



FCC TEST REPORT

REPORT NO.: 060313FIA01

MODEL NO.: CCB110

RECEIVED: Mar. 8, 2006

TESTED: Mar. 8 ~ Mar. 29, 2006

ISSUED: Mar. 30, 2006

APPLICANT: UNIGOLD INDUSTRIAL COMPANY

ADDRESS: FLAT A 2/F, EPOCH IND., BLDG., 8
CHEUNG HO STREET, TSING YT, N.T.HK

ISSUED BY: ADT (Shanghai) Corporation

ADDRESS: 2F, Building C, No.1618, Yishan Rd., 201103,
Shanghai, China

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ADT (Shanghai) Corporation



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1 CERTIFICATION

PRODUCT: SCA CAR CONVERTER
MODEL NO.: CCB110
APPLICANT: UNIGOLD INDUSTRIAL COMPANY
TESTED: Mar. 8 ~ Mar. 29, 2006
TEST ITEM: Engineering Sample
STANDARDS: FCC Part 15, Subpart C (Section 15.237),
 ANSI C63.4-2003

We, **ADT (Shanghai) Corporation**, declare that the equipment above has been tested in our facility and found compliance with the requirement limits of applicable standards. The test record, data evaluation and Equipment Under Test (EUT) configurations represented herein are true and accurate under the standards herein specified.

TECHNICAL

ACCEPTANCE : _____ , **DATE:** MAR. 30, 2006
Responsible for EMI Steven Qian
Engineering Supervisor

APPROVED BY : _____, **DATE:** MAR. 30, 2006
Director of Operations Wallace Pan
Director of Operations

2 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC Part 15, Subpart C			
STANDARD PARAGRAPH	TEST TYPE	RESULT	REMARK
15.207	Conducted Emission Test	N/A	Refer to 4.1.2
15.239	Radiated Emission Test (Mode 1, Previous data)	PASS	Minimum passing margin is -15.22dB at 265.230 MHz
	Radiated Emission Test (Mode 1, Debugging data)	PASS	Minimum passing margin is -16.42dB at 265.230 MHz
	Radiated Emission Test (Mode 2, Previous data)	PASS	Minimum passing margin is -1.46dB at 213.390 MHz
	Radiated Emission Test (Mode 2, Debugging data)	PASS	Minimum passing margin is -2.47dB at 213.580 MHz
	Radiated Emission Test (Mode 3, Previous data)	PASS	Minimum passing margin is -0.37dB at 215.840 MHz
	Radiated Emission Test (Mode 3, Debugging data)	PASS	Minimum passing margin is -1.34dB at 215.340 MHz
15.239(c)	Emission Bandwidth Test	PASS	Meet the requirements

NOTE: The information of measurement uncertainty is available upon the customer's request.

2.1 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4:

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$.

MEASUREMENT	FREQUENCY	UNCERTAINTY
Conducted emissions	9kHz ~ 30MHz	2.44 dB
Radiated emissions	30MHz ~ 200MHz	3.73 dB
	200MHz ~1000MHz	3.74 dB
	1GHz ~ 18GHz	2.20 dB
	18GHz ~ 40GHz	1.88 dB

3 GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	SCA CAR CONVERTER
MODEL NO.	CCB110
POWER SUPPLY	12Vdc
MODULATION TYPE	FM
CARRIER FREQUENCY OF EACH CHANNEL	88.1 ~ 88.9MHz, 106.7~107.9MHz
NUMBER OF CHANNELS	12
BANDWIDTH	200kHz
ANTENNA TYPE	Soldered on PCB
ANTENNA JOINT TYPE	80mm copper wire connected to PCB
DATA CABLE	N/A
I/O PORTS	N/A
ASSOCIATED DEVICES	N/A

NOTE: 1. The EUT is the SCA CAR CONVERTER.

2. The above EUT information was declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or User's Manual.

3.2 DESCRIPTION OF TEST MODES

Twelve channels are provided to this EUT.

Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)
1	88.1	5	88.9	9	107.3
2	88.3	6	106.7	10	107.5
3	88.5	7	106.9	11	107.7
4	88.7	8	107.1	12	107.9

NOTE: The channel 1, 6 and 12 were tested individually.

3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is the SCA CAR CONVERTER. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC Part 15, Subpart C (15.239)

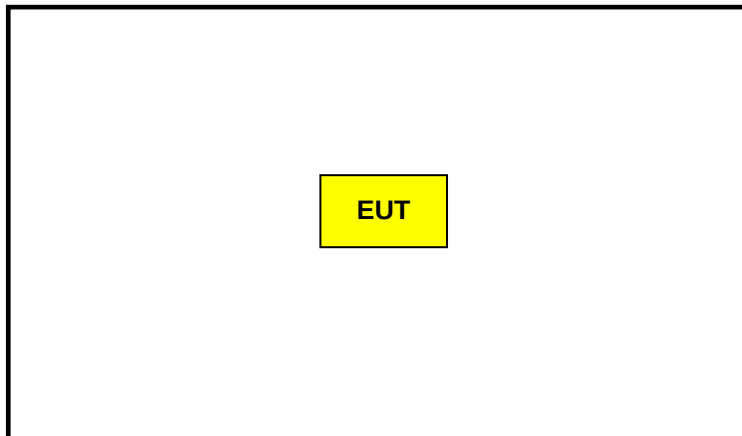
ANSI C63.4-2003

All test items have been performed and recorded as per the above standards.

