FCC PART 18
EMI MEASUREMENT AND TEST REPORT

For

CANEL LIGHTING CO., LTD.

3rd FL., No. 107, Chung Cheng Road, Sec. 1, Taipei, Taiwan

FCC ID: Q3CCANEL868

July 28, 2006

This Report Concerns:	**Equipment Type:**
☒ Original Report	ENERGY SAVING LAMPS

Test Engineer:	Louise Lu
Report Number:	RSZ06063082
Test Date:	July 27, 2006
Reviewed By:	Boni Baniqued
Prepared By:	Bay Area Compliance Lab Corp. (ShenZhen) 6/F, the 3rd Phase of WanLi Industrial Building, ShiHua Road, FuTian Free Trade Zone, ShenZhen, GuangDong 518038, P.R.China Tel: +86-755-33320018 Fax: +86-755-33320008

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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

The *CANEL LIGHTING CO., LTD.*'s model: E26 Series: MAE-SP-10WL (D), MAE-SP-15WL (D), MAE-SP-20WL (D), MAE-SP-25WL (D), GU10 Series: MAE-SG-10WL (D), MAE-SG-15WL (D), MAE-SG-20WL (D), MAE-SG-25WL (D), UB Series: MAE-UB-10WL (D), MAE-UB-15WL (D), or the "EUT" as referred to in this report is a *ENERGY SAVING LAMPS* which measures approximately
10W: 115.0 cm L x 44.5 cm W,
15W: 120.0 cm L x 44.5 cm W,
20W: 125.0 cm L x 52.0 cm W,
25W: 145.0 cm L x 52.0 cm W,
rated input voltage: AC 120V/60Hz.

* *The test data gathered are from production sample, serial number: 0606006. Provided by the manufacturer, we received EUT on 2006-06-30.*

Objective

The following test report is prepared on behalf of *CANEL LIGHTING CO., LTD.* in accordance with Part 2, Subpart J, and Part 18, Subparts A, B and C of the Federal Communication Commissions rules and regulations.

The objective of the manufacturer is to determine compliance with FCC Part 18 limits.

Related Submittal(s)/Grant(s)

No related submittal(s).

Test Methodology

All measurements contained in this report were conducted with MP-5, FCC Methods of Measurements of Radio Noise Emissions from ISM Equipment, February 1986. All measurements were performed at Bay Area Compliance Lab Corp. (ShenZhen). The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

Test Facility

The Test site used by Bay Area Compliance Lab Corp. (ShenZhen) to collect radiated and conducted emission measurement data is located in the 6/F, the 3rd Phase of WanLi Industrial Building, ShiHua Road, FuTian Free Trade Zone, ShenZhen, GuangDong 518038, P.R.China.

Test site at Bay Area Compliance Lab Corp. (ShenZhen) has been fully described in reports submitted to the Federal Communication Commission (FCC). The details of these reports have been found to be in compliance with the requirements of Section 2.948 of the FCC Rules on November 04, 2004. The facility also complies with the radiated and AC Live conducted test site criteria set forth in ANSI C63.4-2003 and FCC MP-5.

The Federal Communications Commission has the reports on file and is listed under FCC Registration No.: 382179. The test site has been approved by the FCC for public use and is listed in the FCC Public Access Link (PAL) database.

Additionally, Bay Area Compliance Lab Corp. (ShenZhen) is a National Institute of Standards and Technology (NIST) accredited laboratory, under the National Voluntary Laboratory Accredited Program (Lab Code 200707-0). The current scope of accreditations can be found at http://ts.nist.gov/ts/htdocs/210/214/scopes/2007070.htm

External I/O Cable

Cable Description	Length (M)	From/Port	To
Unshielded Detachable AC Cable	1.2	EUT	AC Power

SYSTEM TEST CONFIGURATION

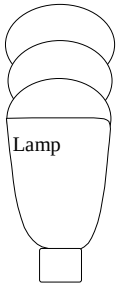
Justification

The system was configured for testing in a typical fashion (as normally used by a typical user).

Equipment Modifications

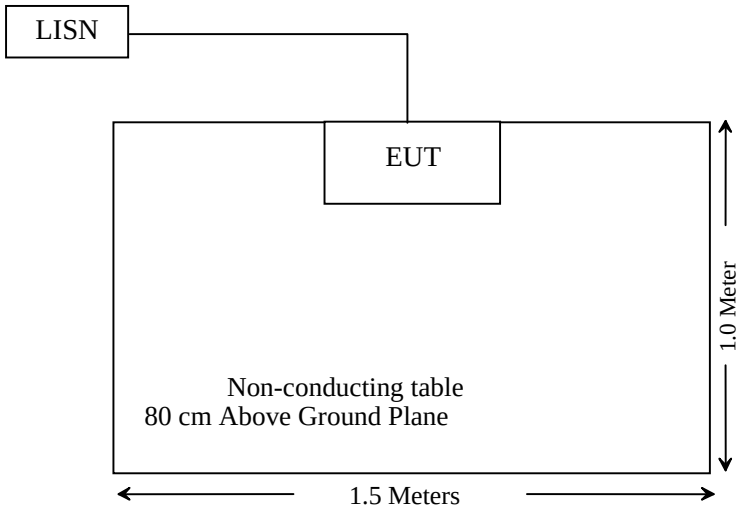
Bay Area Compliance Lab Corp. (Shenzhen) has not done any modification on the EUT.

Configuration of Test Setup



EUT

Block Diagram of Test Setup



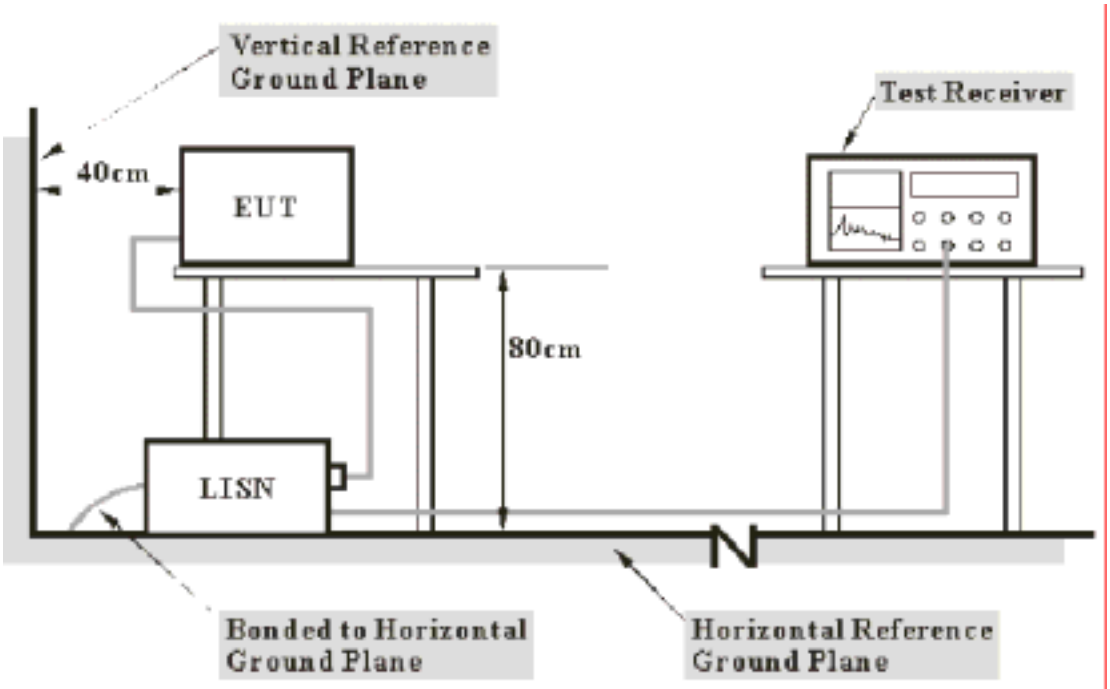
CONDUCTED EMISSION

Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, and LISN.

