	and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane. 3. Set to the maximum power setting and enable the EUT transmit continuously. 4. Use the following spectrum analyzer settings: (1) Span shall wide enough to fully capture the emission being measured; (2) Set RBW=120 kHz for f < 1 GHz, RBW=1MHz for f>1GHz ; VBW≥RBW; Sweep = auto; Detector function = peak; Trace = max hold for peak (3) For average measurement: use duty cycle correction factor method per 15.35(c). Duty cycle = On time/100 milliseconds On time =N1*L1+N2*L2+...+Nn-1*LNn-1+Nn*Ln Where N1 is number of type 1 pulses, L1 is length of type 1 pulses, etc. Average Emission Level = Peak Emission Level + 20*log(Duty cycle) Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level
Test results:	PASS

6.11.2. Test Instruments

Radiated Emission Test Site (966)				
Name of Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Due**
Test Receiver	ROHDE&SCHWARZ	ESIB7	100197	Sep. 17, 2019
Spectrum Analyzer	ROHDE&SCHWARZ	FSQ40	200061	Sep. 20, 2019
Pre-amplifier	EM Electronics Corporation CO.,LTD	EM30265	07032613	Sep. 16, 2019
Pre-amplifier	HP	8447D	2727A05017	Sep. 16, 2019
Loop antenna	ZHINAN	ZN30900A	12024	Oct. 20, 2019
Broadband Antenna	Schwarzbeck	VULB9163	340	Sep. 02, 2019
Horn Antenna	Schwarzbeck	BBHA 9120D	631	Oct. 20, 2019
Horn Antenna	A-INFO	LB-180400-KF	J211020657	Sep. 16, 2019
Antenna Mast	Keleto	RE-AM	N/A	N/A
Coax cable (9KHz-1GHz)	TCT	RE-low-01	N/A	Sep. 16, 2019
Coax cable (9KHz-40GHz)	TCT	RE-high-02	N/A	Sep. 16, 2019
Coax cable (9KHz-1GHz)	TCT	RE-low-03	N/A	Sep. 16, 2019
Coax cable (9KHz-40GHz)	TCT	RE-high-04	N/A	Sep. 16, 2019
EMI Test Software	Shurple Technology	EZ-EMC	N/A	N/A

Note: *The calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).*

6.11.3. Test Data

Duty cycle correction factor for average measurement

2DH5 on time (One Pulse) Plot on Channel 39

2DH5 on time (Count Pulses) Plot on Channel 39

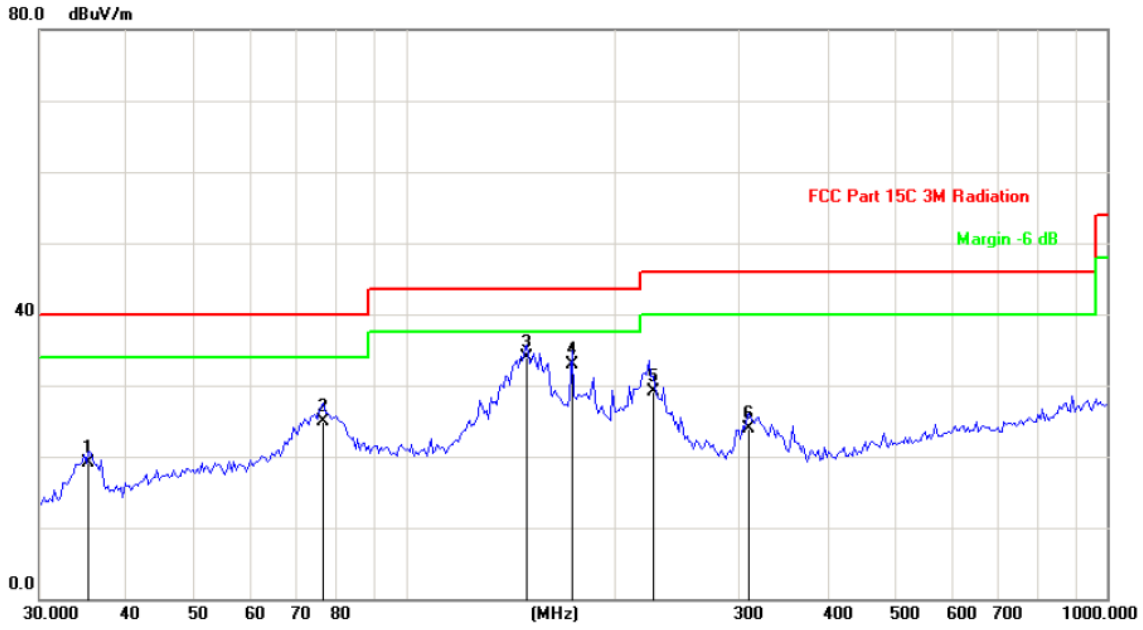
Note:

