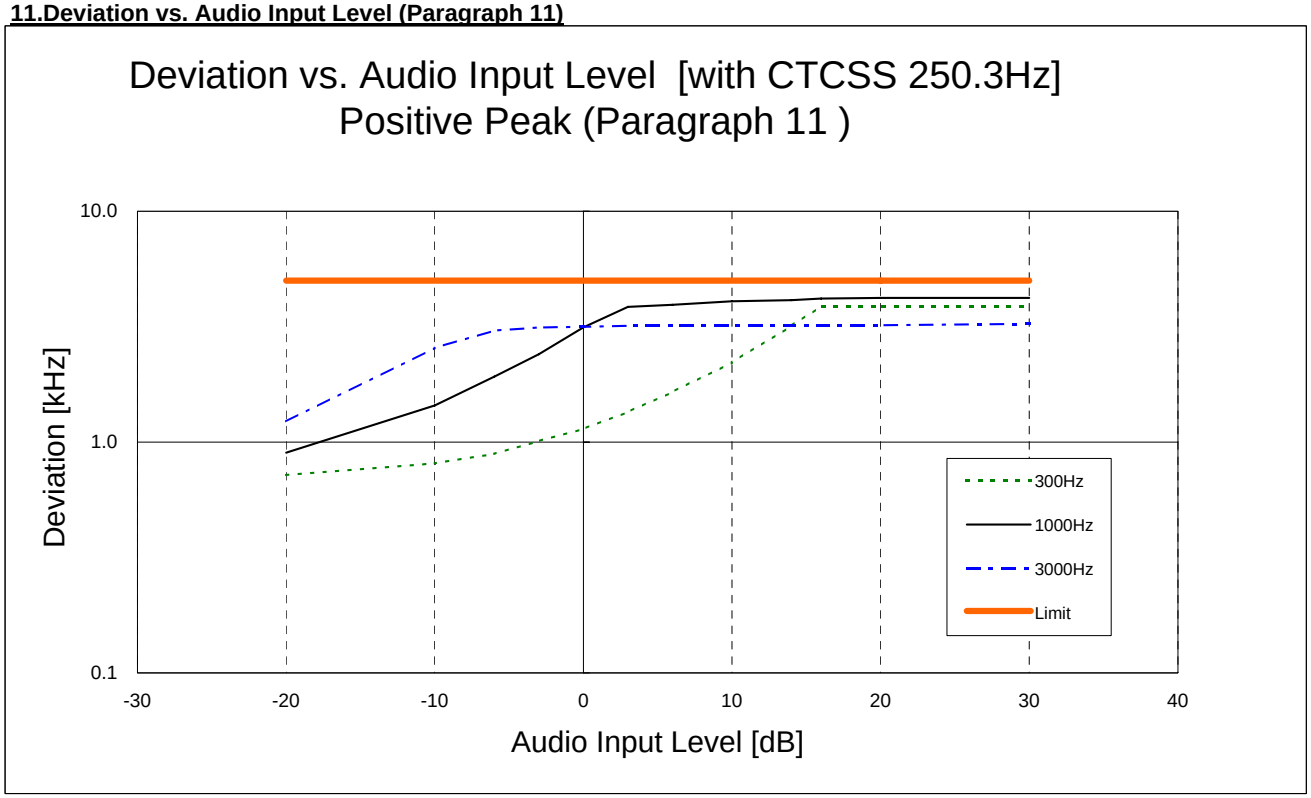
10.Deviation vs. Audio Input Level (Paragraph 10)



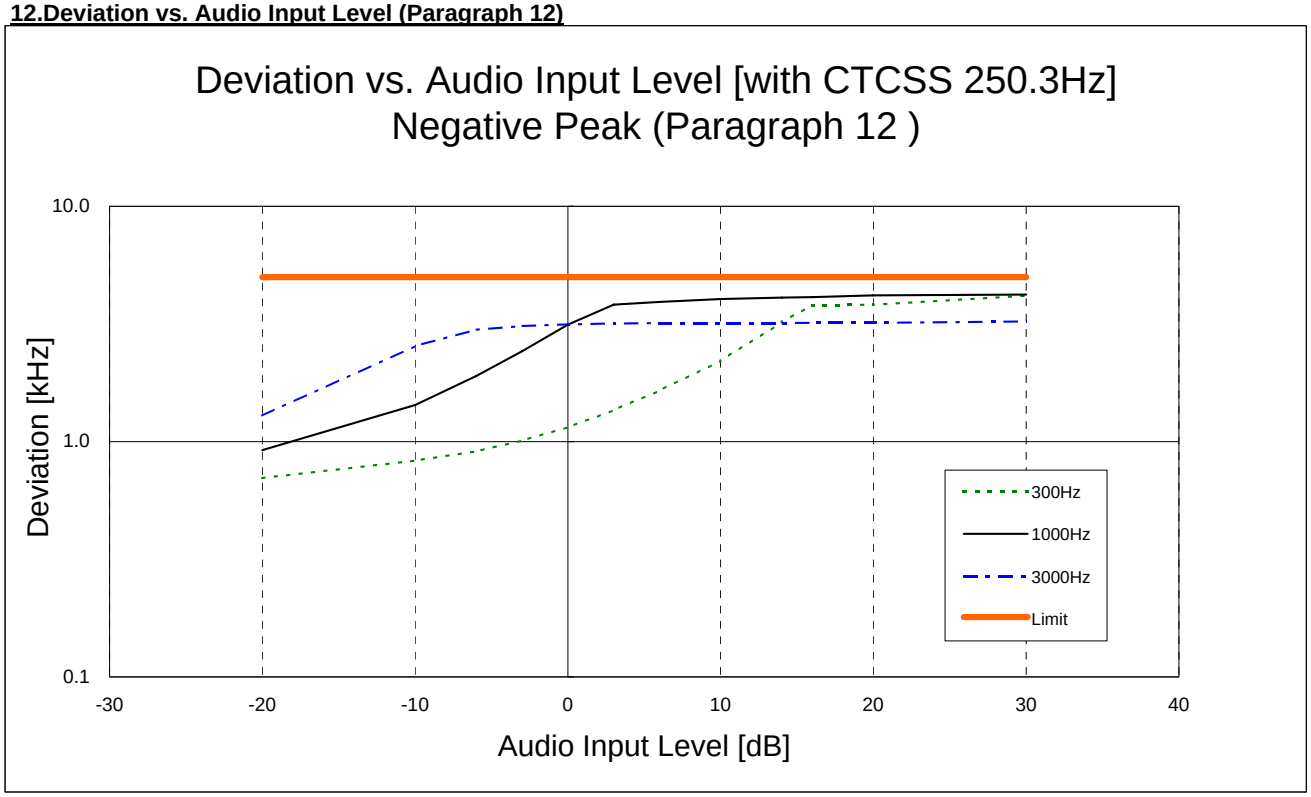
Model Name	SC-580C, SC-581C
FCC ID	O78SC580C
Serial Number	SAMPLE4
Emission Type	16K0F3E
Channel Spacing	25[kHz]
Frequency	495.000[MHz]