Based on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any conducted emissions measurement at Bay Area Compliance Lab Corp. (ShenZhen) is ±2.4 dB.

EUT Setup



Note: 1. Support units were connected to second LISN.
2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

The setup of EUT is according with MP-5: 1986 measurement procedure. Specification used was with the FCC Part 18 limits.

The EUT was connected to a 120 VAC/ 60Hz power source.

EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 450 kHz to 30 MHz.

During the conducted emission test, the EMI test receiver was set with the following configurations:

Frequency Range	***IFBW***
450 kHz – 30 MHz	9 kHz

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Com-Power	L.I.S.N.	LI-200	12005	N/A	N/A
Com-Power	L.I.S.N.	LI-200	12008	N/A	N/A
Rohde & Schwarz	EMI Test Receiver	ESCI	100028	2005-8-17	2006-8-17
Rohde & Schwarz	L.I.S.N.	ESH2-Z5	892107/021	2006-2-28	2007-2-28

***** Com-Power's LISN were used as the supporting equipment.
*** Statement of Traceability:** Bay Area Compliance Lab Corp. (ShenZhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

Test Procedure

During the conducted emission test, the EUT power cord was connected to the outlet of the LISN.

Maximizing procedure were performed on the six (6) highest emissions of the EUT.

All data was recorded in the Quasi-peak detection mode.

Test Results Summary

According to the recorded data in following table, the EUT complied with the FCC Part 18, with the worst margin reading of:

MAE-SP-10WL (D): **-12.00 dB** at **0.806 MHz** in the **Live** conductor mode.
MAE-SP-15WL (D): **-12.70 dB** at **0.624 MHz** in the **Live** conductor mode.
MAE-SP-20WL (D): **-10.30 dB** at **0.454 MHz** in the **Live** conductor mode.
MAE-SP-25WL (D): **-14.10 dB** at **0.806 MHz** in the **Live** conductor mode.
MAE-SG-10WL (D): **-11.90 dB** at **0.524 MHz** in the **Live** conductor mode.
MAE-SG-15WL (D): **-10.60 dB** at **0.581 MHz** in the **Live** conductor mode.
MAE-SG-20WL (D): **-11.20 dB** at **0.581 MHz** in the **Live** conductor mode.
MAE-SG-25WL (D): **-15.20 dB** at **0.461 MHz** in the **Live** conductor mode.
MAE-UB-10WL (D): **-10.00 dB** at **0.454 MHz** in the **Live** conductor mode.
MAE-UB-15WL (D): **-5.50 dB** at **0.469 MHz** in the **Neutral** conductor mode.

Test Data

Environmental Conditions

Temperature:	26° C
Relative Humidity:	54%
ATM Pressure:	940mbar

Testing was performed by Louise Lu on 2006-7-27.

Test mode: On

Model: MAE-SP-10WL (D)

LIVE CONDUCTED EMISSIONS					FCC Part 18		
Frequency	Amplitude	Detector		Phase	Limit (dBμV)		Margin
MHz	(dBμV)	QP	AV	Neutral/Live	QP	AV	dB
0.806	36.00	QP	*	Live	48.00	N/A	-12.00
0.458	34.10	QP	*	Live	48.00	N/A	-13.90
0.901	34.10	QP	*	Live	48.00	N/A	-13.90
0.799	31.40	QP	*	Neutral	48.00	N/A	-16.60
0.704	31.30	QP	*	Live	48.00	N/A	-16.70
0.671	30.50	QP	*	Live	48.00	N/A	-17.50
0.568	30.20	QP	*	Live	48.00	N/A	-17.80
0.676	30.10	QP	*	Neutral	48.00	N/A	-17.90
0.461	29.70	QP	*	Neutral	48.00	N/A	-18.30
0.595	29.50	QP	*	Neutral	48.00	N/A	-18.50
0.520	29.00	QP	*	Neutral	48.00	N/A	-19.00
0.550	27.50	QP	*	Neutral	48.00	N/A	-20.50

Model: MAE-SP-15WL (D)

LIVE CONDUCTED EMISSIONS					FCC Part 18		
Frequency	Amplitude	Detector		Phase	Limit (dBμV)		Margin
MHz	(dBμV)	QP	AV	Neutral/Live	QP	AV	dB
0.624	35.30	QP	*	Live	48.00	N/A	-12.70
0.799	34.60	QP	*	Live	48.00	N/A	-13.40
0.960	33.90	QP	*	Live	48.00	N/A	-14.10
0.650	30.60	QP	*	Neutral	48.00	N/A	-17.40
3.781	30.50	QP	*	Neutral	48.00	N/A	-17.50
3.548	29.40	QP	*	Neutral	48.00	N/A	-18.60
0.559	28.20	QP	*	Neutral	48.00	N/A	-19.80
0.866	28.20	QP	*	Neutral	48.00	N/A	-19.80
0.461	25.00	QP	*	Neutral	48.00	N/A	-23.00
1.983	25.00	QP	*	Live	48.00	N/A	-23.00
3.751	24.20	QP	*	Live	48.00	N/A	-23.80
2.165	23.90	QP	*	Live	48.00	N/A	-24.10

Model: MAE-SP-20WL (D)

LIVE CONDUCTED EMISSIONS					FCC Part 18		
Frequency	Amplitude	Detector		Phase	Limit (dBµV)		Margin
MHz	(dBµV)	QP	AV	Neutral/Live	QP	AV	dB
0.454	37.70	QP	*	Live	48.00	N/A	-10.30
0.629	36.50	QP	*	Live	48.00	N/A	-11.50
0.541	36.40	QP	*	Live	48.00	N/A	-11.60
0.819	35.30	QP	*	Live	48.00	N/A	-12.70
0.454	33.90	QP	*	Neutral	48.00	N/A	-14.10
0.450	33.70	QP	*	Neutral	48.00	N/A	-14.30
0.561	33.40	QP	*	Neutral	48.00	N/A	-14.60
0.591	32.40	QP	*	Neutral	48.00	N/A	-15.60
0.624	31.20	QP	*	Neutral	48.00	N/A	-16.80
2.498	27.20	QP	*	Live	48.00	N/A	-20.80
0.866	26.40	QP	*	Neutral	48.00	N/A	-21.60
2.325	20.70	QP	*	Live	48.00	N/A	-27.30

Model: MAE-SP-25WL (D)

LIVE CONDUCTED EMISSIONS					FCC Part 18		
Frequency	Amplitude	Detector		Phase	Limit (dBµV)		Margin
MHz	(dBµV)	QP	AV	Neutral/Live	QP	AV	dB
0.806	33.90	QP	*	Live	48.00	N/A	-14.10
0.465	32.00	QP	*	Neutral	48.00	N/A	-16.00
3.001	31.90	QP	*	Live	48.00	N/A	-16.10
0.581	31.40	QP	*	Live	48.00	N/A	-16.60
0.620	31.30	QP	*	Neutral	48.00	N/A	-16.70
0.866	31.30	QP	*	Neutral	48.00	N/A	-16.70
0.541	30.90	QP	*	Neutral	48.00	N/A	-17.10
1.300	30.40	QP	*	Live	48.00	N/A	-17.60
0.704	29.50	QP	*	Neutral	48.00	N/A	-18.50
0.516	29.30	QP	*	Live	48.00	N/A	-18.70
3.025	28.60	QP	*	Neutral	48.00	N/A	-19.40
2.271	27.70	QP	*	Live	48.00	N/A	-20.30

Model: MAE-SG-10WL (D)

LIVE CONDUCTED EMISSIONS					FCC Part 18		
Frequency	Amplitude	Detector		Phase	Limit (dBµV)		Margin
MHz	(dBµV)	QP	AV	Neutral/Live	QP	AV	dB
0.524	36.10	QP	*	Live	48.00	N/A	-11.90
0.454	35.20	QP	*	Live	48.00	N/A	-12.80
0.976	34.30	QP	*	Live	48.00	N/A	-13.70
1.100	34.00	QP	*	Live	48.00	N/A	-14.00
0.610	33.60	QP	*	Live	48.00	N/A	-14.40
0.732	33.20	QP	*	Live	48.00	N/A	-14.80
0.458	31.60	QP	*	Neutral	48.00	N/A	-16.40
0.984	28.20	QP	*	Neutral	48.00	N/A	-19.80
0.819	27.10	QP	*	Neutral	48.00	N/A	-20.90
0.880	26.90	QP	*	Neutral	48.00	N/A	-21.10
0.704	24.70	QP	*	Neutral	48.00	N/A	-23.30
1.364	24.70	QP	*	Neutral	48.00	N/A	-23.30