*1. Worst case Duty cycle = on time/100 milliseconds = (2.896*16)/100= 0.4634*
*2. Worst case Duty cycle correction factor = 20*log (Duty cycle) = -6.68dB*
3. 2DH5 has the highest duty cycle worst case and is reported.
4. The average levels were calculated from the peak level corrected with duty cycle correction factor (-6.68dB) derived from 20log (dwell time/100ms). This correction is only for signals that hop with the fundamental signal, such as band-edge and harmonic. Other spurious signals that are independent of the hopping signal would not use this correction.

Please refer to following diagram for individual

Below 1GHz

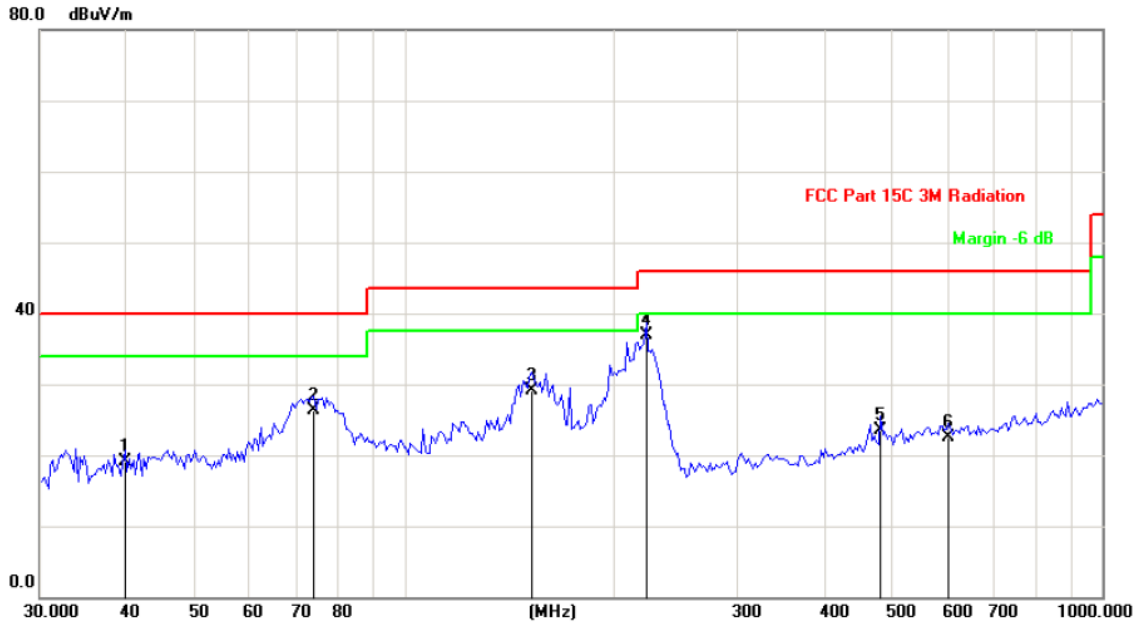
Horizontal:



Site
Limit: FCC Part 15C 3M Radiation
Polarization: *Horizontal*
Power:
Temperature: 25
Humidity: 55 %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1		35.2626	30.22	-11.03	19.19	40.00	-20.81	QP
2		76.3869	41.32	-16.32	25.00	40.00	-15.00	QP
3	*	148.9175	50.22	-16.24	33.98	43.50	-9.52	QP
4		172.5976	48.23	-15.23	33.00	43.50	-10.50	QP
5		225.4267	42.33	-13.28	29.05	46.00	-16.95	QP
6		309.2710	34.55	-10.70	23.85	46.00	-22.15	QP

Vertical:



Site

Limit: FCC Part 15C 3M Radiation

Polarization: *Vertical*

Power:

Temperature: 25

Humidity: 55 %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1		39.7371	30.22	-11.06	19.16	40.00	-20.84	QP
2		74.2696	42.33	-16.09	26.24	40.00	-13.76	QP
3		152.0902	45.32	-16.15	29.17	43.50	-14.33	QP
4	*	222.2807	50.22	-13.37	36.85	46.00	-9.15	QP
5		481.5112	31.25	-7.74	23.51	46.00	-22.49	QP
6		602.9287	28.33	-5.78	22.55	46.00	-23.45	QP

Note: *1.The low frequency, which started from 9KHz~30MHz, was pre-scanned and the result which was 20dB lower than the limit line per 15.31(o) was not reported*

2. Measurements were conducted in all three channels (high, middle, low) and two modulation (GFSK, Pi/4DQPSK) and the worst case Mode (Highest channel and Pi/4DQPSK) was submitted only.