0dB =15.0[mV]

11.Deviation vs. Audio Input Level (Paragraph 11)



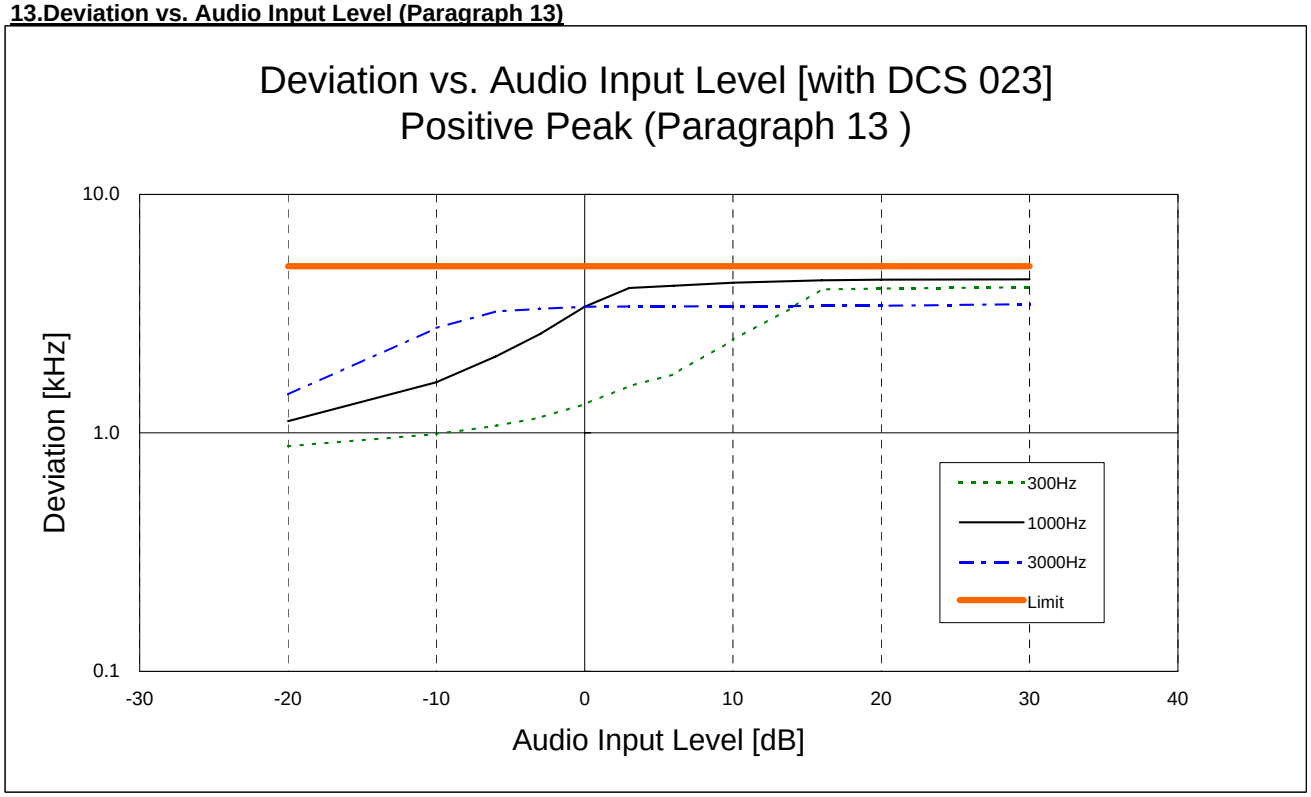
12.Deviation vs. Audio Input Level (Paragraph 12)



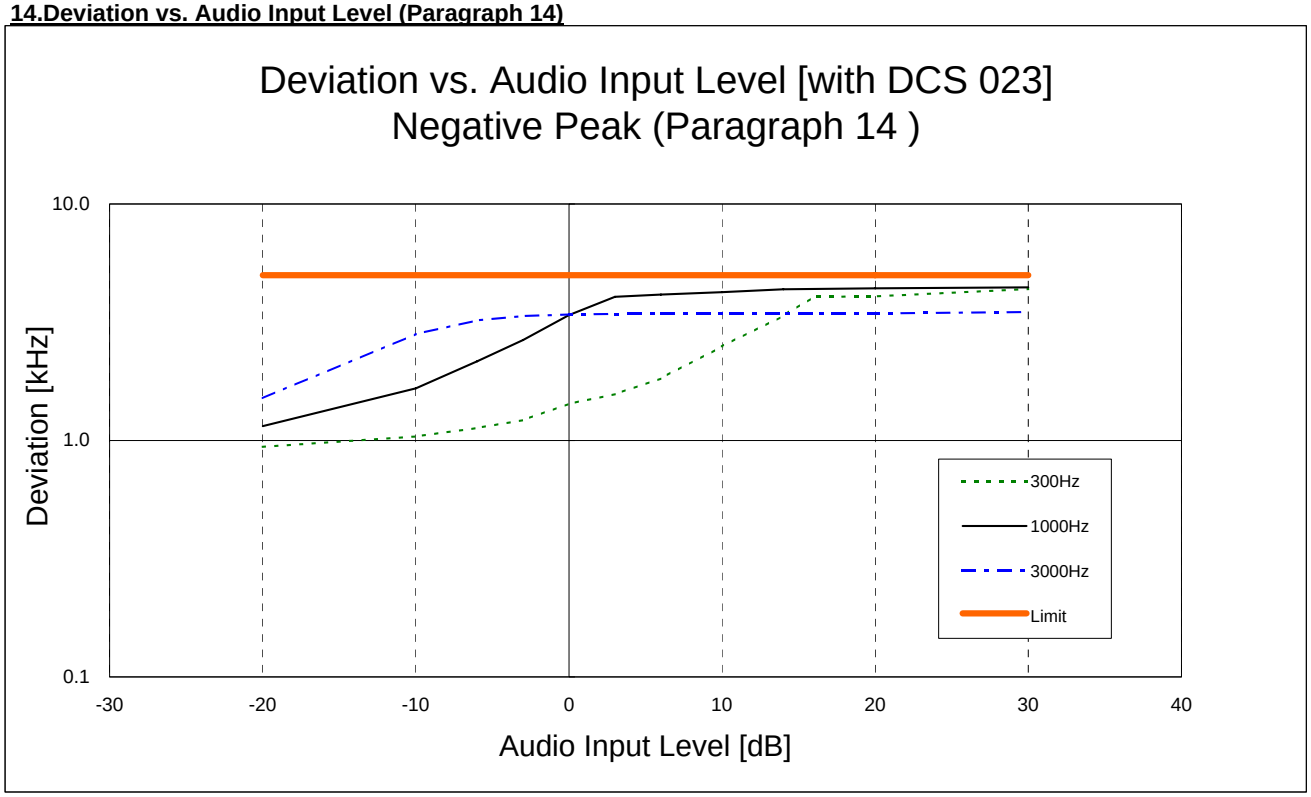
Model Name	SC-580C, SC-581C
FCC ID	O78SC580C
Serial Number	SAMPLE4
Emission Type	16K0F3E
Channel Spacing	25[kHz]
Frequency	495.000[MHz]