Model: MAE-SG-15WL (D)

LIVE CONDUCTED EMISSIONS					FCC Part 18		
Frequency	Amplitude	Detector		Phase	Limit (dBµV)		Margin
MHz	(dBµV)	QP	AV	Neutral/Live	QP	AV	dB
0.581	37.40	QP	*	Live	48.00	N/A	-10.60
0.492	36.30	QP	*	Live	48.00	N/A	-11.70
0.682	35.90	QP	*	Live	48.00	N/A	-12.10
0.976	35.60	QP	*	Live	48.00	N/A	-12.40
0.768	35.50	QP	*	Live	48.00	N/A	-12.50
0.516	35.30	QP	*	Neutral	48.00	N/A	-12.70
0.458	34.30	QP	*	Neutral	48.00	N/A	-13.70
0.852	32.20	QP	*	Live	48.00	N/A	-15.80
0.799	32.10	QP	*	Neutral	48.00	N/A	-15.90
0.660	31.10	QP	*	Neutral	48.00	N/A	-16.90
1.331	28.90	QP	*	Neutral	48.00	N/A	-19.10
0.983	24.70	QP	*	Neutral	48.00	N/A	-23.30

Model: MAE-SG-20WL (D)

LIVE CONDUCTED EMISSIONS					FCC Part 18		
Frequency	Amplitude	Detector		Phase	Limit (dBµV)		Margin
MHz	(dBµV)	QP	AV	Neutral/Live	QP	AV	dB
0.581	36.80	QP	*	Live	48.00	N/A	-11.20
0.666	36.70	QP	*	Live	48.00	N/A	-11.30
0.738	36.10	QP	*	Live	48.00	N/A	-11.90
0.500	35.60	QP	*	Live	48.00	N/A	-12.40
0.930	34.80	QP	*	Live	48.00	N/A	-13.20
0.461	33.60	QP	*	Neutral	48.00	N/A	-14.40
0.629	33.40	QP	*	Neutral	48.00	N/A	-14.60
2.479	30.10	QP	*	Live	48.00	N/A	-17.90
1.074	26.60	QP	*	Neutral	48.00	N/A	-21.40
2.420	26.40	QP	*	Neutral	48.00	N/A	-21.60
1.321	25.50	QP	*	Neutral	48.00	N/A	-22.50
2.031	24.10	QP	*	Neutral	48.00	N/A	-23.90

Model: MAE-SG-25WL (D)

LIVE CONDUCTED EMISSIONS					FCC Part 18		
Frequency	Amplitude	Detector		Phase	Limit (dBµV)		Margin
MHz	(dBµV)	QP	AV	Neutral/Live	QP	AV	dB
0.461	32.80	QP	*	Live	48.00	N/A	-15.20
0.469	32.10	QP	*	Neutral	48.00	N/A	-15.90
0.545	31.20	QP	*	Neutral	48.00	N/A	-16.80
0.577	30.10	QP	*	Neutral	48.00	N/A	-17.90
0.516	29.90	QP	*	Live	48.00	N/A	-18.10
0.901	29.30	QP	*	Neutral	48.00	N/A	-18.70
0.624	29.00	QP	*	Neutral	48.00	N/A	-19.00
0.732	27.60	QP	*	Neutral	48.00	N/A	-20.40
2.271	26.20	QP	*	Live	48.00	N/A	-21.80
0.852	25.90	QP	*	Live	48.00	N/A	-22.10
0.774	25.50	QP	*	Live	48.00	N/A	-22.50
1.015	25.00	QP	*	Live	48.00	N/A	-23.00

Model: MAE-UB-10WL (D)

LIVE CONDUCTED EMISSIONS					FCC Part 18		
Frequency	Amplitude	Detector		Phase	Limit (dBµV)		Margin
MHz	(dBµV)	QP	AV	Neutral/Live	QP	AV	dB
0.454	38.00	QP	*	Live	48.00	N/A	-10.00
0.550	37.70	QP	*	Neutral	48.00	N/A	-10.30
0.532	37.30	QP	*	Live	48.00	N/A	-10.70
0.915	36.60	QP	*	Neutral	48.00	N/A	-11.40
0.577	35.30	QP	*	Live	48.00	N/A	-12.70
0.461	34.10	QP	*	Neutral	48.00	N/A	-13.90
1.321	32.90	QP	*	Neutral	48.00	N/A	-15.10
0.787	32.60	QP	*	Live	48.00	N/A	-15.40
0.781	29.90	QP	*	Neutral	48.00	N/A	-18.10
1.144	29.80	QP	*	Neutral	48.00	N/A	-18.20
0.693	29.50	QP	*	Live	48.00	N/A	-18.50
9.837	28.60	QP	*	Live	48.00	N/A	-19.40

Model: MAE-UB-15WL (D)

LIVE CONDUCTED EMISSIONS					FCC Part 18		
Frequency	Amplitude	Detector		Phase	Limit (dBµV)		Margin
MHz	(dBµV)	QP	AV	Neutral/Live	QP	AV	dB
0.469	42.50	QP	*	Neutral	48.00	N/A	-5.50
0.528	41.70	QP	*	Neutral	48.00	N/A	-6.30
0.469	41.40	QP	*	Live	48.00	N/A	-6.60
0.528	39.40	QP	*	Live	48.00	N/A	-8.60
0.650	38.20	QP	*	Neutral	48.00	N/A	-9.80
0.586	35.90	QP	*	Live	48.00	N/A	-12.10
0.709	31.40	QP	*	Live	48.00	N/A	-16.60
0.983	31.10	QP	*	Live	48.00	N/A	-16.90
1.210	30.90	QP	*	Neutral	48.00	N/A	-17.10
1.091	30.80	QP	*	Live	48.00	N/A	-17.20
1.952	28.60	QP	*	Neutral	48.00	N/A	-19.40
3.049	26.60	QP	*	Neutral	48.00	N/A	-21.40

.**REMARKS:**

1. If the data table appeared symbol "*" means the value was too low and the QP value is under the limit for Average, so the Average level value had been omitted.

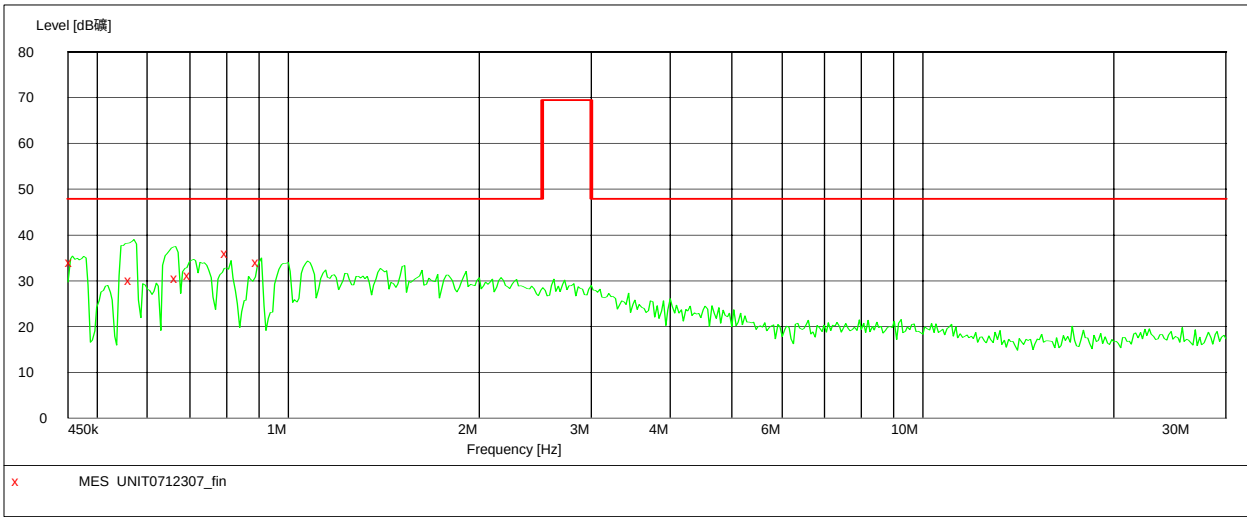
Plot(s) of Test Data

Plot(s) of Test Data is presented hereinafter as reference..