Above 1GHz

Modulation Type: Pi/4DQPSK									
Low channel: 2402 MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBuV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
2390	H	45.73	---	-8.27	37.46	---	74	54	-16.54
4804	H	46.85	---	0.66	47.51	---	74	54	-6.49
7206	H	38.24	---	9.50	47.74	---	74	54	-6.26
---	H	---	---	---	---	---	---	---	---
2390	V	43.88	---	-8.27	35.61	---	74	54	-18.39
4804	V	44.96	---	0.66	45.62	---	74	54	-8.38
7206	V	37.48	---	9.50	46.98	---	74	54	-7.02
---	V	---	---	---	---	---	---	---	---

Middle channel: 2441 MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
4882	H	43.63	---	0.99	44.62	---	74	54	-9.38
7323	H	38.02	---	9.87	47.89	---	74	54	-6.11
---	H	---	---	---	---	---	---	---	---
4882	V	44.17	---	0.99	45.16	---	74	54	-8.84
7323	V	37.25	---	9.87	47.12	---	74	54	-6.88
---	V	---	---	---	---	----	---	---	---

High channel: 2480 MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
2483.5	H	46.32	---	-7.83	38.49	---	74	54	-15.51
4960	H	46.78	---	1.33	48.11	---	74	54	-5.89
7440	H	38.01	---	10.22	48.23	---	74	54	-5.77
---	H	---	---	---	---	---	---	---	---
2483.5	V	48.25	---	-7.83	40.42	---	74	54	-13.58
4960	V	47.38	---	1.33	48.71	---	74	54	-5.29
7440	V	37.44	---	10.22	47.66	---	74	54	-6.34
---	V	---	---	---	---	---	---	---	---

Note:

1. *Emission Level=Peak Reading + Correction Factor; Correction Factor= Antenna Factor + Cable loss – Pre-amplifier*
2. *Margin (dB) = Emission Level (Peak) (dBμV/m)-Average limit (dBμV/m)*
3. *The emission levels of other frequencies are very lower than the limit and not show in test report.*
4. *Measurements were conducted from 1 GHz to the 10th harmonic of highest fundamental frequency.*
5. *Data of measurement shown "---"in the above table mean that the reading of emissions is attenuated more than 20 dB below the limits or the field strength is too small to be measured.*
6. *Measurements were conducted in all two modulation (GFSK, Pi/4DQPSK), and the worst case Mode (Pi/4DQPSK) was submitted only.*

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Appendix A: Photographs of Test Setup

Product: Electric Guitar Digital Amp
Model: TM-15
Radiated Emission

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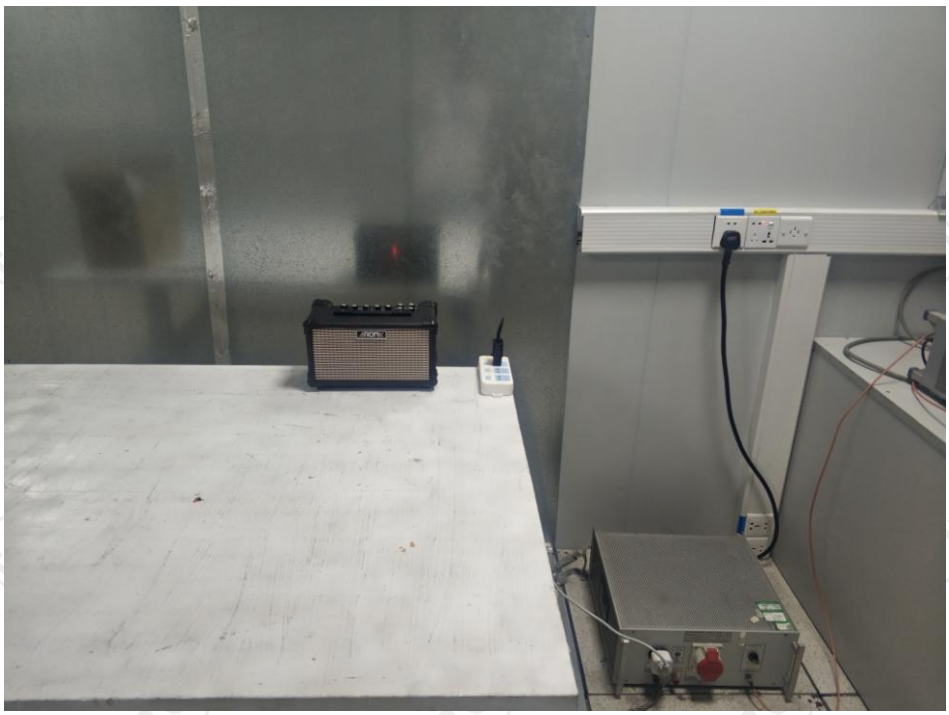
Conducted Emission