0dB =15.0[mV]

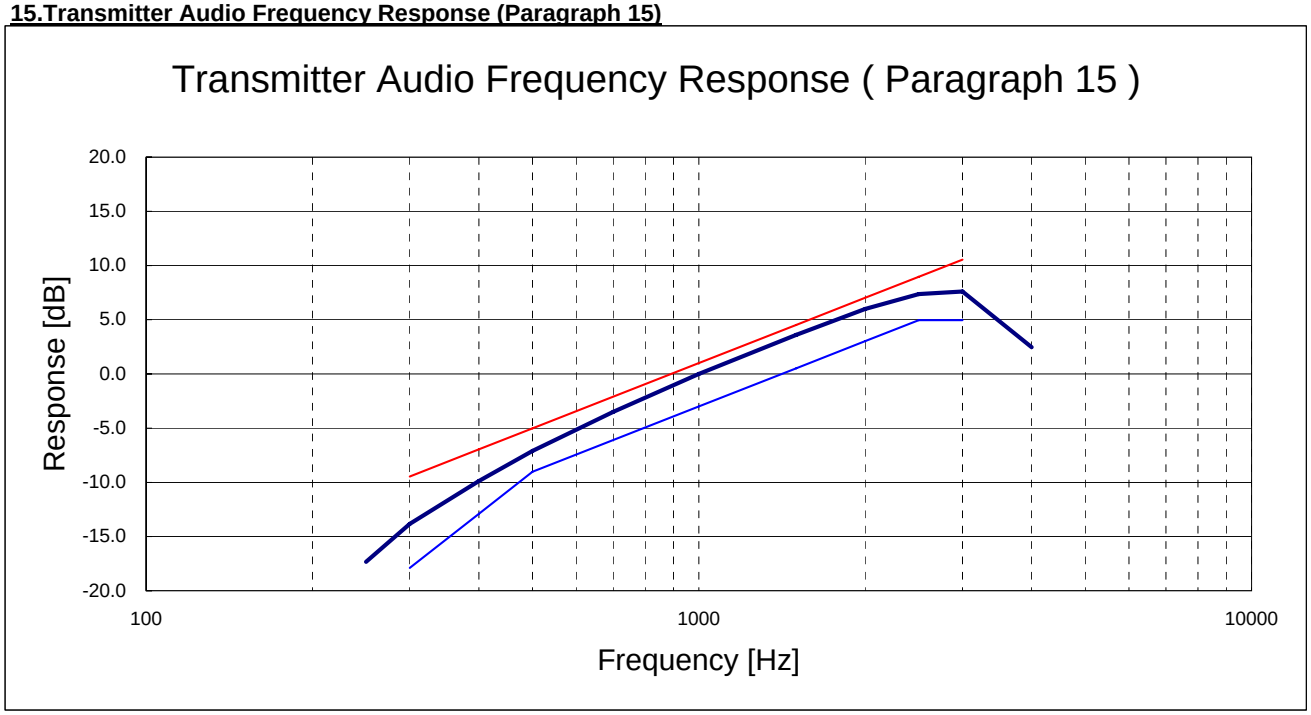
13.Deviation vs. Audio Input Level (Paragraph 13)