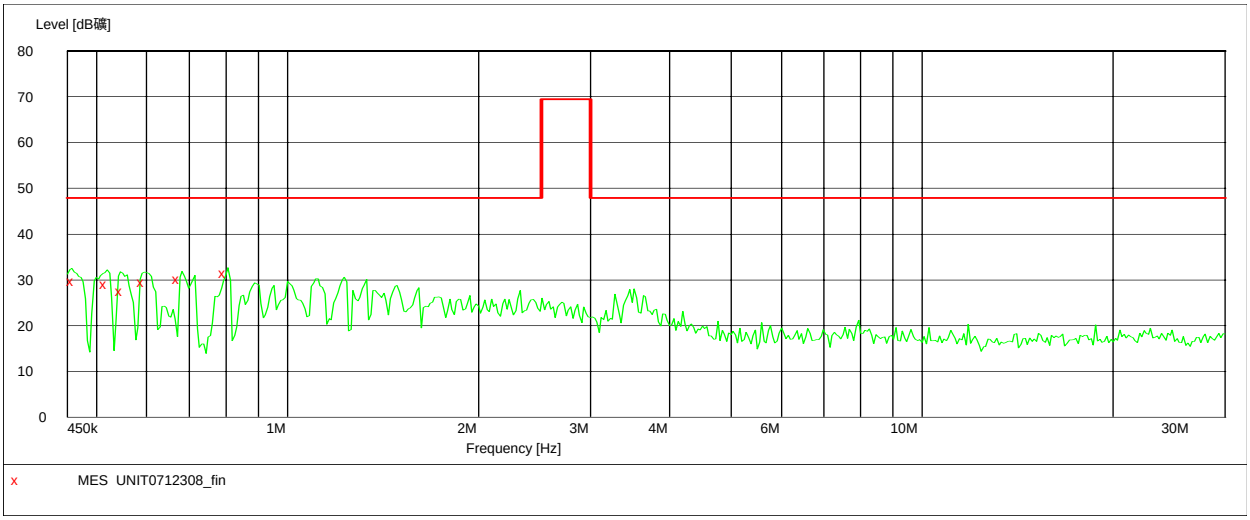
Model: MAE-SP-10WL (D)

Scan range: 450KHz-30MHz

Live



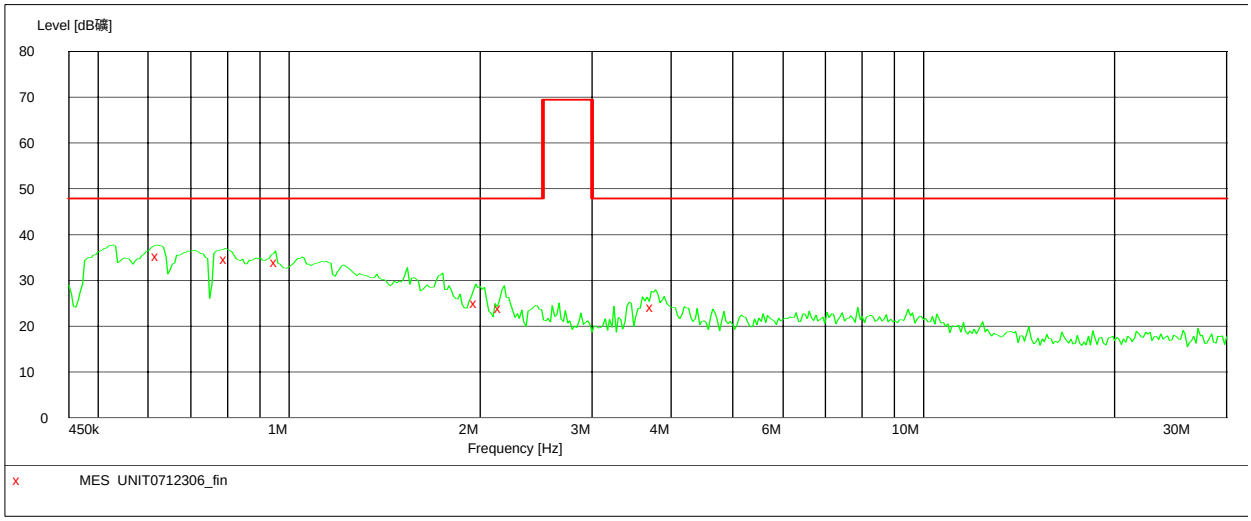
Neutral



Model: MAE-SP-15WL (D)

Scan range: 450KHz-30MHz

Live:



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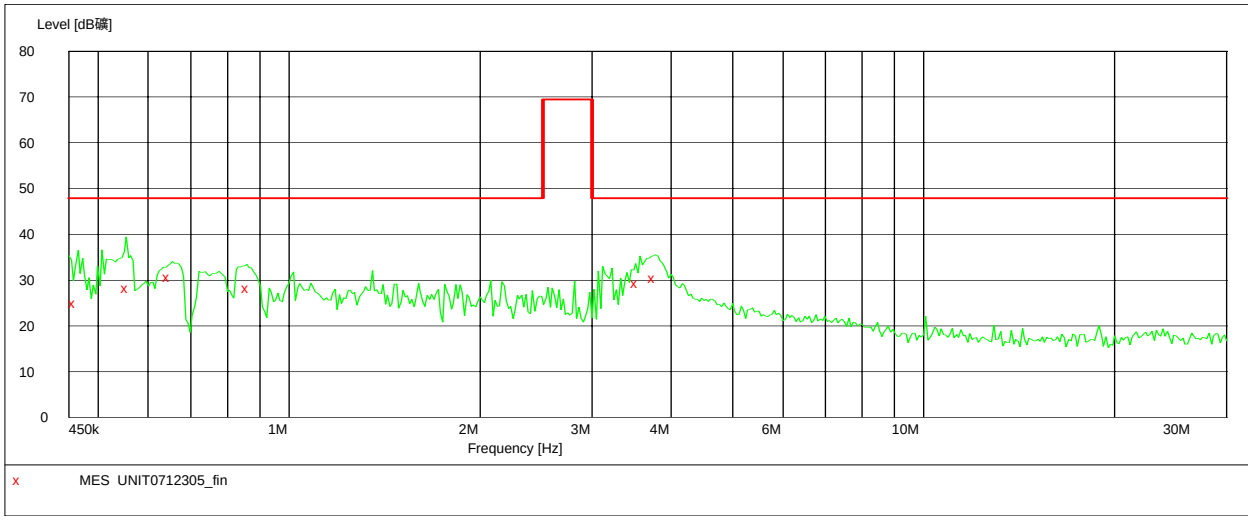
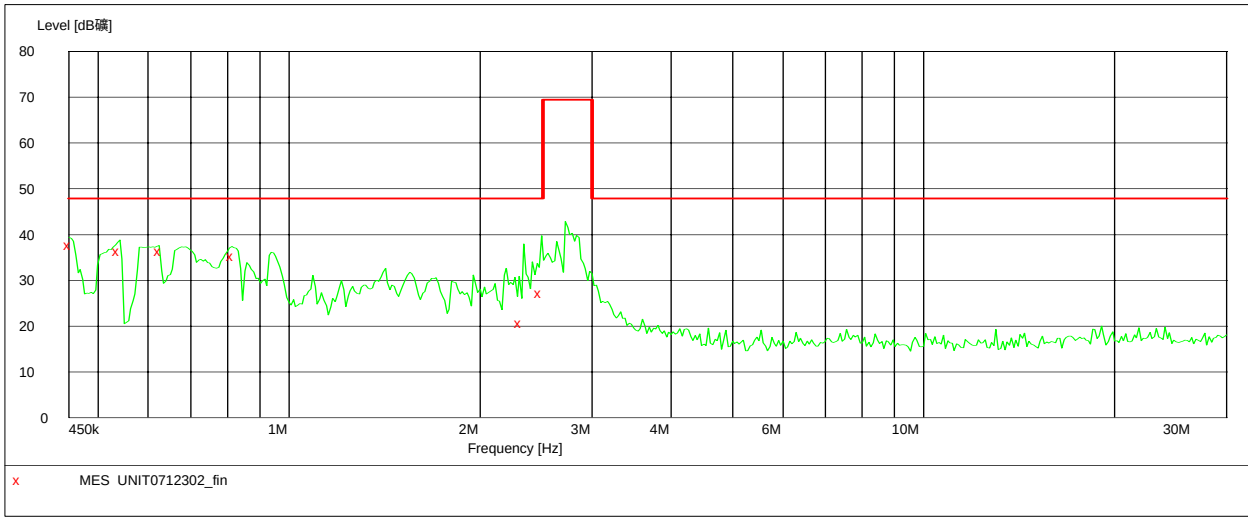


