



TEST REPORT

Applicant Name : Masterbuilt Manufacturing Inc.
& Address : 1 Masterbuilt Court Columbus, Georgia, 31907, USA
Manufacturing Site : Fudeer Electric Appliance Co., Ltd
286, Kaifa Avenue, Taizhou Economic Development Zone, Zhejiang
Province, China

Sample Description
Product : 40" Electric Smoker with RF, 30" Electric Smoker with RF
Model No. : 20070211,20070311,20071211,20071311, 20071411, 20070411,
20071111, 20071011, 20070911
Electrical Rating : 40" Electric Smoker with RF: 120VAC, 60Hz, 1200W, 10A
30" Electric Smoker with RF: 120VAC, 60Hz, 800W, 6.7A
FCC ID : YHXESQ-3040C
Date Received : 08 July 2010

Date Test Conducted : 03 August 2010 to 11 October 2010

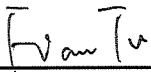
Test standards : FCC Part 15.231(e)

Test Result : Pass
Conclusion : The submitted samples complied with the above rules/standards.
Remark : None.

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Prepared and Check By:

Approved By:



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Signature
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11 October 2010 **Date**

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1 General Description

1.1 Product Description

The equipment under test (EUT) is a transceiver for Electric Smoker with RF at 433.043 MHz. The EUT is powered by 120V/60Hz.

When the "meat probe" button on remote controller is pressed, the Electric Smoker will send the temperature information (probe) back to the remote control. The meat probe function of the remote controller will be disabled for 10.608 sec. by software after it is activated. The Electric Smoker won't send message automatically, it only can send the temperature information (probe) to the remote controller by the request of the remote controller. For the Electric Smoker, the duration of each transmission is 1.85ms and is not greater than one second, the silent period between transmissions was 10.608 second.

Antenna Type: internal, wire antenna

The model: 20071411, 20070311, 20071211, 20071311, are the same as the test model 20070211 in hardware and software aspect. The only differences are the appearance, and model no for trading purpose.

The model 20070411, 20071111, 20071011, 20070911 are the same as the test model 20070211 in hardware and software aspect, The only differences are the appearance, and output power.

Model: 20070211, 20070311, 20071211, 20071311, 20071411 output power 1200W, 10A. and model 20070411, 20071111, 20071011, 20070911 output power 800W, 6.7A

We tested the Electric Smoker, Model: 20070211, to determine if it was in compliance with the relevant FCC standards. We found that the unit met the requirements of FCC Part 15.231 (e) when tested as received. The worst case's test data was presented in this test report.

For electronic filing, the brief circuit description is saved with filename: Technical Description .pdf.

1.2 Related Submittal(s) Grants

The receiver portion of this transceiver is subject to verification procedure and the remote control is subject to Certification procedure.

1.3 Test Methodology

Radiated emission measurements were performed according to the procedures in ANSI C63.4 (2003). Radiated Emission measurement was performed in a Semi-anechoic chamber. Preliminary scans were performed in the Semi-anechoic chamber only to determine worst case modes. All Radiated tests were performed at an antenna to EUT distance of 3 meters, unless stated otherwise in the “Justification Section” of this Application.

Conducted emission measurements were performed according to the procedures in ANSI C63.4 (2003). Conducted Emission measurement was performed in a Shielding Room. Preliminary scans were performed in the Shielding Room only to determine worst case modes. All conducted tests were performed at an LISN to EUT distance of 0.8 meters, unless stated otherwise in the “Justification Section” of this Application.

1.4 Test Facility

The Semi-Anechoic Chamber facility used to collect the radiated data and Shielding Room facility used to collect the conducted data are Intertek Testing Services Shenzhen Ltd. Kejiyuan Branch and located at 6F, Block D, Huahan Building, Langshan Road, Nanshan District Shenzhen, P.R.China. This test facility and site measurement data have been fully placed on file with File Number 242492.

2 System Test Configuration

2.1 Justification

The system was configured for testing in a typical fashion (as a customer would normally use it), and in the confines as outlined in ANSI C63.4 (2003).