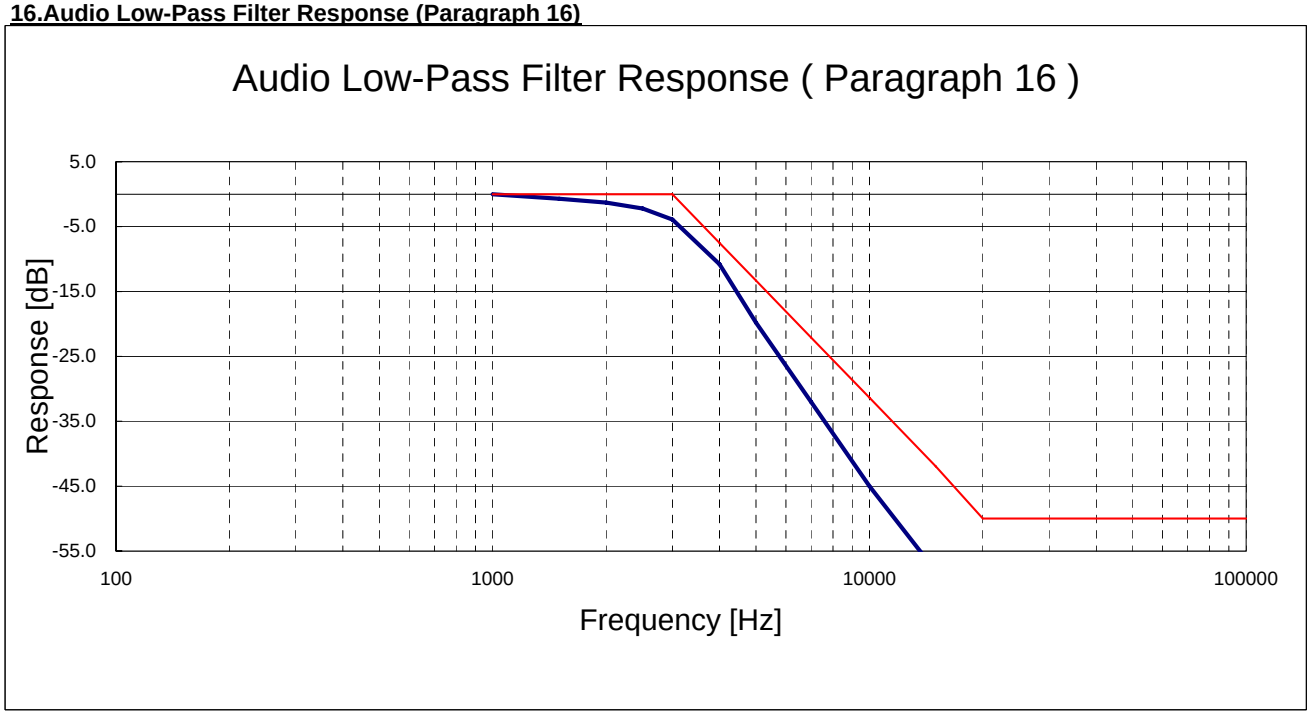
14.Deviation vs. Audio Input Level (Paragraph 14)



15.Transmitter Audio Frequency Response (Paragraph 15)

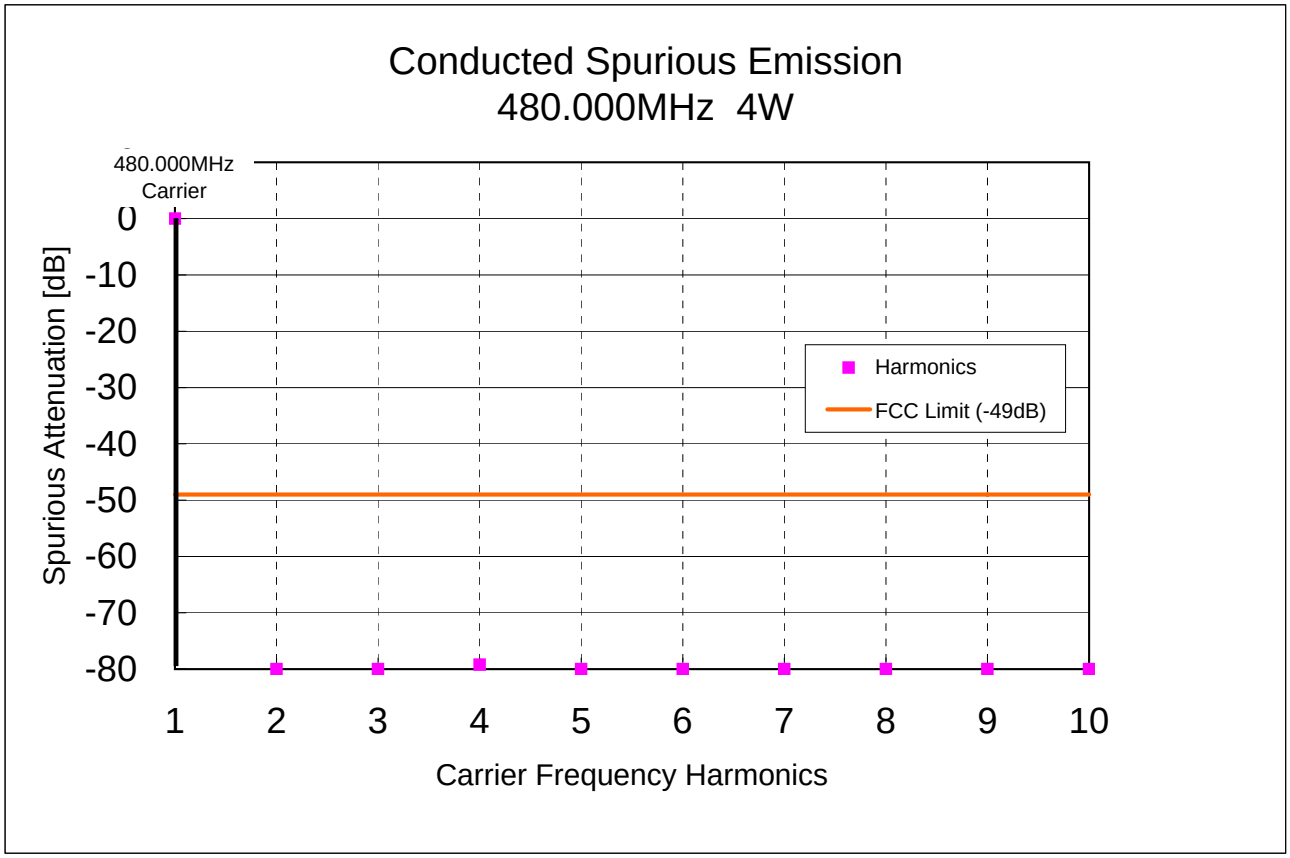


16.Audio Low-Pass Filter Response (Paragraph 16)