3.4 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit.

3.5 CONFIGURATION OF SYSTEM UNDER TEST



4 TEST TYPES AND RESULTS

4.1. CONDUCTED EMISSION MEASUREMENT

4.1.1. LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY OF EMISSION (MHz)	CONDUCTED LIMIT (dB μ V)	
	Quasi-peak	Average
0.15 - 0.5	66 - 56	56 - 46
0.50 - 5.0	56	46
5.0 - 30.0	60	50

- NOTES:** (1) The lower limit shall apply at the transition frequencies.
(2) The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50 MHz.
(3) All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

4.1.2. TEST RESULTS

Since the EUT neither has AC port nor intends to be connected to the AC power source and is powered by the vehicle battery, so the test item is not applicable.

4.2 RADIATED EMISSION MEASUREMENT

4.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

According to 15.239 the field strength of emissions from intentional radiators operated under these frequencies bands shall not exceed the following:

Fundamental Frequency (MHz)	Field Strength of Fundamental (dBuV/m)	
	Peak	Average
88 to 108	67.96	47.96

Emissions radiated outside of the specified bands, shall be according to the general radiated limits in 15.209 as following:

Frequencies (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

As shown in 15.35(b), for frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.

4.2.2 TEST INSTRUMENT

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
Test Receiver ROHDE & SCHWARZ	ESCS30	E1R1001	Apr. 19, 2006
BILOG Antenna SCHWARZBECK	VULB9168	E1A1001	Sep. 26, 2006
Preamplifier Agilent	8447D	E1A2001	Jan. 27, 2007
Preamplifier Agilent	8449B	E1A2002	Jan. 27, 2007
Double Ridged Broadband Horn Antenna Schwarzbeck	BBHA 9120D	E1A1002	Feb.15, 2007
*Spectrum Analyzer Agilent	E4403B	E1S1001	Jan. 13, 2007
*Spectrum Analyzer ROHDE & SCHWARZ	FSP30	E1S1002	May. 15,2006
RF signal cable Woken	RG-402	E1CBH01	May. 30, 2006
RF signal cable Woken	RG-402	E1CBH02	May. 30, 2006
RF signal cable Woken	RG-402	E1CBH03	May. 30, 2006
RF signal cable Woken	RG-412	E1CBL02	May. 30, 2006
RF signal cable Woken	RG-412	E1CBL03	May. 30, 2006
RF signal cable Woken	RG-412	E1CBL04	May. 30, 2006
Software ADT	ADT_Radiated_V7.5	N/A	N/A

- NOTE:**
1. The calibration interval of the above test instruments is 12 months.
 2. "*" = These equipment are used for the final measurement.
 3. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
 4. The Spectrum Analyzer (model: FSP30) and RF signal cable (SERIAL: E1CBH02&E1CBH03) are used only for the measurement of emission frequency above 2GHz if tested.

4.2.3 TEST PROCEDURE

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 10 meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was 10 dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10 dB margin would be re-tested one by one using the quasi-peak method or average method as specified and then reported in Data sheet peak mode and QP mode.

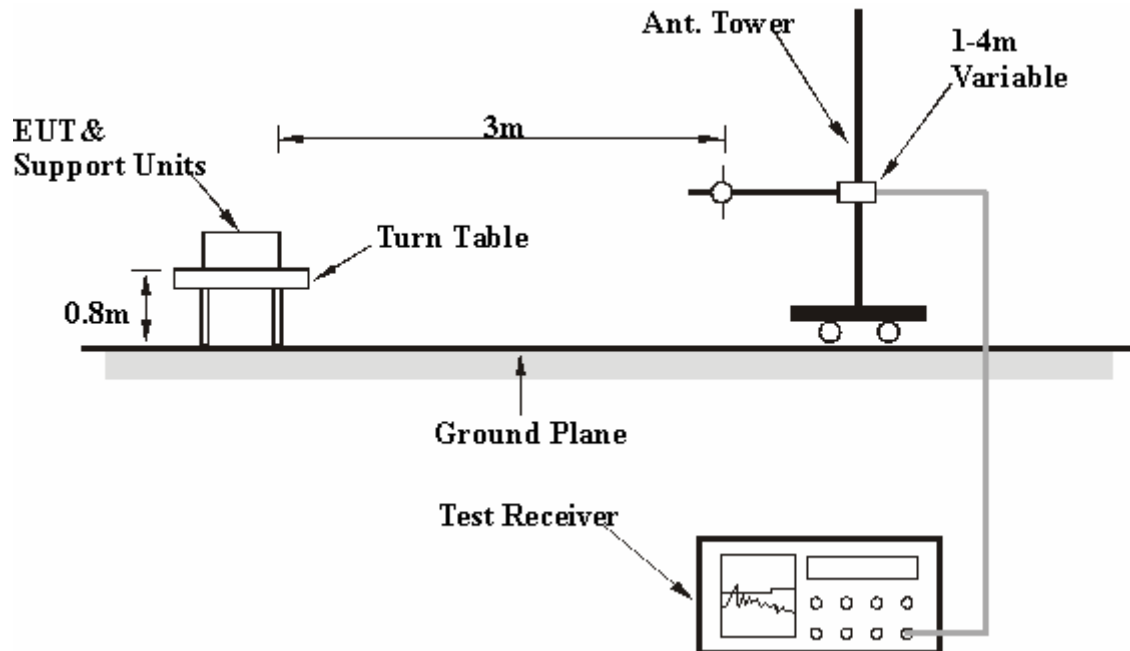
NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Peak detection (PK) and Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1 MHz for Peak detection at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 10 Hz for Average detection (AV) at frequency above 1GHz.