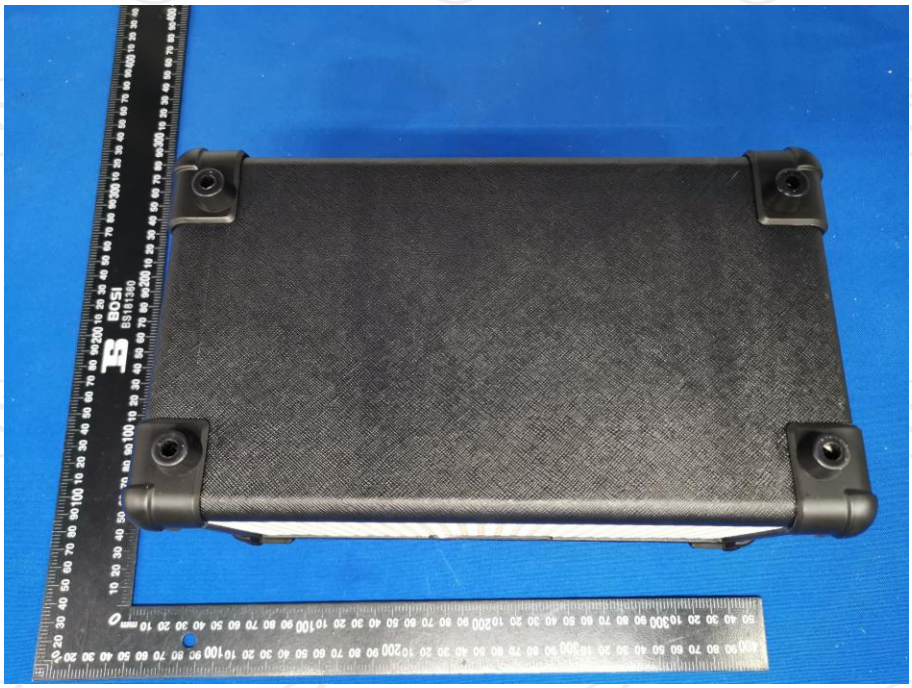
Appendix B: Photographs of EUT

Product: Electric Guitar Digital Amp

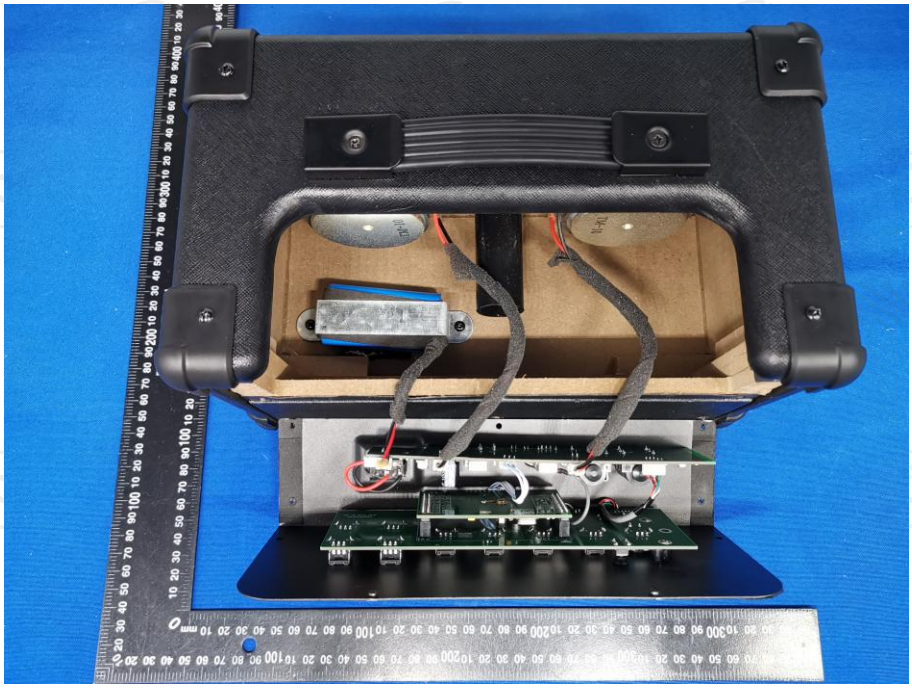
Model: TM-15

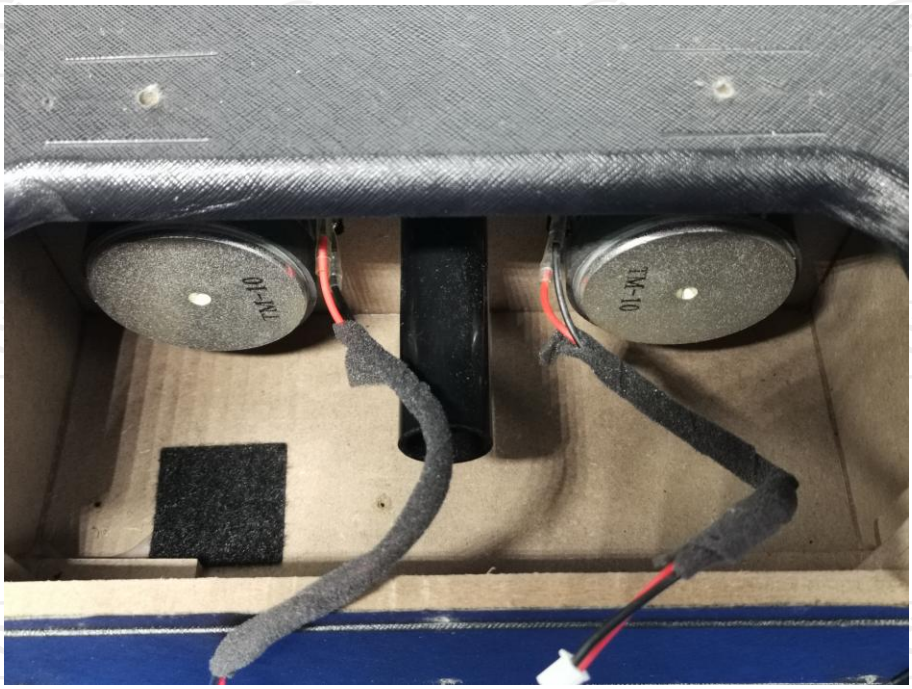
External Photos

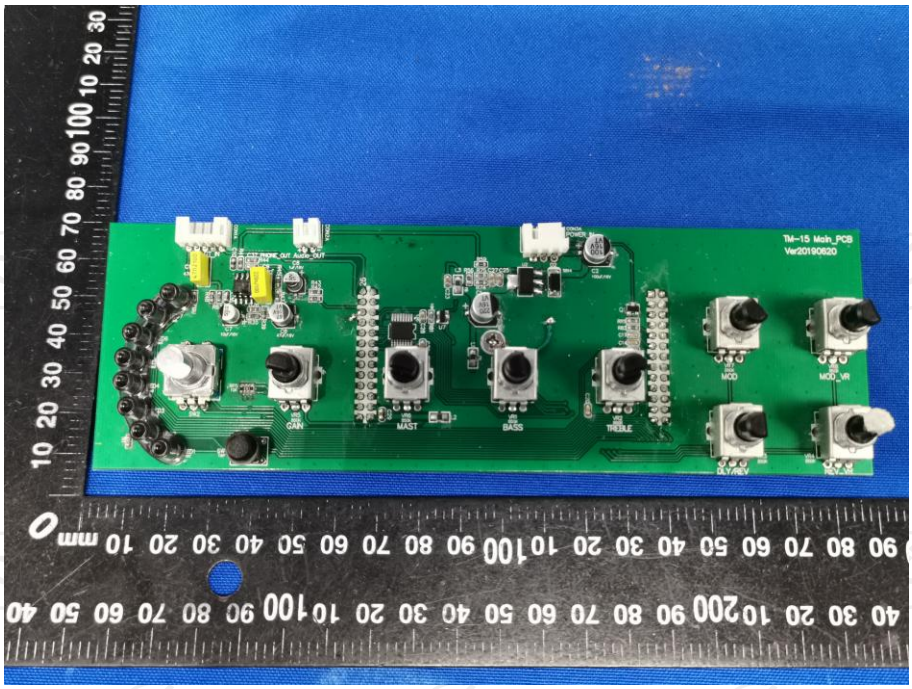

POWER
AROMA
Electric Guitar Amp
Model No.: TM-15
Input: 5V⎓2A
Built-IN Lithium Battery
CHARGE
MicroUSB
5V⎓2A
Charge Indicator
BT
VOLUME
LINE-OUT
INPUT
GUITAR
ATTENTION: IN ORDER TO COMPLETE THE CHARGING PROCESS IN THE SHORTEST TIME, PLEASE USE THE 5V⎓2A ADAPTER FOR CHARGING!
MADE IN CHINA