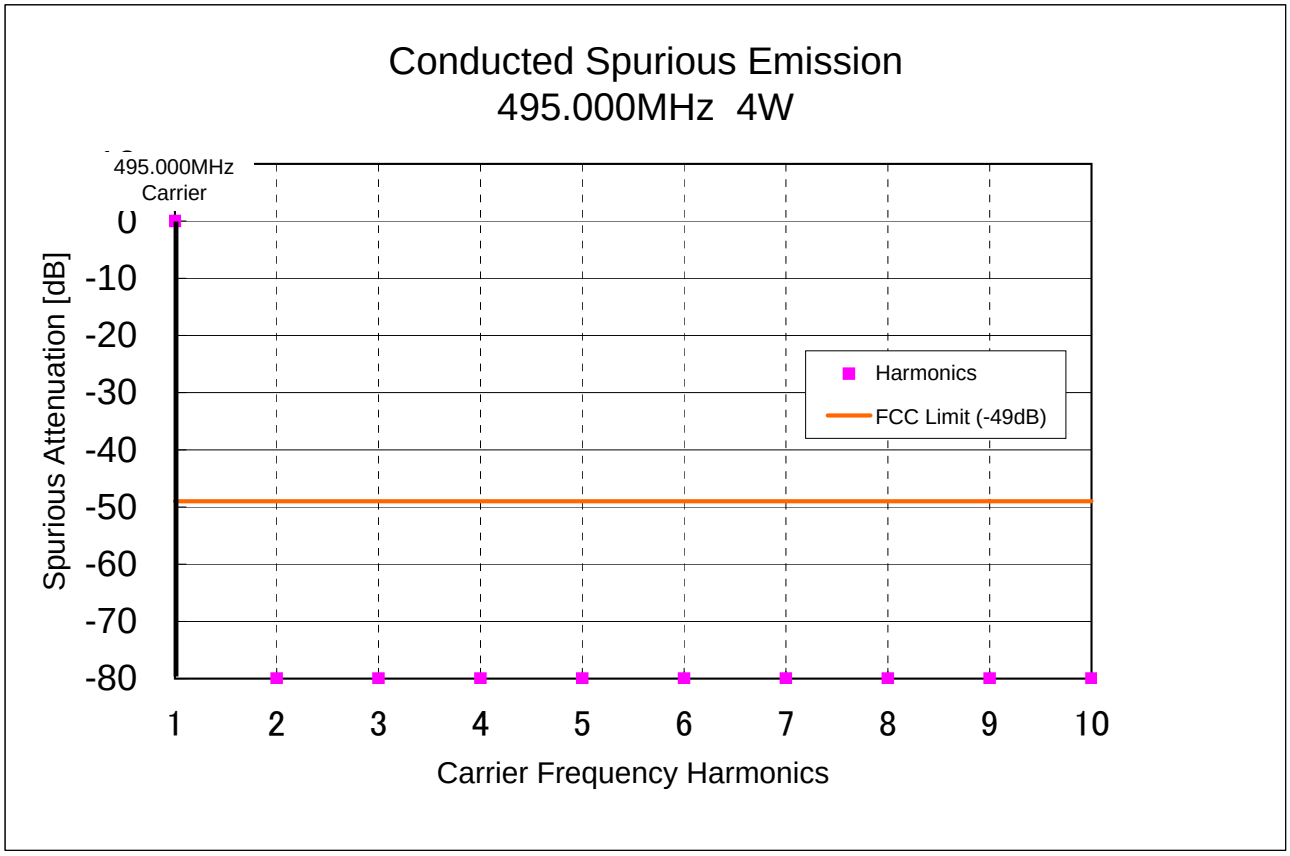
17.Conducted Spurious Emission, 480.000MHz@4W (PARAGRAPH 17)

Harmonics	Emission Frequency [MHz]	Spurious Attenuation [dB]	FCC Limit
1	480.000(Carrier)	0.0	-49.0
2	960.000	-80.0	-49.0
3	1440.000	-80.0	-49.0
4	1920.000	-79.2	-49.0
5	2400.000	-80.0	-49.0
6	2880.000	-80.0	-49.0
7	3360.000	-80.0	-49.0
8	3840.000	-80.0	-49.0
9	4320.000	-80.0	-49.0
10	4800.000	-80.0	-49.0



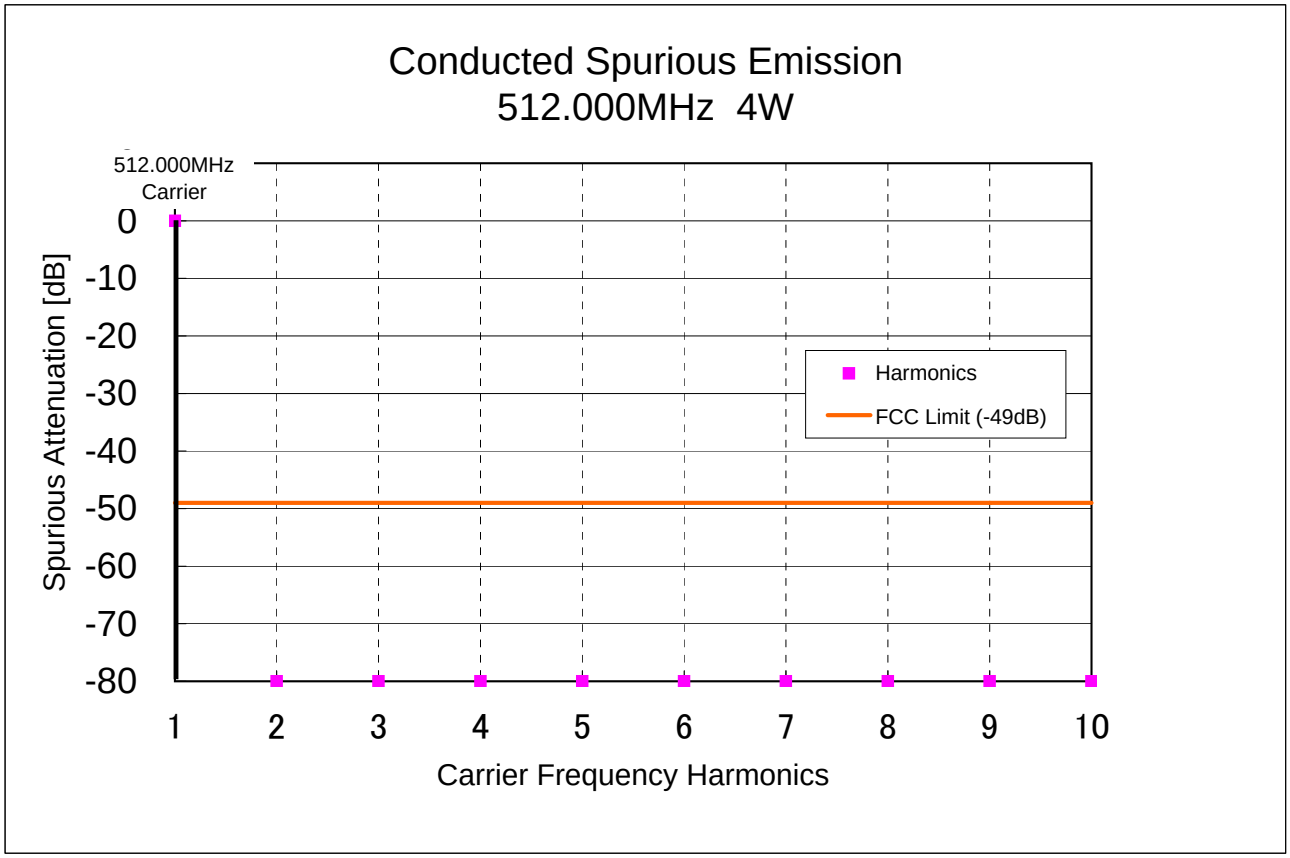
18.Conducted Spurious Emission, 495.000MHz@4W (PARAGRAPH 18)