The EUT was powered by 120V/60Hz.

For maximizing emission at and above 30 MHz, the EUT was rotated through 360°, the antenna height was varied from 1 meter to 4 meters above the ground plane, and the antenna polarization was changed. This step by step procedure for maximizing emissions led to the data reported in Exhibit 3.3.

The unit was operated standalone and placed in the center of the turntable.

The equipment under test (EUT) was configured for testing in a typical fashion (as a customer would normally use it). The EUT was placed on turntable, which enabled the engineer to maximize emissions through its placement in the three orthogonal axes.

2.2 EUT Exercising Software

There was no special software to exercise the device.

2.3 Special Accessories

There are no special accessories necessary for compliance of this product.

2.4 Equipment Modification

Any modifications installed previous to testing by Masterbuilt Manufacturing Inc. will be incorporated in each production model sold/leased in the United States. No modifications were installed by Intertek Testing Services Shenzhen Ltd. Guangzhou Branch.

2.5 Measurement Uncertainty

When determining the test conclusion, the Measurement Uncertainty of test has been considered.

2.6 Support Equipment List and Description

N/A

3 Radiated Emission Results

Data is included worst case configuration (the configuration which resulted in the highest emission levels). A sample calculation, configuration photographs and data tables of the emissions are included.

3.1 Field Strength Calculation

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

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

where FS = Field Strength in dB μ V/m

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

CF = Cable Attenuation Factor in dB

AF = Antenna Factor in dB

AG = Amplifier Gain in dB

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

$$FS = RR + LF$$

where FS = Field Strength in dB μ V/m

RR = RA - AG in dB μ V

LF = CF + AF in dB

Assume a receiver reading of 52.0 dB μ V is obtained. The antenna factor of 7.4 dB and cable factor of 1.6 dB are added. The amplifier gain of 29 dB is subtracted, giving a field strength of 27 dB μ V/m. This value in dB μ V/m was converted to its corresponding level in μ V/m.

$$RA = 52.0 \text{ dB}\mu\text{V/m}$$

$$AF = 7.4 \text{ dB}$$

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

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

$$FS = RR + LF$$

$$FS = 23 + 9 = 32 \text{ dB}\mu\text{V/m}$$

$$RR = 23.0 \text{ dB}\mu\text{V}$$

$$LF = 9.0 \text{ dB}$$

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

3.2 *Radiated Emission Configuration Photograph*

Worst Case Radiated Emission at 2164.780MHz

For electronic filing, the worst case radiated emission configuration photographs are saved with filename: radiated photos.pdf.

3.3 *Radiated and Spurious Emission Data*

The data on the following page lists the significant emission frequencies, the limit and the margin of compliance. Numbers with a minus sign are below the limit.
Judgement: Passed by 3.1 dB.

Applicant: Masterbuilt Manufacturing Inc.
 Model: 20070211
 Operation: EUT on normal operation

Date of test: 03 August 2010

Radiated Emissions
 Pursuant to FCC 15.109: Emissions Requirement

Polarization	Frequency (MHz)	Net at 3m (dBµV/m)	Limit at 3m (dBµV/m)	Margin
H	30.793	22.1	40.0	-17.9
H	41.316	16.7	40.0	-23.3
H	54.150	13.8	40.0	-26.2
V	30.810	21.9	40.0	-18.1
V	41.442	16.5	40.0	-23.5
V	54.273	13.8	40.0	-26.2