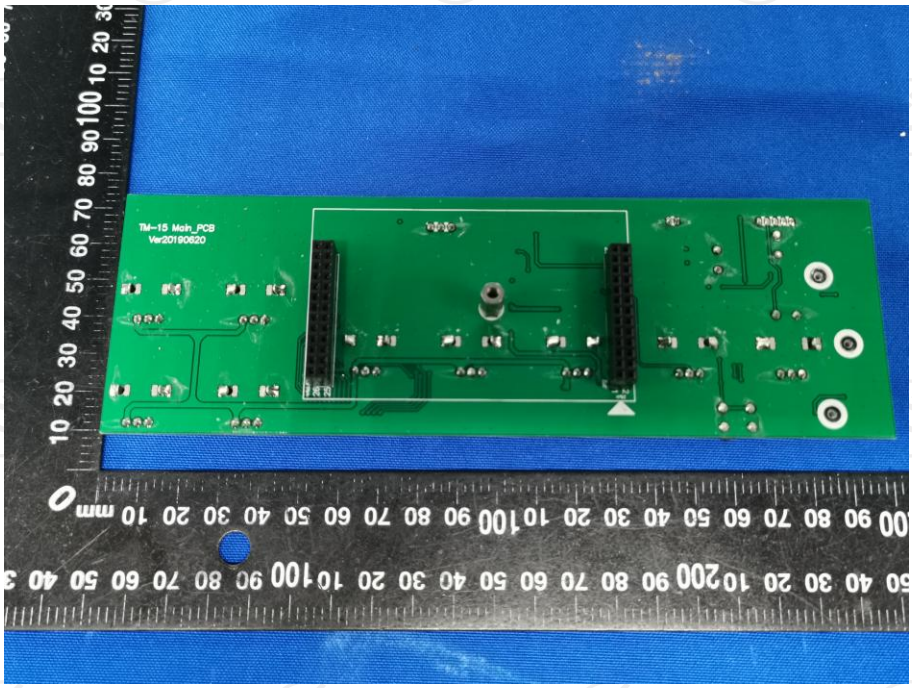


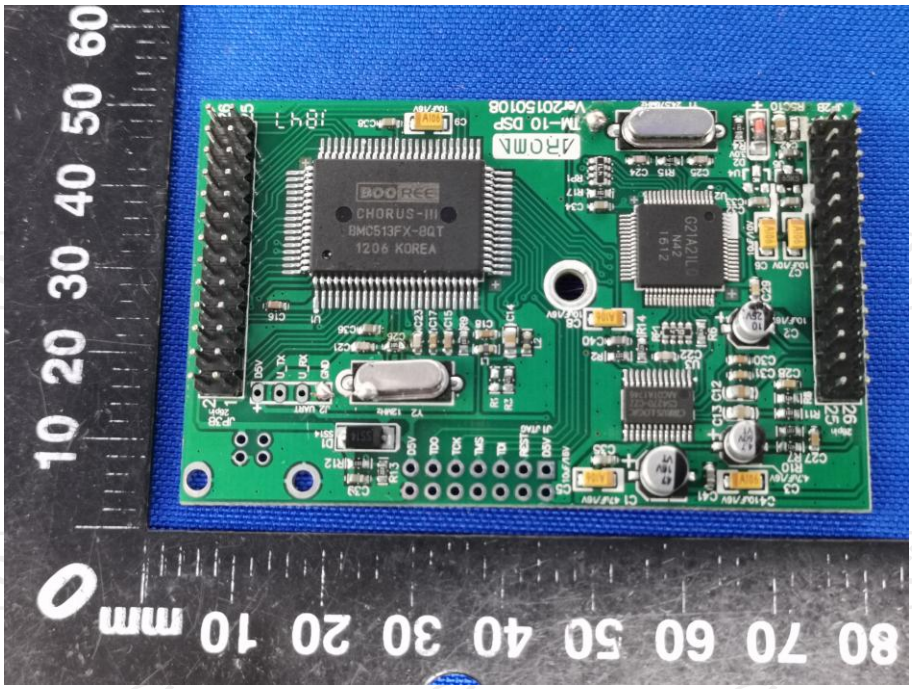
Product: Electric Guitar Digital Amp
Model: TM-15
Internal Photos