Harmonics	Emission Frequency [MHz]	Spurious Attenuation [dB]	FCC Limit
1	495.000(Carrier)	0.0	-49.0
2	990.000	-80.0	-49.0
3	1485.000	-80.0	-49.0
4	1980.000	-80.0	-49.0
5	2475.000	-80.0	-49.0
6	2970.000	-80.0	-49.0
7	3465.000	-80.0	-49.0
8	3960.000	-80.0	-49.0
9	4455.000	-80.0	-49.0
10	4950.000	-80.0	-49.0



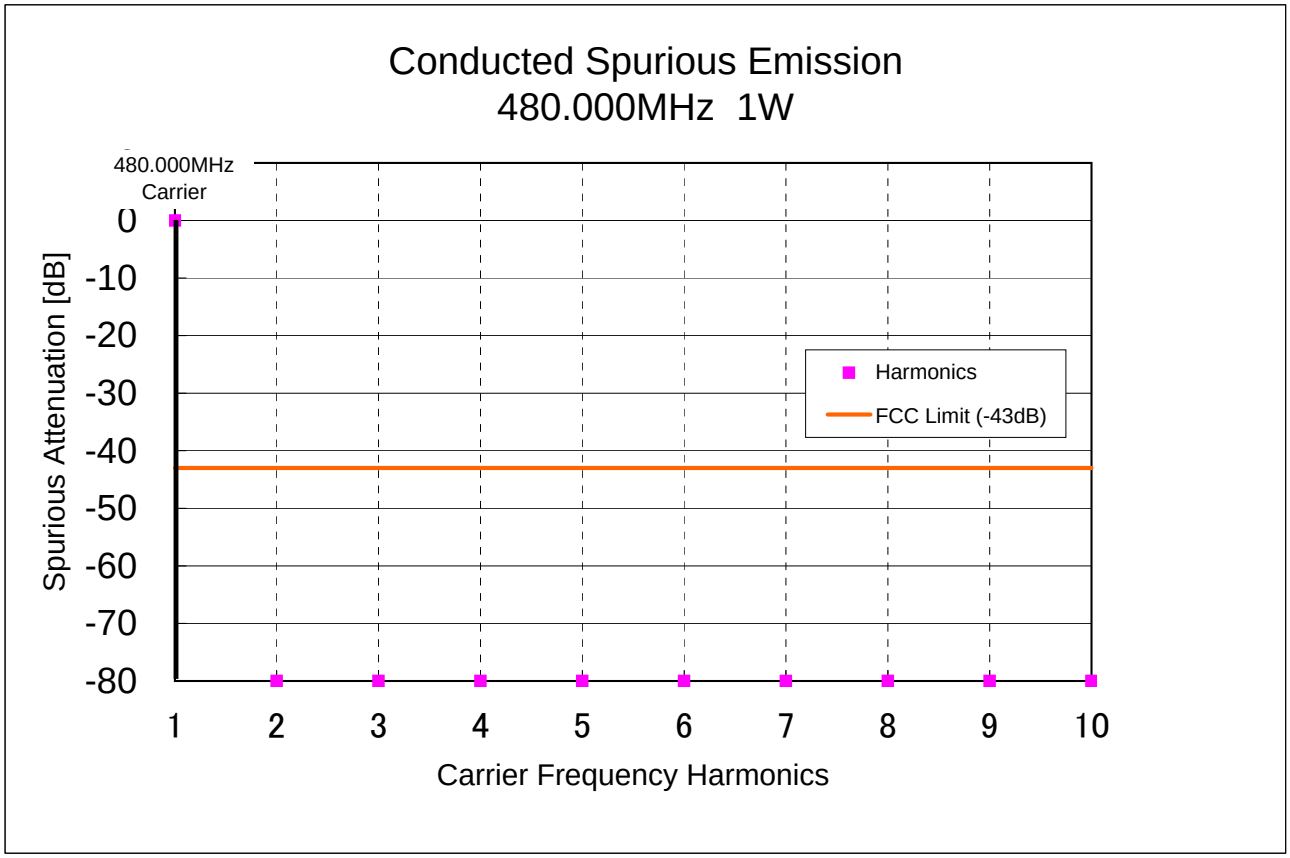
19.Conducted Spurious Emission, 512.000MHz@4W (PARAGRAPH 19)

Harmonics	Emission Frequency [MHz]	Spurious Attenuation [dB]	FCC Limit
1	512.000(Carrier)	0.0	-49.0
2	1024.000	-80.0	-49.0
3	1536.000	-80.0	-49.0
4	2048.000	-80.0	-49.0
5	2560.000	-80.0	-49.0
6	3072.000	-80.0	-49.0
7	3584.000	-80.0	-49.0
8	4096.000	-80.0	-49.0
9	4608.000	-80.0	-49.0
10	5120.000	-80.0	-49.0