4.2.4 DEVIATION FROM TEST STANDARD

No deviation

4.2.5 TEST SETUP



For the actual test configuration, please refer to the related item in this test report - Photographs of the Test Configuration.

4.2.6 EUT OPERATING CONDITION

- Put the EUT on the centre of the test table and power it on.
- Adjust the working frequency and pull out the antenna to the maximum length.

4.2.7 TEST RESULT

PREVIOUS DATA

EUT	SCA CAR CONVERTER	MODEL NO.	CCB110
CHANNEL	1	INPUT POWER	12 Vdc
FREQUENCY RANGE	Below 1000 MHz	DETECTOR FUNCTION & BANDWIDTH	Peak(PK) Average (AV) Quasi-Peak
ENVIRONMENTAL CONDITIONS	21 deg. C, 76 % RH, 1005 hPa	TESTED BY: BRIGHT	

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Factor (dB/M)	Reading (dBuV/M)	Emission (dBuV/M)	Limit (dBuV/M)	Margin (dB)	Ant. Height (cm)	Table Angle (Deg.)
1*	88.100 PK	11.73	36.09	47.82	68.00	-20.18	107.00	64.00
1*	88.100 AV	11.73	17.38	29.11	48.00	-18.89	107.00	64.00
2	175.500 QP	15.30	3.77	19.07	43.50	-24.43	305.00	273.00
3	265.230 QP	15.32	15.46	30.78	46.00	-15.22	301.00	269.00
4	350.100 QP	17.47	7.39	24.86	46.00	-21.14	240.00	321.00
5	439.820 QP	19.86	7.90	27.76	46.00	-18.24	240.00	23.00
6	529.550 QP	21.52	-0.11	21.41	46.00	-24.59	213.00	156.00
7	624.120 QP	23.58	-1.25	22.33	46.00	-23.67	115.00	250.00

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Factor (dB/M)	Reading (dBuV/M)	Emission (dBuV/M)	Limit (dBuV/M)	Margin (dB)	Ant. Height (cm)	Table Angle (Deg.)
1*	88.100 PK	11.73	34.30	46.03	68.00	-21.97	123.00	124.00
1*	88.100 AV	11.73	15.36	27.09	48.00	-20.91	123.00	124.00
2	175.500 QP	15.30	8.50	23.80	43.50	-19.70	100.00	149.00
3	265.230 QP	15.32	9.81	25.13	46.00	-20.87	112.00	165.00
4	350.100 QP	17.47	3.78	21.25	46.00	-24.75	107.00	230.00
5	439.820 QP	19.86	0.31	20.17	46.00	-25.83	105.00	76.00
6	529.550 QP	21.52	0.91	22.43	46.00	-23.57	106.00	89.00
7	616.850 QP	23.45	1.16	24.61	46.00	-21.39	100.00	123.00

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB).
 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. "*" = Fundamental frequency.

EUT	SCA CAR CONVERTER	MODEL NO.	CCB110
CHANNEL	6	INPUT POWER	12 Vdc
FREQUENCY RANGE	Below 1000 MHz	DETECTOR FUNCTION & BANDWIDTH	Peak(PK) Average (AV) Quasi-Peak
ENVIRONMENTAL CONDITIONS	21 deg. C, 76 % RH, 1005 hPa	TESTED BY: BRIGHT	

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Factor (dB/M)	Reading (dBuV/M)	Emission (dBuV/M)	Limit (dBuV/M)	Margin (dB)	Ant. Height (cm)	Table Angle (Deg.)
1*	106.700 PK	13.23	48.62	61.85	68.00	-6.15	291.00	189.00
1*	106.700 AV	13.23	33.27	46.50	48.00	-1.50	291.00	189.00
2	213.390 QP	13.37	28.67	42.04	43.50	-1.46	153.00	306.00
3	320.120 QP	17.02	22.01	39.03	46.00	-6.97	100.00	64.00
4	426.770 QP	19.53	16.03	35.56	46.00	-10.44	100.00	19.00
5	533.410 QP	21.62	3.04	24.66	46.00	-21.34	99.00	18.00
6	640.120 QP	23.78	7.61	31.39	46.00	-14.61	99.00	183.00
7	746.910 QP	25.30	4.48	29.78	46.00	-16.22	119.00	346.00

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Factor (dB/M)	Reading (dBuV/M)	Emission (dBuV/M)	Limit (dBuV/M)	Margin (dB)	Ant. Height (cm)	Table Angle (Deg.)
1*	106.700 PK	13.23	45.92	59.15	68.00	-8.85	99.00	143.00
1*	106.700 AV	13.23	32.24	45.47	48.00	-2.53	199.00	97.00
2	213.400 QP	13.37	22.96	36.32	43.50	-7.18	100.00	300.00
3	320.110 QP	17.02	18.07	35.09	46.00	-10.91	151.00	118.00
4	426.740 QP	19.52	20.02	39.55	46.00	-6.45	123.00	171.00
5	533.440 QP	21.62	13.15	34.78	46.00	-11.22	109.00	19.00
6	640.250 QP	23.78	5.33	29.11	46.00	-16.89	126.00	23.00
7	762.350 QP	25.47	-8.07	17.40	46.00	-28.60	99.00	59.00

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB).
 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. "*" = Fundamental frequency.