Operation: Transmit mode

Radiated Emissions
 Pursuant to FCC 15.231(e): Emissions Requirement

Detector	Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Limit at 3m (dBµV/m)
AV	Vertical	432.956	48.5	0.0	17.8	66.3	72.9
PK	Vertical	432.956	61.4	0.0	17.8	79.2	92.9
AV	Vertical	1299.120	49.5	36.8	26.1	38.8	54.0
PK	Vertical	1299.120	60.6	36.8	26.1	49.9	74.0
AV	Vertical	1731.925	39.2	36.7	29.7	32.2	54.0
PK	Vertical	1731.925	52.3	36.7	29.7	45.3	74.0
AV	Vertical	2164.780	53.1	36.6	34.4	50.9	54.0
PK	Vertical	2164.780	58.7	36.6	34.4	56.5	74.0
AV	Vertical	3031.000	45.1	36.6	36.2	44.7	54.0
PK	Vertical	3031.000	59.2	36.6	36.2	58.8	74.0
AV	Vertical	3896.385	39.0	36.7	37.6	39.9	54.0
PK	Vertical	3896.385	51.5	36.7	37.6	52.4	74.0

Notes: 1. Peak Detector Data unless otherwise stated.

2. All measurements were made at 3 meter. Harmonic emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other harmonic emissions than those reported were detected at a test distance of 0.3-meter.
3. Negative value in the margin column shows emission below limit.
4. Horn antenna is used for the emission over 1000MHz.

4 Conducted Emission results

4.1 Conducted Emission Configuration Photograph

Worst Case Conducted Emission at 0.445 MHz

For electronic filing, the worst case conducted emission configuration photograph is saved with filename: conducted photos.pdf.

4.2 Conducted Emission Data

The data on the following page lists the significant emission frequencies, the limit and the margin of compliance. Numbers with a minus sign are below the limit.
Judgement: Passed by 26.3 dB.

Applicant: Masterbuilt Manufacturing Inc.
 Model No: 20070211
 Operation: EUT on normal operation

Date of Test: 09 August 2010

Conducted Emissions

L line:

Frequency [MHz]	Quasi-Peak		Average	
	Disturbance level [dB(uV)]	Permitted limit [dB(uV)]	Disturbance level [dB(uV)]	Permitted limit [dB(uV)]
0.160	<55	65.5	<45	55.5
0.385	28.7	58.2	<42	48.2
0.412	29.8	57.6	<36	47.6
0.445	30.7	57.0	<36	47.0
0.695	25.6	56.0	<36	46.0
0.713	26.4	56.0	<36	46.0
0.743	27.2	56.0	<36	46.0
6.000	<50	60.0	<40	50.0
10.000	<50	60.0	<40	50.0
22.000	<50	60.0	<40	50.0
30.000	<50	60.0	<40	50.0

Applicant: Masterbuilt Manufacturing Inc.
 Model No: 20070211
 Operation: EUT on normal operation

Date of Test: 09 August 2010

Conducted Emissions

N line:

Frequency [MHz]	Quasi-Peak		Average	
	Disturbance level [dB(uV)]	Permitted limit [dB(uV)]	Disturbance level [dB(uV)]	Permitted limit [dB(uV)]
0.160	<55	65.5	<45	55.5
0.290	33.5	60.5	<42	50.5
0.412	29.8	57.6	<36	47.6
0.445	30.6	57.0	<36	47.0
0.495	28.7	56.1	<36	46.1
0.687	26.4	56.0	<36	46.0
0.725	27.2	56.0	<36	46.0
6.000	<50	60.0	<40	50.0
10.000	<50	60.0	<40	50.0
22.000	<50	60.0	<40	50.0
30.000	<50	60.0	<40	50.0

5 Equipment photo

For electronic filing, the photographs are saved with filename: external photos.pdf and internal photos.pdf.

6 Product Labelling

For electronics filing, the FCC ID label artwork and the label location are saved with filename: label and location.pdf.

7 Technical Specifications

For electronic filing, the block diagram and schematic of the tested EUT are saved with filename: block diagram.pdf and circuit diagram.pdf respectively.

8 **Instruction Manual**

For electronic filing, a preliminary copy of the Instruction Manual is saved with filename: user manual.pdf. This manual will be provided to the end-user with each unit sold/leased in the United States.

9 **Miscellaneous Information**

This miscellaneous information includes details of the measured bandwidth, the test procedure and calculation of factors such as pulse desensitization.