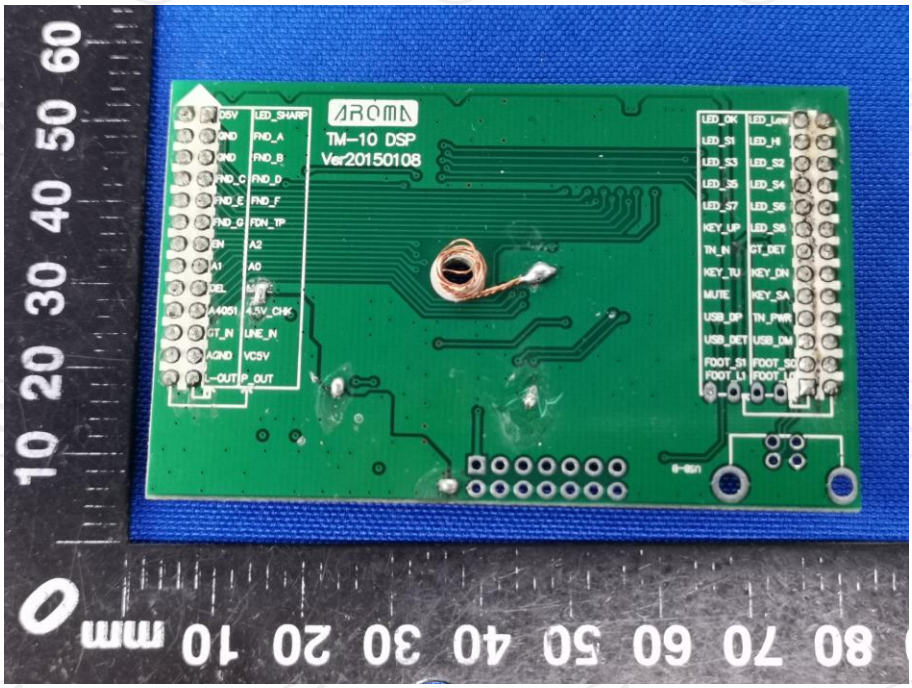


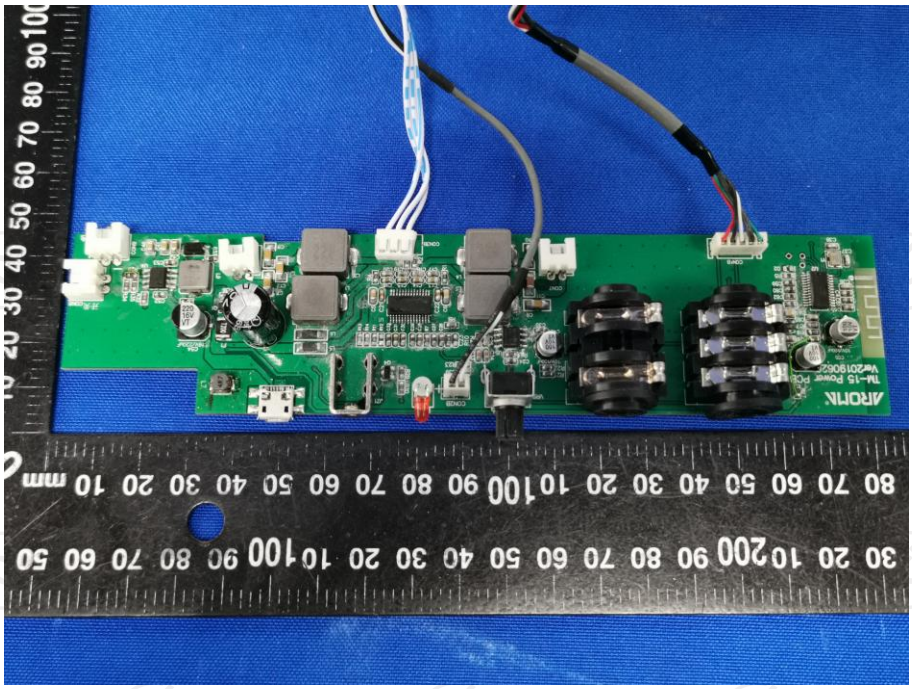


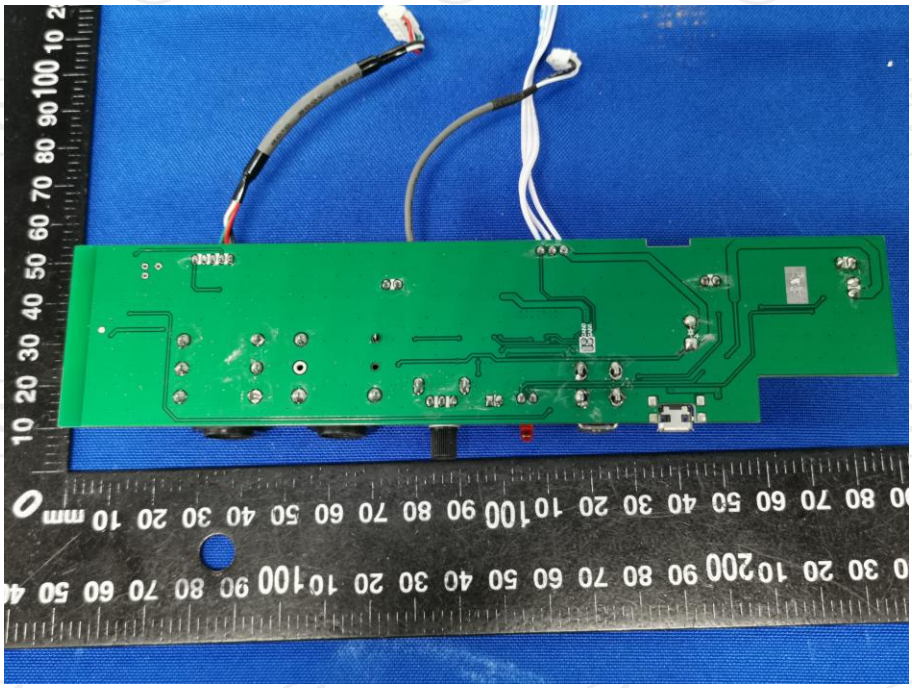

TM-15 Main_PCB
Ver20190620
GAIN
MAST
BASS
TREBLE
MOD
MOD_VR
DLY/REV

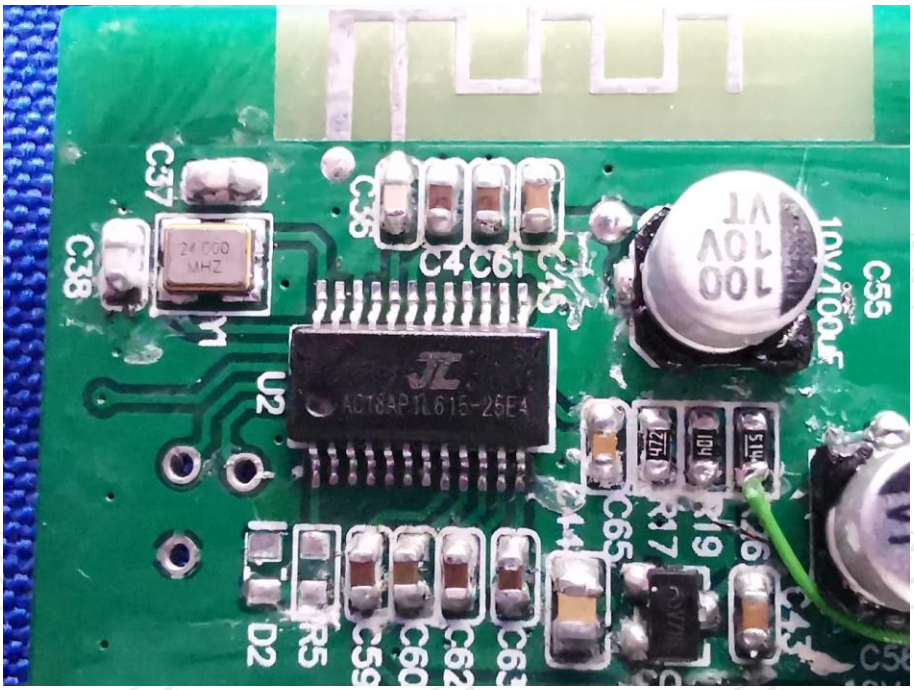

TM-15 Main_PCB
Ver20190620


AROMA
TM-10 DSP
Ver20150108
BOOREE
CHORUS-III
BMC513FX-8QT
1206 KOREA


AROMA
TM-10 DSP
Ver20150108







*****END OF REPORT*****

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