EUT	SCA CAR CONVERTER	MODEL NO.	CCB110
CHANNEL	12	INPUT POWER	12 Vdc
FREQUENCY RANGE	Below 1000 MHz	DETECTOR FUNCTION & BANDWIDTH	Peak(PK) Average (AV) Quasi-Peak
ENVIRONMENTAL CONDITIONS	21 deg. C, 76 % RH, 1005 hPa	TESTED BY: BRIGHT	

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Factor (dB/M)	Reading (dBuV/M)	Emission (dBuV/M)	Limit (dBuV/M)	Margin (dB)	Ant. Height (cm)	Table Angle (Deg.)
1*	107.900 PK	13.35	48.62	61.97	68.00	-6.03	291.00	189.00
1*	107.900 AV	13.35	32.92	46.27	48.00	-1.73	291.00	189.00
2	215.840 QP	13.55	29.58	43.13	43.50	-0.37	162.00	306.00
3	323.730 QP	17.11	21.83	38.94	46.00	-7.06	99.00	349.00
4	431.590 QP	19.65	15.54	35.19	46.00	-10.81	99.00	20.00
5	539.420 QP	21.78	7.79	29.57	46.00	-16.43	100.00	159.00
6	647.350 QP	23.86	9.02	32.88	46.00	-13.12	134.00	355.00
7	755.250 QP	25.39	2.67	28.06	46.00	-17.94	110.00	346.00

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Factor (dB/M)	Reading (dBuV/M)	Emission (dBuV/M)	Limit (dBuV/M)	Margin (dB)	Ant. Height (cm)	Table Angle (Deg.)
1*	107.600 PK	13.35	45.92	59.27	68.00	-8.73	199.00	97.00
1*	107.900 AV	13.35	29.05	42.40	48.00	-5.60	199.00	97.00
2	215.800 QP	13.54	21.34	34.89	43.50	-8.61	100.00	291.00
3	323.770 QP	17.11	20.02	37.13	46.00	-8.87	146.00	0.00
4	431.640 QP	19.65	16.57	36.22	46.00	-9.78	105.00	19.00
5	539.400 QP	21.78	15.87	37.65	46.00	-8.35	99.00	351.00
6	648.370 QP	23.87	-2.15	21.72	46.00	-24.28	99.00	313.00
7	738.100 QP	25.22	-2.30	22.92	46.00	-23.08	99.00	242.00

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB).
 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. "*" = Fundamental frequency.

TEST DATA AFTER DEBUGGING

EUT	SCA CAR CONVERTER	MODEL NO.	CCB110
CHANNEL	1	INPUT POWER	12 Vdc
FREQUENCY RANGE	Below 1000 MHz	DETECTOR FUNCTION & BANDWIDTH	Peak(PK) Average (AV) Quasi-Peak
ENVIRONMENTAL CONDITIONS	21 deg. C, 76 % RH, 1005 hPa	TESTED BY: BRIGHT	

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Factor (dB/M)	Reading (dBuV/M)	Emission (dBuV/M)	Limit (dBuV/M)	Margin (dB)	Ant. Height (cm)	Table Angle (Deg.)
1*	88.20 PK	11.73	34.80	46.53	68.00	-21.47	107.00	64.00
1*	88.20 AV	11.73	16.38	28.11	48.00	-19.89	107.00	64.00
2	175.50 QP	15.30	1.77	17.07	43.50	-26.43	305.00	273.00
3	265.23 QP	15.32	14.26	29.58	46.00	-16.42	301.00	269.00
4	350.00 QP	17.47	5.96	23.43	46.00	-22.57	240.00	321.00
5	439.87 QP	19.86	6.12	25.98	46.00	-20.02	240.00	23.00
6	528.98 QP	21.51	-1.02	20.49	46.00	-25.51	213.00	156.00
7	624.12 QP	23.58	-3.09	20.49	46.00	-25.51	115.00	250.00

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Factor (dB/M)	Reading (dBuV/M)	Emission (dBuV/M)	Limit (dBuV/M)	Margin (dB)	Ant. Height (cm)	Table Angle (Deg.)
1*	88.20 PK	11.73	34.34	46.07	68.00	-21.93	123.00	124.00
1*	88.20 AV	11.73	15.36	27.09	48.00	-20.10	123.00	124.00
2	175.48 QP	15.30	8.50	23.80	43.50	-19.70	100.00	149.00
3	263.27 QP	15.24	9.39	24.63	46.00	-21.37	112.00	165.00
4	350.10 QP	17.47	4.02	21.49	46.00	-24.51	107.00	230.00
5	439.82 QP	19.86	1.37	21.23	46.00	-24.77	105.00	76.00
6	529.48 QP	21.52	-0.50	21.02	46.00	-24.98	106.00	89.00
7	616.85 QP	23.45	-1.08	22.37	46.00	-23.63	100.00	123.00

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB).
 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. "*" = Fundamental frequency.