Model: MAE-SP-20WL (D)

Scan range: 450KHz-30MHz

Live:



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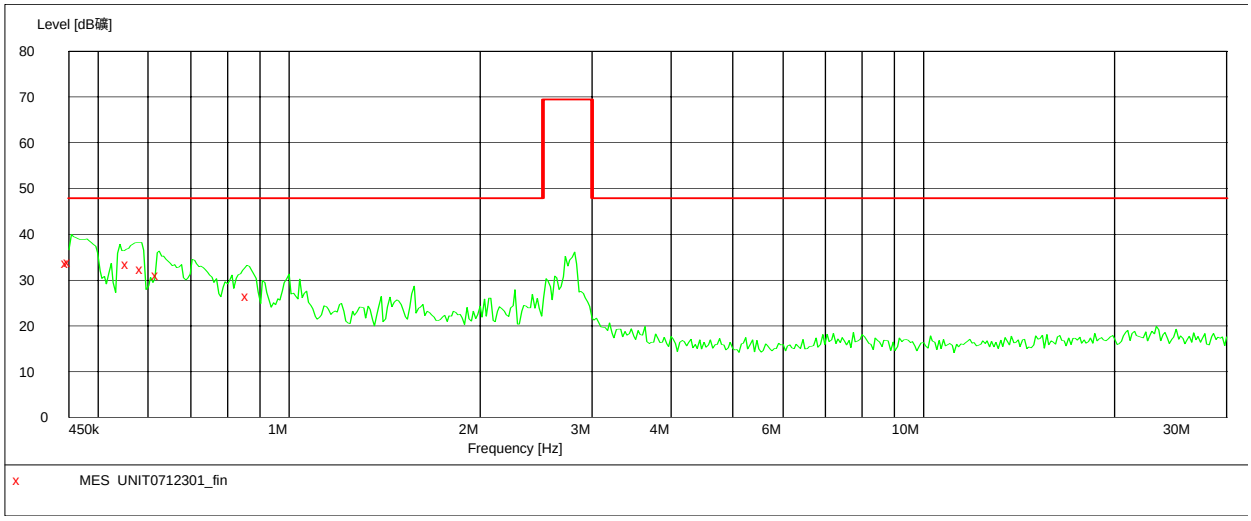
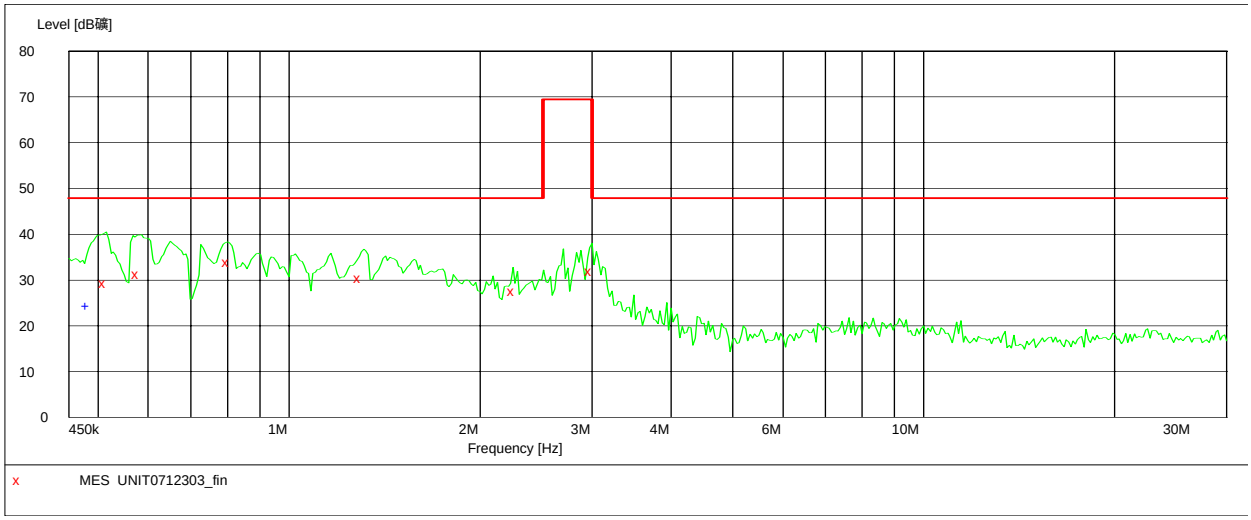


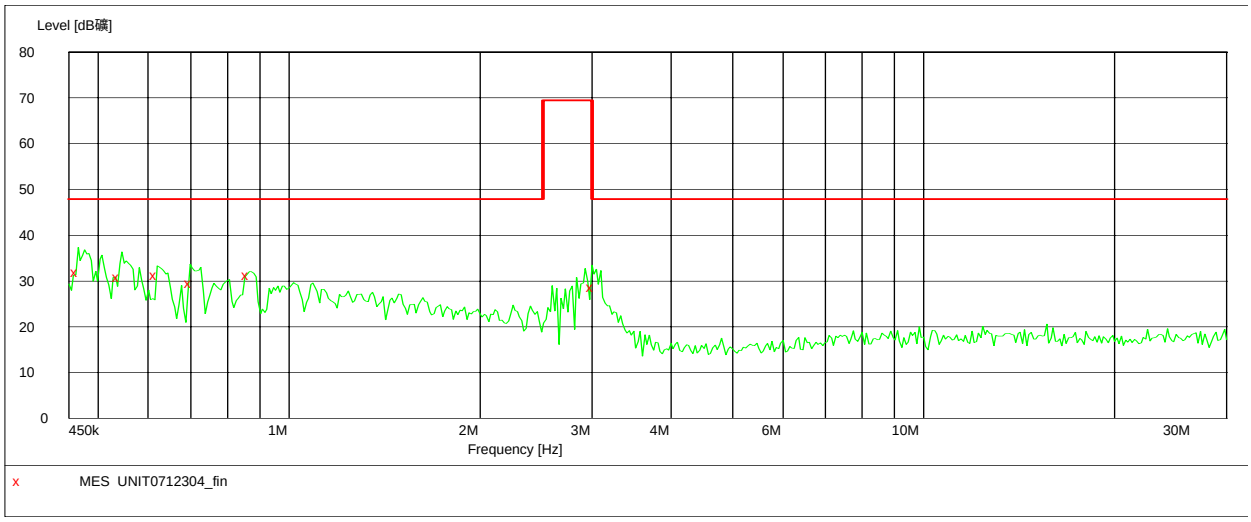
Model: MAE-SP-25WL (D)

Scan range: 450KHz-30MHz

Live:



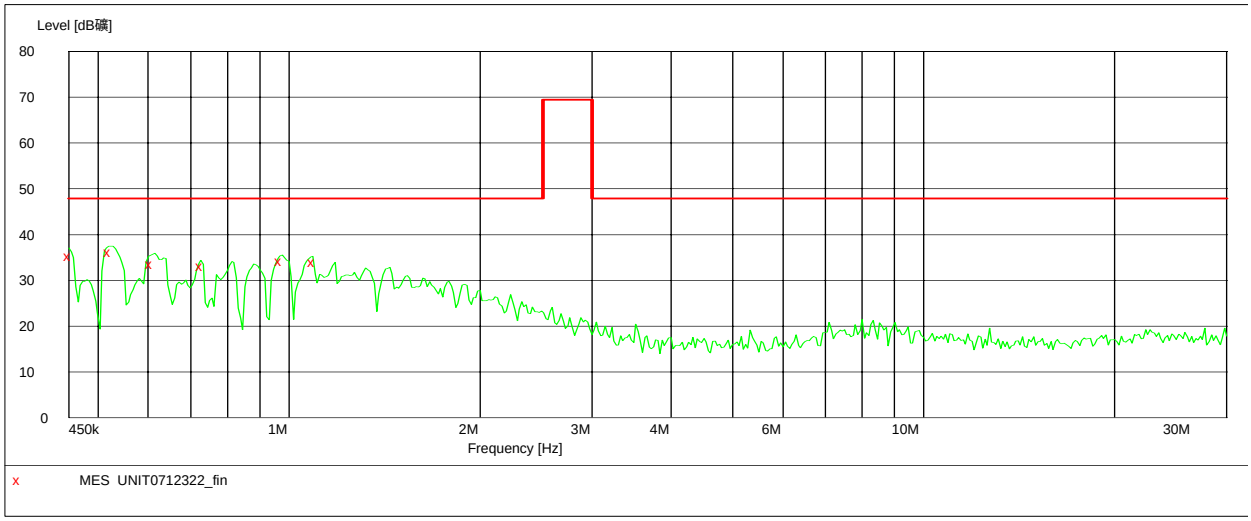
Neutral:



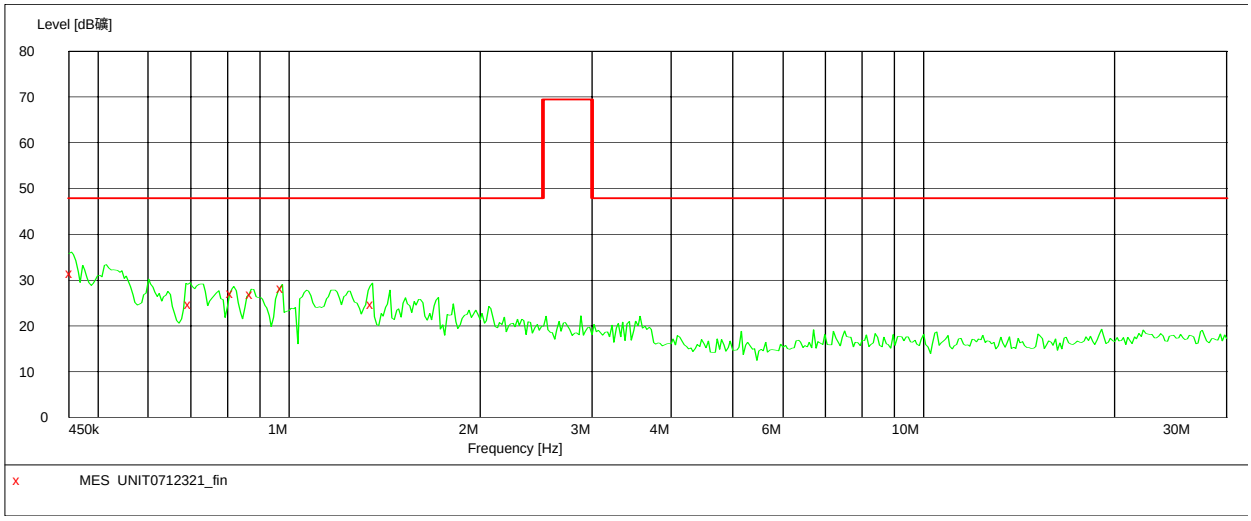
Model: MAE-SG-10WL (D)

Scan range: 450KHz-30MHz

Live:



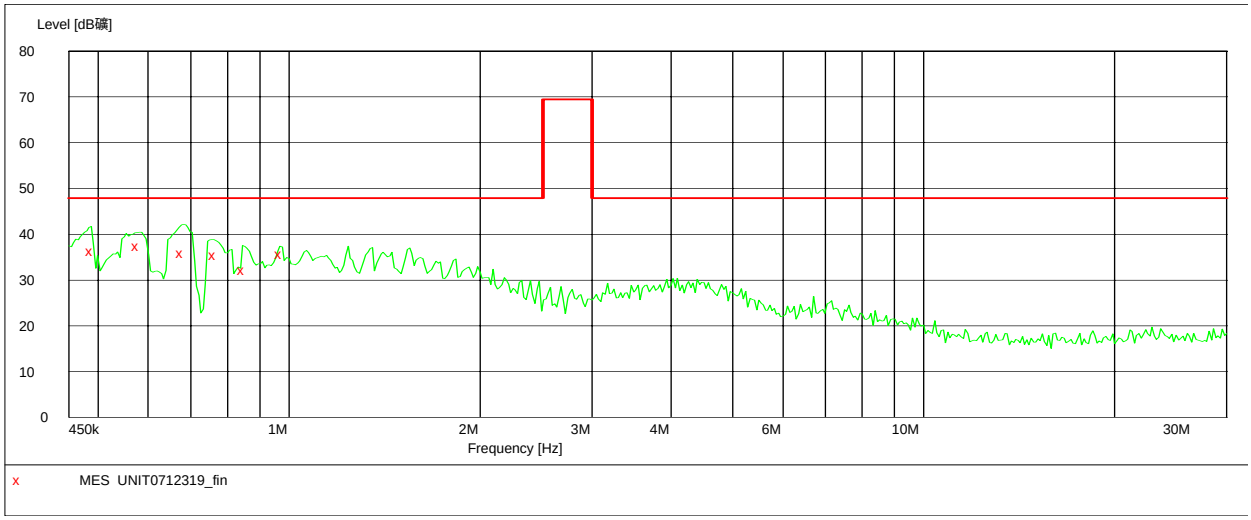
Neutral:



Model: MAE-SG-15WL (D)

Scan range: 450KHz-30MHz

Live:



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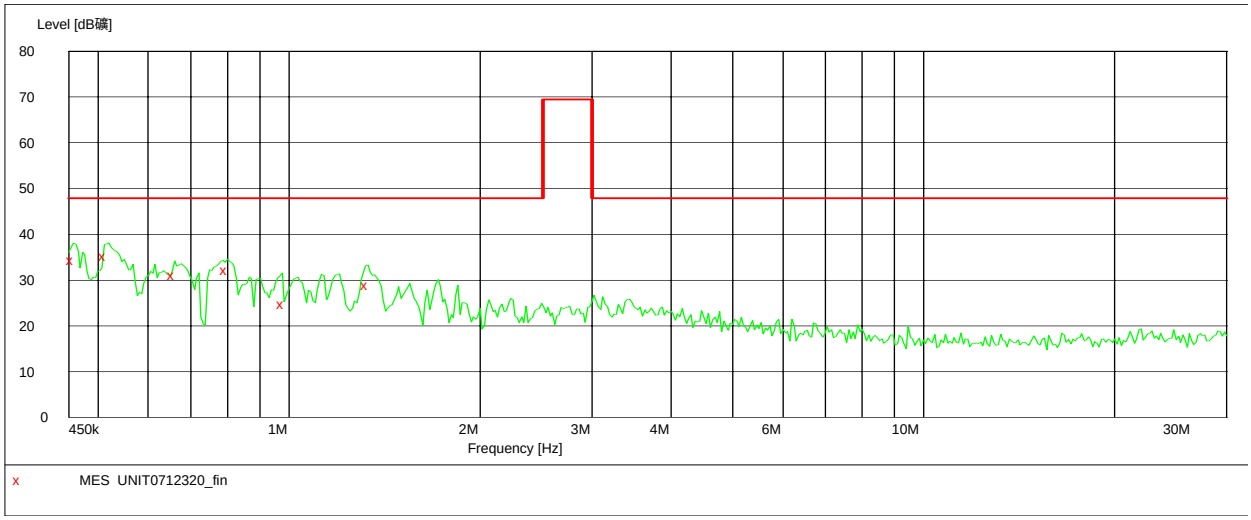