9.1 ***Bandwidth Plot***

For electronic filing, the plot shows the fundamental emission when modulated is saved with filename: Bandwidth Plot.pdf. From the plot, the bandwidth is observed to be 584 kHz, at 20 dBc where the bandwidth limit is 1082 kHz.

9.2 ***Emissions Test Procedures***

The following is a description of the test procedure used by Intertek Testing Services in the measurements of transmitters operating under Part 15, Subpart C rules.

The test set-up and procedures described below are designed to meet the requirements of ANSI C63.4 - 2003.

The transmitting equipment under test (EUT) is placed on a insulating material (up to 12 mm thick) above the ground plane. During the radiated emissions test, the turntable is rotated and any cables leaving the EUT are manipulated to find the configuration resulting in maximum emissions. The EUT is adjusted through all three orthogonal axes to obtain maximum emission levels. The antenna height and polarization are varied during the testing to search for maximum signal levels. Detector function for radiated emissions is in peak mode.

The frequency range scanned is from the lowest radio frequency signal generated in the device which is greater than 9 kHz to the tenth harmonic of the highest fundamental frequency or 40 GHz, whichever is lower. For line conducted emissions, the range scanned is 150 kHz to 30 MHz.

9.3 Emissions Test Procedures (cont'd)

The EUT is warmed up for 15 minutes prior to the test.

AC power to the unit is varied from 85% to 115% nominal and variation in the fundamental emission field strength is recorded. If battery powered, a new, fully charged battery is used.

Conducted measurements are made as described in ANSI C63.4 - 2003.

The IF bandwidth used for measurement of radiated signal strength was 10 kHz for emission below 30 MHz and 120 KHz for emission from 30 MHz to 1000 MHz. Where transmissions of short enough pulse duration warrant, a greater bandwidth is selected according to the recommendations of Hewlett Packard Application Note 150-2. Above 1000 MHz, a resolution bandwidth of 1 MHz is used.

Transmitter measurements are normally conducted at a measurement distance of three meters. However, to assure low enough noise floor in the restricted bands and above 1 GHz, signals are acquired at a distance of one meter or less. All measurements are extrapolated to three meters using inverse scaling, but those measurements taken at a closer distance are so marked.

10 Equipment list

1) Radiated Emission test

Equipment No.	Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Due Date
SZ061-03	BiConiLog Antenna	ETS	3142C	00066460	25-Nov-09	25-May-11
SZ185-01	EMI Receiver	R&S	ESCI	100547	08-Mar-10	08-Mar-11
SZ061-08	Horn Antenna	ETS	3115	00092346	17-Jul-08	17-Jan-11
SZ056-03	Spectrum Analyzer	R&S	FSP 30	101148	18-Mar-10	18-Mar-11
SZ188-01	Anechoic Chamber	ETS	RFD-F/A-100	4102	31-Oct-09	31-Oct-10
SZ062-04	RF Cable	RADIALL	RG 213U	--	05-Nov-09	05-Nov-10
SZ062-06	RF Cable	RADIALL	0.04-26.5GHz	--	17-Aug-09	17-Aug-11

2) Conducted Emission test

Equipment No.	Equipment	Model	Manufacturer	Serial No.	Cal. Date	Due Date
SZ185-02	EMI Test Receiver	ESCI	R&S	100692	23-Nov-09	23-Nov-10
SZ187-01	LISN	ENV216	R&S	100072	23-Nov-09	23-Nov-10
SZ067-03	Power Splitter	RVZ	R&S	100410	08-Mar-10	08-Mar-11
SZ066-01	Isolation Transformer	ISO TRAN	Erika Fiedler OHG	89	14-Jan-10	14-Jan-11
SZ067-01	Matching Pad	RAM	R&S	101055	08-Mar-10	08-Mar-11
SZ067-02	Matching Pad	RAM	R&S	101056	08-Mar-10	08-Mar-11
SZ062-09	RF Cable	RG58/AU	MIZU		/	/
SZ188-03	Shielding Room	ETS	RFD-100	4100	15-Sep-07	15-Sep-10