EUT	SCA CAR CONVERTER	MODEL NO.	CCB110
CHANNEL	6	INPUT POWER	12 Vdc
FREQUENCY RANGE	Below 1000 MHz	DETECTOR FUNCTION & BANDWIDTH	Peak(PK) Average (AV) Quasi-Peak
ENVIRONMENTAL CONDITIONS	21 deg. C, 76 % RH, 1005 hPa	TESTED BY: BRIGHT	

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Factor (dB/M)	Reading (dBuV/M)	Emission (dBuV/M)	Limit (dBuV/M)	Margin (dB)	Ant. Height (cm)	Table Angle (Deg.)
1*	106.70 PK	13.23	46.25	59.48	68.00	-8.52	291.00	189.00
1*	106.70 AV	13.23	31.36	44.59	48.00	-3.41	291.00	189.00
2	213.58 QP	13.38	27.65	41.03	43.50	-2.47	153.00	306.00
3	320.56 QP	17.03	21.60	38.63	46.00	-7.37	100.00	64.00
4	426.47 QP	19.52	14.97	34.49	46.00	-11.51	100.00	19.00
5	532.89 QP	21.61	2.17	23.78	46.00	-22.22	99.00	18.00
6	639.86 QP	23.77	6.99	30.76	46.00	-15.24	99.00	183.00
7	746.47 QP	25.30	3.36	28.66	46.00	-17.34	119.00	346.00

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Factor (dB/M)	Reading (dBuV/M)	Emission (dBuV/M)	Limit (dBuV/M)	Margin (dB)	Ant. Height (cm)	Table Angle (Deg.)
1*	106.70 PK	13.23	45.56	58.79	68.00	-9.21	99.00	143.00
1*	106.70 AV	13.23	30.56	43.79	48.00	-4.21	199.00	97.00
2	213.79 QP	13.40	22.39	35.79	43.50	-7.71	100.00	300.00
3	320.46 QP	17.03	17.76	34.79	46.00	-11.21	151.00	118.00
4	426.46 QP	19.52	19.81	39.33	46.00	-6.67	123.00	171.00
5	533.89 QP	21.63	12.06	33.69	46.00	-12.31	109.00	19.00
6	640.76 QP	23.78	5.98	29.76	46.00	-16.24	126.00	23.00
7	761.70 QP	25.47	-7.43	18.04	46.00	-27.96	99.00	59.00

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB).
 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. "*" = Fundamental frequency.

EUT	SCA CAR CONVERTER	MODEL NO.	CCB110
CHANNEL	12	INPUT POWER	12 Vdc
FREQUENCY RANGE	Below 1000 MHz	DETECTOR FUNCTION & BANDWIDTH	Peak(PK) Average (AV) Quasi-Peak
ENVIRONMENTAL CONDITIONS	21 deg. C, 76 % RH, 1005 hPa	TESTED BY: BRIGHT	

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Factor (dB/M)	Reading (dBuV/M)	Emission (dBuV/M)	Limit (dBuV/M)	Margin (dB)	Ant. Height (cm)	Table Angle (Deg.)
1*	107.90 PK	13.35	45.01	58.36	68.00	-9.64	291.00	189.00
1*	107.90 AV	13.35	31.99	45.34	48.00	-2.66	291.00	189.00
2	215.34 QP	13.51	28.65	42.16	43.50	-1.34	162.00	306.00
3	323.46 QP	17.10	22.13	39.23	46.00	-6.77	99.00	349.00
4	431.33 QP	19.64	15.05	34.69	46.00	-11.31	99.00	20.00
5	539.67 QP	21.79	6.81	28.60	46.00	-17.40	100.00	159.00
6	647.36 QP	23.86	8.82	32.68	46.00	-13.32	134.00	355.00
7	755.37 QP	25.39	3.37	28.76	46.00	-17.24	110.00	346.00

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Factor (dB/M)	Reading (dBuV/M)	Emission (dBuV/M)	Limit (dBuV/M)	Margin (dB)	Ant. Height (cm)	Table Angle (Deg.)
1*	107.90 PK	13.35	39.73	53.08	68.00	-14.92	199.00	97.00
1*	107.90 AV	13.35	27.02	40.37	48.00	-7.63	199.00	97.00
2	215.36 QP	13.51	19.85	33.36	43.50	-10.14	100.00	291.00
3	322.97 QP	17.09	19.58	36.67	46.00	-9.33	146.00	0.00
4	431.67 QP	19.65	16.57	36.22	46.00	-9.78	105.00	19.00
5	539.40 QP	21.78	15.90	37.68	46.00	-8.32	99.00	351.00
6	648.37 QP	23.87	-2.15	21.72	46.00	-24.28	99.00	313.00
7	738.01 QP	25.21	-2.45	22.76	46.00	-23.24	99.00	242.00

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB).
 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. "*" = Fundamental frequency.

4.3 EMISSION BAND MEASUREMENT

4.3.1 LIMITS OF EMISSION BAND MEASUREMENT

Emissions from the intentional radiator shall be confined within a band 200 kHz wide centered on the operating frequency. The 200 kHz band shall lie wholly within the frequency ranges of 88.1 to 88.9MHz and 106.7 to 107.9MHz.

4.3.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
SPECTRUM ANALYZER R&S	FSP	E1S1002	May. 15, 2006

NOTE:

The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

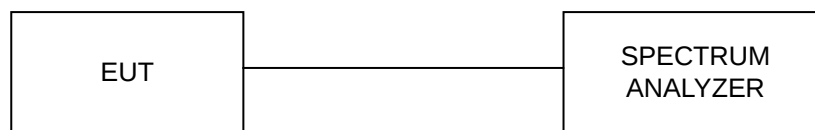
4.3.3 TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with 10 kHz RBW and 30 kHz VBW. Measured the 26dBc bandwidth and plotted the graph.

4.3.4 DEVIATION FROM TEST STANDARD

No deviation

4.3.5 TEST SETUP



4.3.6 EUT OPERATING CONDITIONS

Same as 4.2.6

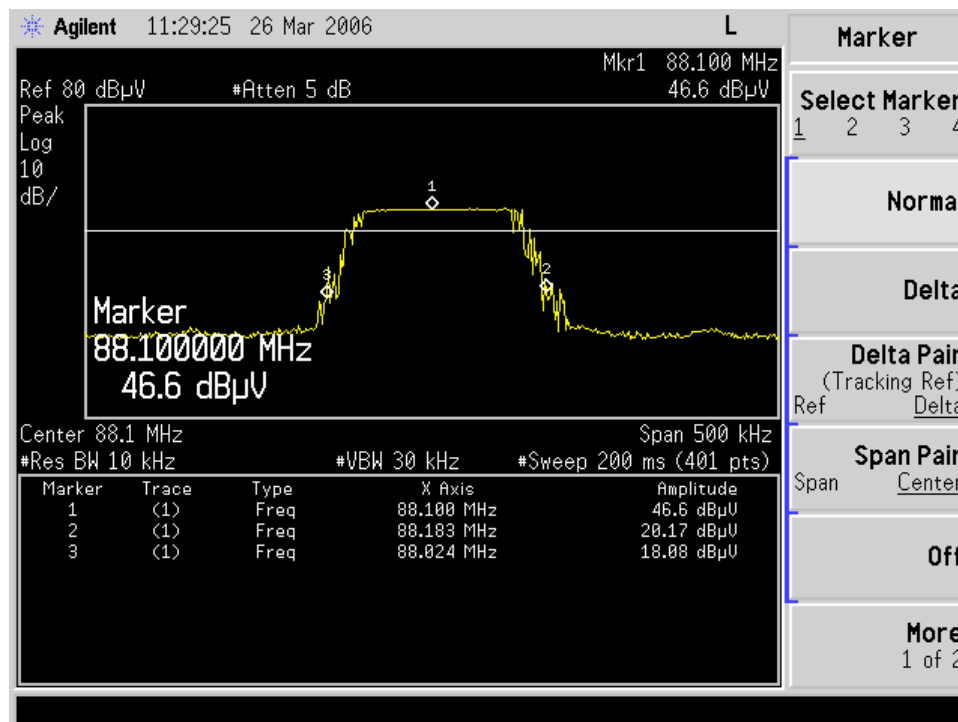
4.3.7 TEST RESULTS

EUT	SCA CAR CONVERTER	MODEL NO.	CCB110
INPUT POWER (SYSTEM)	12Vdc	ENVIRONMENTAL CONDITIONS	22deg. C, 74%RH, 991 hPa
TEST BY	BRIGHT		

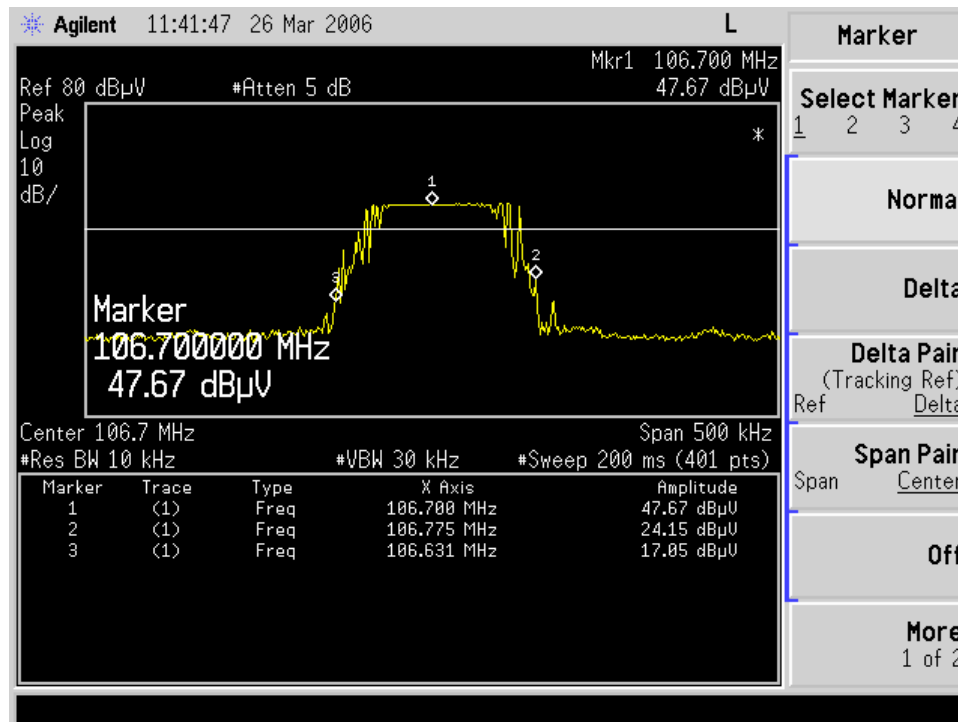
Previous data:

CHANNEL	CHANNEL FREQUENCY (MHz)	26 dB BANDWIDTH (kHz)	MAXIMUM LIMIT (kHz)	PASS/FAIL
1	88.10MHz	159.00	200	PASS
2	106.70MHz	165.00	200	PASS
3	107.90MHz	164.00	200	PASS

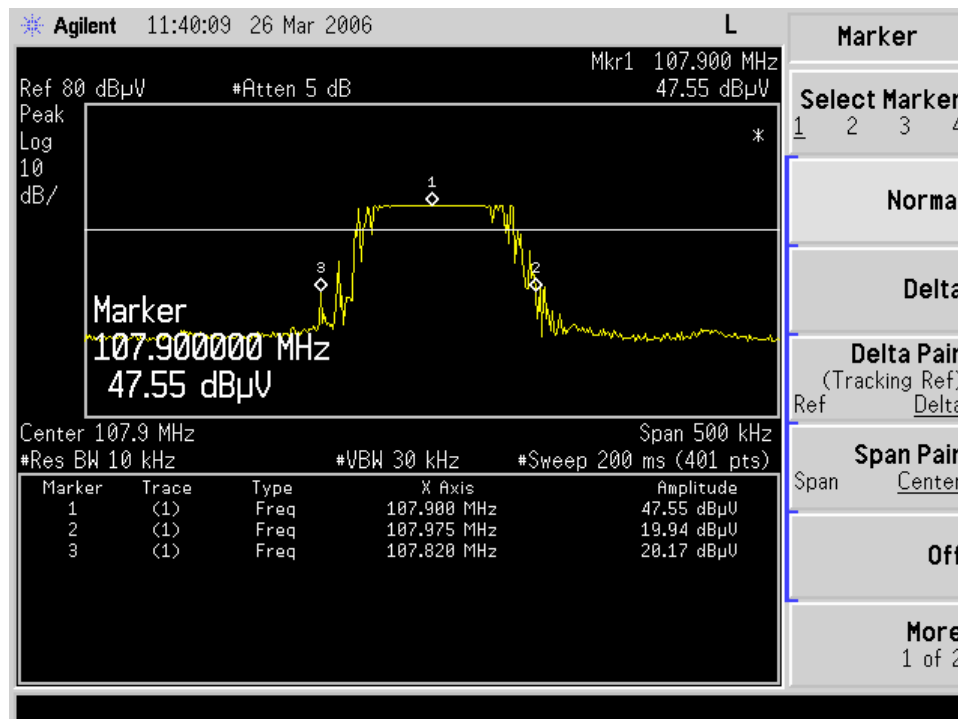
CH1



CH6

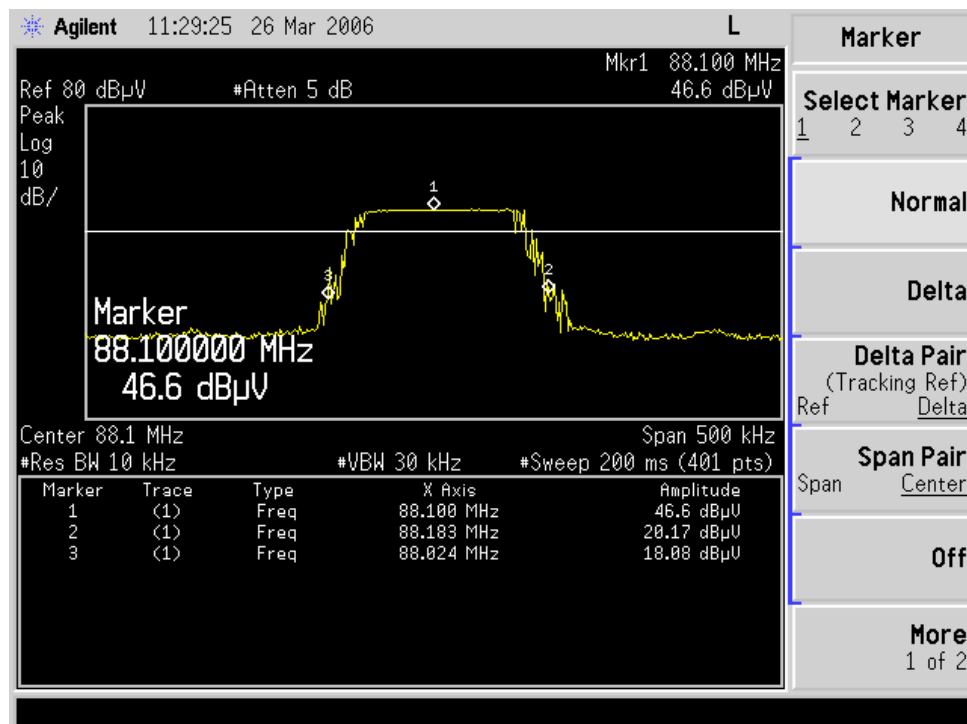


CH12

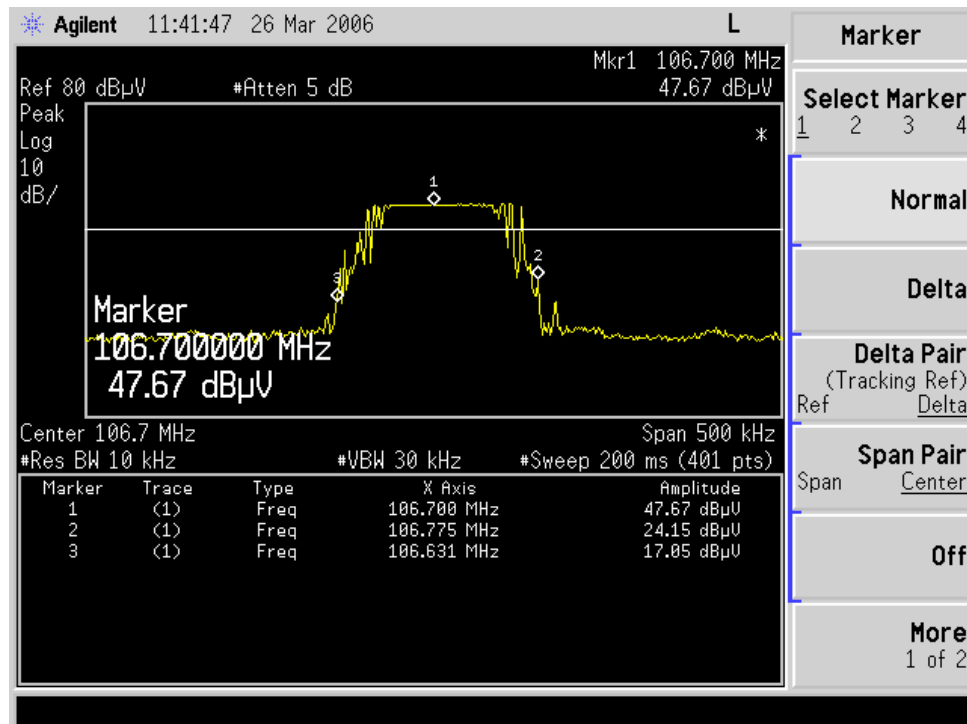


Data after debugging:

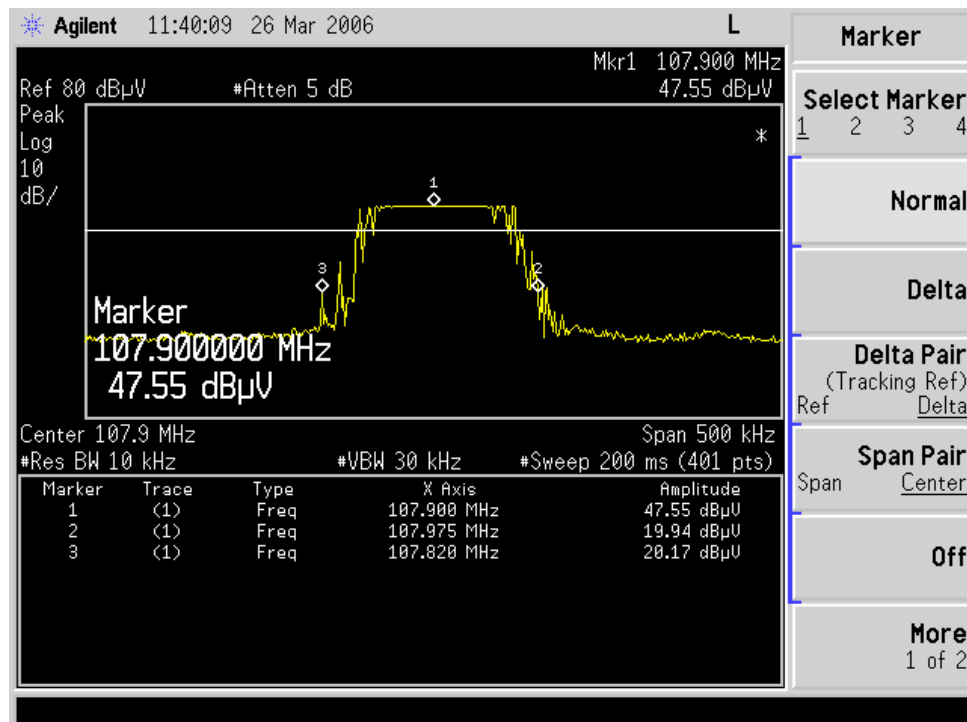
CHANNEL	CHANNEL FREQUENCY (MHz)	26 dB BANDWIDTH (kHz)	MAXIMUM LIMIT (kHz)	PASS/FAIL
1	88.10MHz	159.00	200	PASS
2	106.70MHz	165.00	200	PASS
3	107.90MHz	164.00	200	PASS

CH1

CH 6



CH 12



5 APPENDIX - INFORMATION ON THE TESTING LABORATORIES

We, ADT (Shanghai) Corp., were founded in 2003 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved by the following approval agencies according to ISO/IEC 17025.

JAPAN	VCCI
USA	FCC, A2LA
Norway	DNV



Copies of accreditation certificates of our laboratories obtained from approval agencies can be downloaded from our web site: www.cnadt.com

If you have any comments, please feel free to contact us at the following:

ADT (Shanghai) Corporation

TEL :86-21-6465-9091

Fax : 86-21-6465-9092

Email: adtsh@vip.163.com

Web Site: www.cnadt.com