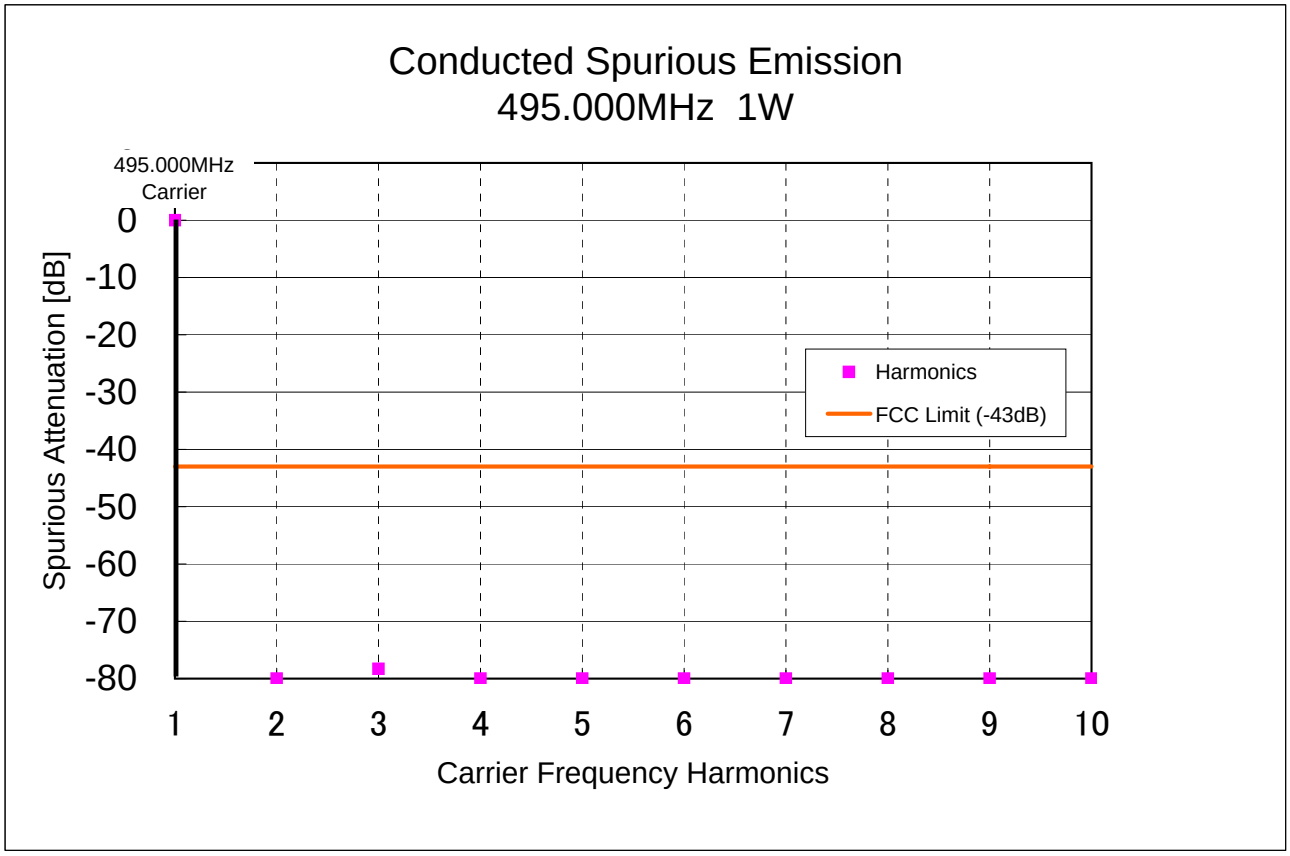
20.Conducted Spurious Emission, 480.000MHz@1W (PARAGRAPH 20)

Harmonics	Emission Frequency [MHz]	Spurious Attenuation [dB]	FCC Limit
1	480.000(Carrier)	0.0	-43.0
2	960.000	-80.0	-43.0
3	1440.000	-80.0	-43.0
4	1920.000	-80.0	-43.0
5	2400.000	-80.0	-43.0
6	2880.000	-80.0	-43.0
7	3360.000	-80.0	-43.0
8	3840.000	-80.0	-43.0
9	4320.000	-80.0	-43.0
10	4800.000	-80.0	-43.0



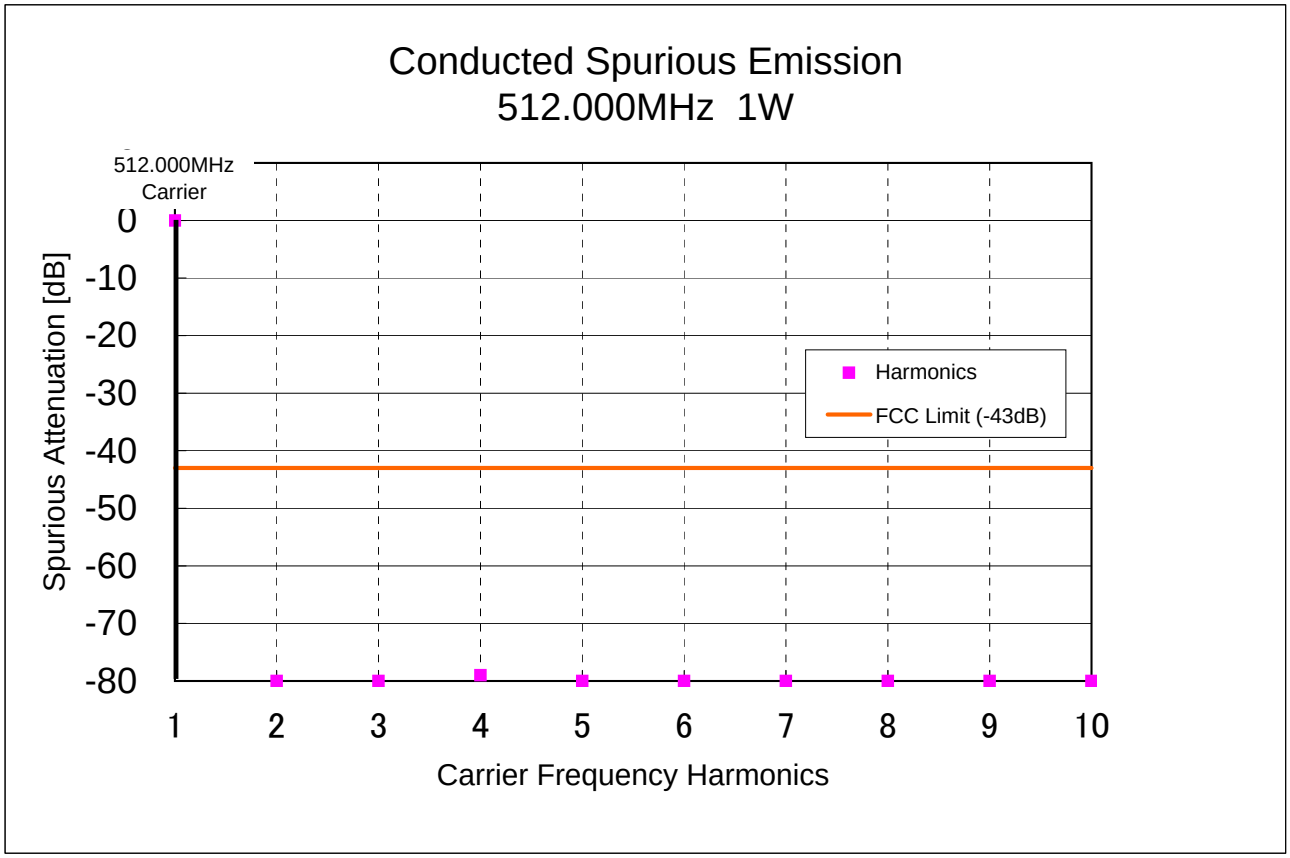
21.Conducted Spurious Emission, 495.000MHz@1W (PARAGRAPH 21)

Harmonics	Emission Frequency [MHz]	Spurious Attenuation [dB]	FCC Limit
1	495.000(Carrier)	0.0	-43.0
2	990.000	-80.0	-43.0
3	1485.000	-78.3	-43.0
4	1980.000	-80.0	-43.0
5	2475.000	-80.0	-43.0
6	2970.000	-80.0	-43.0
7	3465.000	-80.0	-43.0
8	3960.000	-80.0	-43.0
9	4455.000	-80.0	-43.0
10	4950.000	-80.0	-43.0



22.Conducted Spurious Emission, 512.000MHz@1W (PARAGRAPH 22)

Harmonics	Emission Frequency [MHz]	Spurious Attenuation [dB]	FCC Limit
1	512.000(Carrier)	0.0	-43.0
2	1024.000	-80.0	-43.0
3	1536.000	-80.0	-43.0
4	2048.000	-79.0	-43.0
5	2560.000	-80.0	-43.0
6	3072.000	-80.0	-43.0
7	3584.000	-80.0	-43.0
8	4096.000	-80.0	-43.0
9	4608.000	-80.0	-43.0
10	5120.000	-80.0	-43.0



Model Name SC-580C, SC-581C
FCC ID O78SC580C
Serial Number SAMPLE4
Emission Type 16K0F3E
Channel Spacing 25[kHz]
Frequency 495.050[MHz]

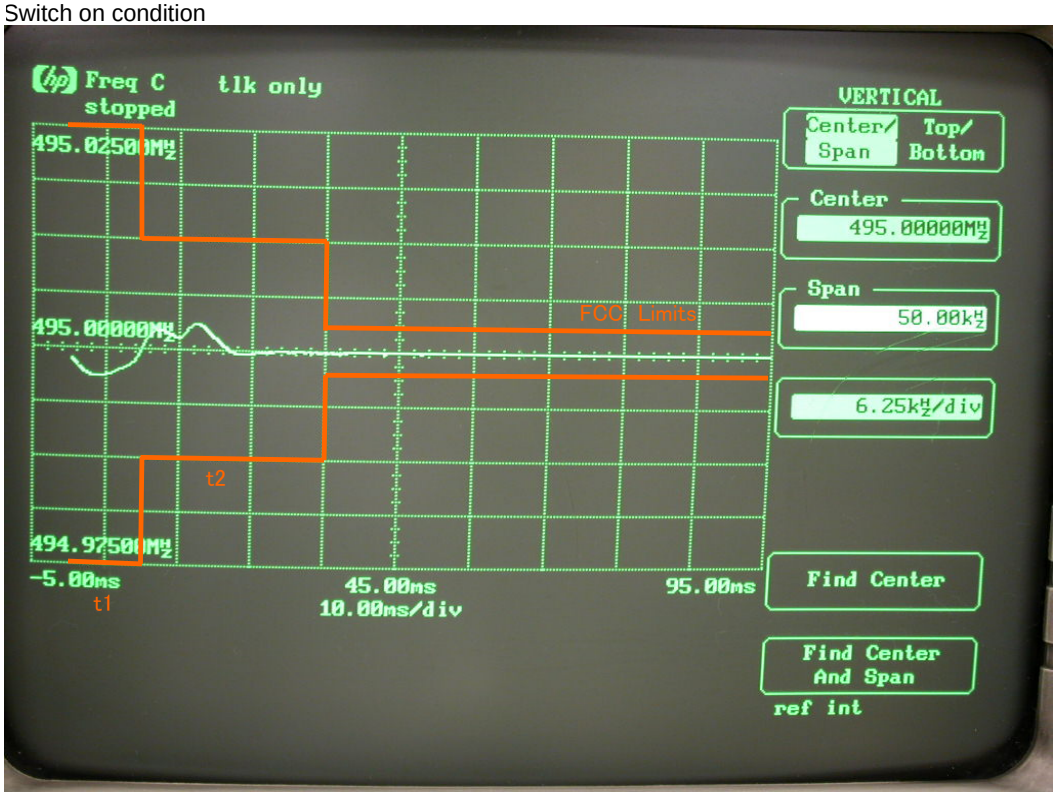
23.Conducted Spurious Emission @Receiver (Paragraph 23)

Frequency Tuned [MHz]	Frequency Emission [MHz]	Level [dBm]
495.050	450.100	-64.4
495.050	900.200	-79.0
495.050	1350.300	-70.4
495.050	1880.400	-79.1
495.050	2250.500	-82.0
495.050	2700.600	-79.9
495.050	3150.700	-76.3
495.050	3600.800	---
495.050	4050.900	---
495.050	4501.000	---

Model Name	SC-580C, SC-581C
FCC ID	O78SC580C
Serial Number	SAMPLE4
Emission Type	16K0F3E
Channel Spacing	25[kHz]
Frequency	495.000[MHz]

24.Transient Behavior (Paragraph 24)

Switch on condition



Switch off condition