Model: MAE-SG-20WL (D)

Scan range: 450KHz-30MHz

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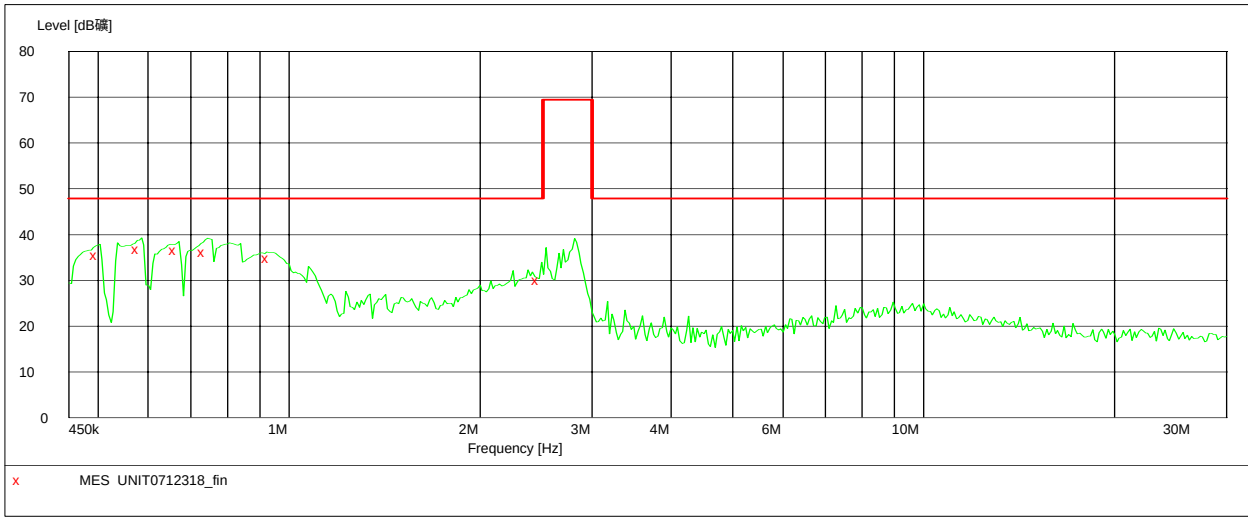

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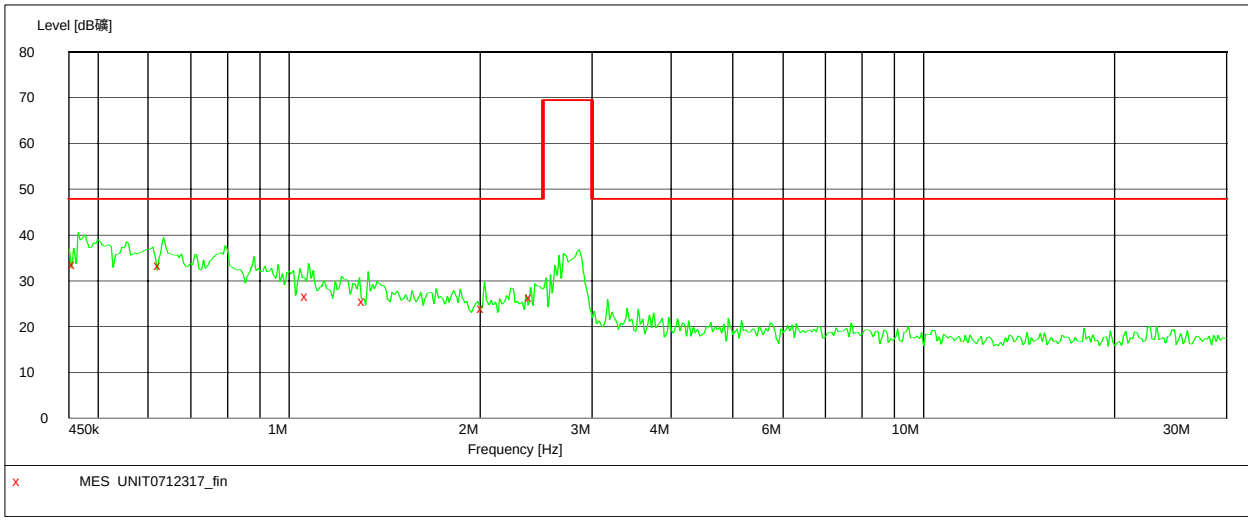
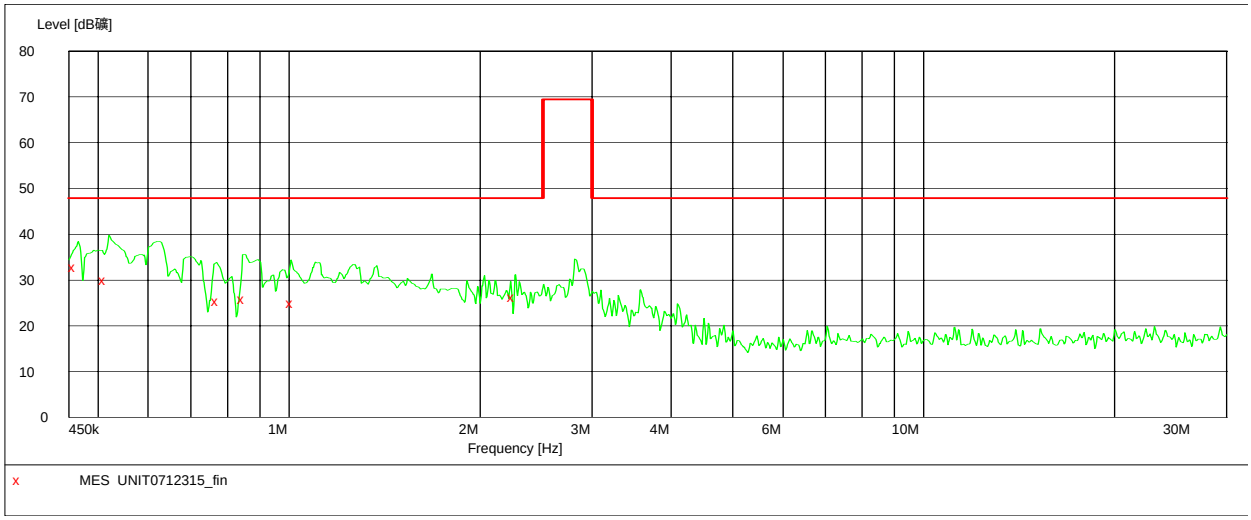


Model: MAE-SG-25WL (D)

Scan range: 450KHz-30MHz

Live:



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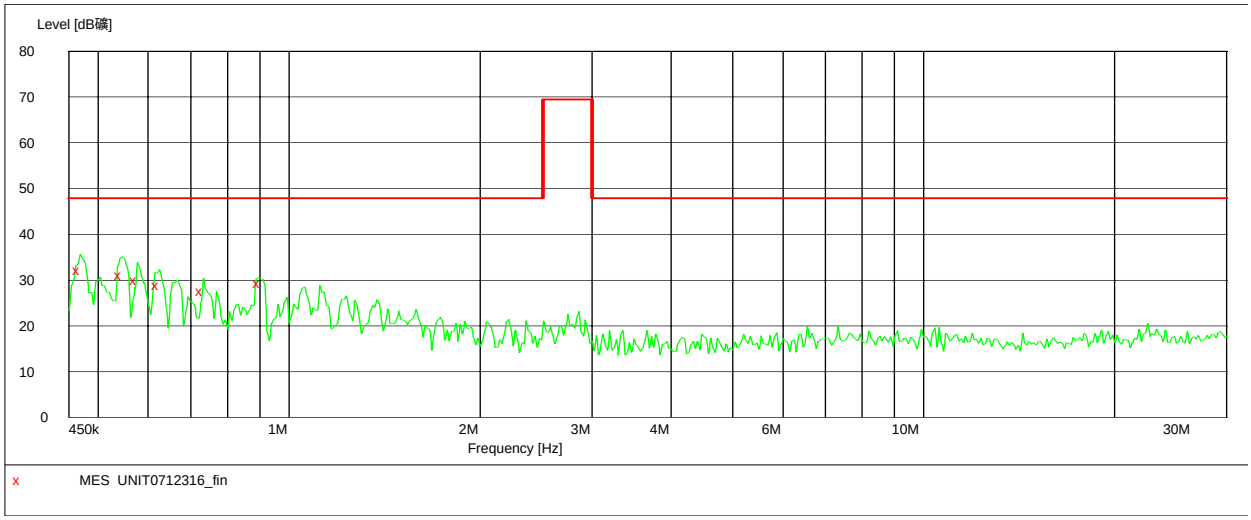
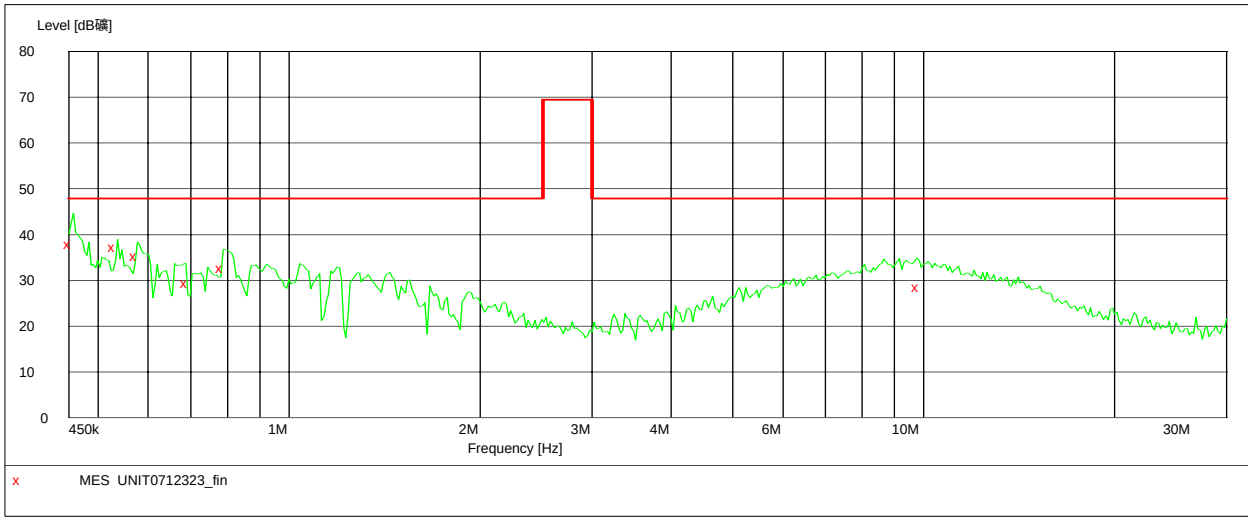


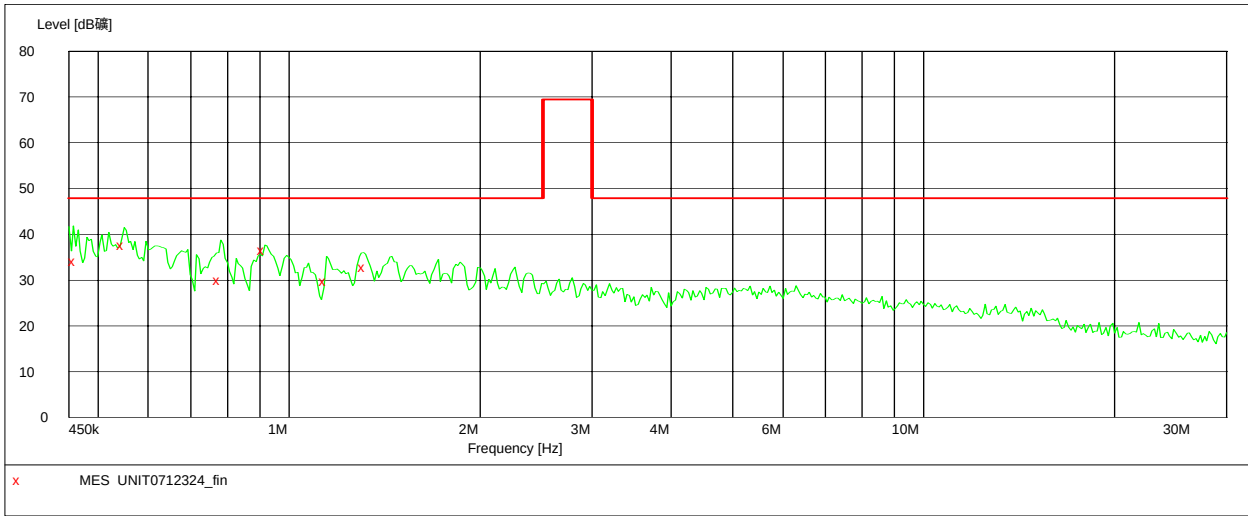
Model: MAE-UB-10WL (D)

Scan range: 450KHz-30MHz

Live:



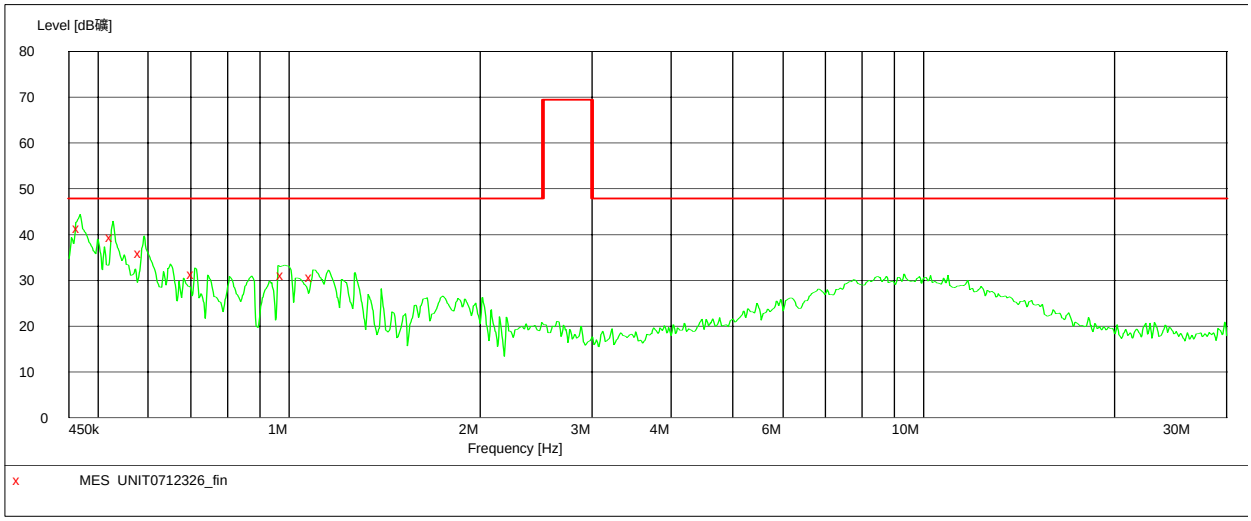
Neutral:



Model: MAE-UB-15WL (D)

Scan range: 450KHz-30MHz

Live:



Neutral: