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Report No.: GZEM160400166906
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TEST REPORT

Application No.: GZEM1712007225HS
Applicant: GD Midea Air-conditioning Equipment Co., Ltd.
Address of Applicant: Lingang Road, Beijiao, Shunde, Foshan, 528311, Guangdong, China
Manufacturer: The same as Applicant
Address of Manufacturer: The same as Applicant
Factory: The same as Applicant
Address of Factory: The same as Applicant
Equipment Under Test (EUT):
EUT Name: Air conditioner
Model No.: Please refer to Page 2 for all models.
Trade Mark: Midea
Standards: EN 55014-1:2017, EN 55014-2:2015, EN 61000-3-2:2014,
EN 61000-3-3:2013, EN 61000-3-12:2011, EN 61000-3-11:2000.
Date of Receipt: 2017-11-19
Date of Test: 2017-11-20 to 2017-12-06
Date of Issue: 2016-07-19 (for the report GZEM160400166901)
2016-12-13 (for the report GZEM160400166902)
2017-01-10 (for the report GZEM160400166903)
2017-09-29 (for the report GZEM160400166904)
2017-12-28 (for the report GZEM160400166905)
2018-01-22 (for the report GZEM160400166906)

Test Result :	Pass*
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* In the configuration tested, the EUT complied with the standards specified above.

The CE mark as shown below can be used, under the responsibility of the manufacturer, after completion of an EU Declaration of Conformity and compliance with all relevant EU Directives.



Kobe Jian
EMC Laboratory Manager

The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of SGS International Electrical Approvals or testing done by SGS International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by SGS International Electrical Approvals in writing. The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government. All test results in this report can be traceable to National or International Standards.



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Model No.:

Indoor Unit: MSABAU-09HRFN8-QRD0GW, MSABBU-12HRFN8-QRD0GW, MSABDU-18HRFN8-QRD0GW, MSABEU-24HRFN8-QRD0GW, MCA3I-09HRFN8-QRD0, MCA3U-12HRFN8-QRD0W, MCA3I-18HRFN8-QRC8W, MSAEBU-09HRFN8-QRD6GW, MSAEBU-12HRFN8-QRD6GW, MSAECU-18HRFN8-QRD0GW, MSABAU-09HRFNX-QRD0GW, MSABBU-12HRFNX-QRD0GW, MSABDU-18HRFNX-QRD0GW, MSABEU-24HRFNX-QRD0GW, MSAEAU-09HRFNX-QRD0GW, MSAEBU-12HRFNX-QRD0GW, MSAECU-18HRFNX-QRD0GW, MSAEDU-24HRFNX-QRD0GW, MCA3I-09HRFNX-QRD0, MCA3U-12HRFNX-QRD0W, MCA3U-18HRFNX-QRC8W, B-MSABAU-09HRFNX-QRD0GW, B-MSABBU-12HRFNX-QRD0GW, B-MSABDU-18HRFNX-QRD0GW, B-MSABEU-24HRFNX-QRD0GW, B-MCA3I-09HRFNX-QRD0, B-MCA3U-12HRFNX-QRD0W, B-MCA3U-18HRFNX-QRC8W, MCA3U-18HRFN8-QRC8W, MSAFBU-09HRDN8-QRD0GW, MSAFBU-12HRDN8-QRD0GW, MSAFCU-18HRFN8-QRD0GW, MSAFDU-24HRFN8-QRD0GW, MSAFBU-09HRDNX-QRD0GW, MSAFBU-12HRDNX-QRD0GW, MSAFCU-18HRFNX-QRD0GW, MSAFDU-24HRFNX-QRD0GW,
Outdoor Unit: M3OE-27HFN8-Q, M2OC-18HFN8-Q, M4OB-36HFN8-Q, M5OD-42HFN8-Q, B-M2OC-18HFN8-Q, B-M3OE-27HFN8-Q, B-M4OB-36HFN8-Q, B-M5OD-42HFN8-Q. ▣
Please refer to section 3 of this report for details.

▣

Revision Record				
Version	Chapter	Date	Modifier	Remark
00		2016-07-19		Original
01		2016-12-13		Copy report: Added new models.
02		2017-01-10		Copy report: Added new indoor units.
03		2017-09-29		Copy report: Added appearance photo, changed address and added new indoor units and outdoor units.
04		2017-12-28		Copy report: updated standard and added one new indoor unit.
05		2018-01-22		Copy report: added new indoor units.

Authorized for issue by:			
Tested By			2017-11-20 to 2017-12-06
	Owen Huang /Project Engineer		Date
Checked By			2018-01-15
	Cherie Luo /Reviewer		Date

2 Test Summary

Emission Part				
Item	Standard	Method	Requirement	Result
Conducted Disturbance at Mains Terminals (150kHz-30MHz)	EN 55014-1:2017	CISPR 16-2-1	N/A	Pass
Conducted Disturbance at Load Terminals and Additional Terminals	EN 55014-1:2017	CISPR 16-2-1	N/A	Pass
Disturbance Power	EN 55014-1:2017	CISPR 16-2-2	N/A	Pass
Discontinuous Disturbance (150kHz-30MHz)	EN 55014-1:2017	EN 55014-1:2017	N/A	Pass
Harmonic Current Emission	EN 61000-3-12:2011	EN 61000-3-12:2011	Class A	Pass
Voltage Fluctuations and Flicker	EN 61000-3-11:2000	EN 61000-3-11:2000	Clause 6.2	Pass

N/A: Not applicable

Immunity Part				
Item	Standard	Method	Requirement	Result
Electrostatic Discharge	EN 55014-2:2015	EN 61000-4-2:2009	4kV Contact Discharge 8kV Air Discharge	Pass
Electrical Fast Transients/Burst at Power Port and Signal lines	EN 55014-2:2015	EN 61000-4-4:2012	AC cable: ± 1.0 kV Signal lines: ± 0.5 kV 5/50ns Tr/Th 5kHz Repetition Frequency	Pass
Surge at Power Port	EN 55014-2:2015	EN 61000-4-5:2014	1.2/50 μ s Tr/Th 1kV Line to Line 2kV Line to Ground	Pass
Conducted Immunity at Power Port and Signal lines(150kHz-230MHz)	EN 55014-2:2015	EN 61000-4-6:2014	AC: 3V r.m.s (emf), Signal lines: 1V r.m.s (emf), 80%, 1kHz Amp. Mod.	Pass
Voltage Dips and Interruptions	EN 55014-2:2015	EN 61000-4-11:2004	0 % UT for 0.5per 40 % UT for 10per 70 % UT for 25per UT is Supply Voltage	Pass

Remark for report GZEM160400166901

Indoor Unit:

MSABAU-09HRFN8-QRD0GW, MSABBU-12HRFN8-QRD0GW, MSABDU-18HRFN8-QRD0GW, MCA3I-09HRFN8-QRD0, MCA3U-12HRFN8-QRD0W, MCA3I-18HRFN8-QRC8W

Outdoor Unit:

M3OE-27HFN8-Q, M2OC-18HFN8-Q

According to the declaration from the applicant, the electrical circuit design, layout, components used and internal wiring were identical for models MCA3I-09HRFN8-QRD0 & MCA3U-12HRFN8-QRD0W, with only difference being the model name.

Therefore only models **shown as below** were tested in the report.

No. (In this whole report):	Outdoor Unit:	Indoor Unit:	No. (In this whole report):
#1:	M3OE-27HFN8-Q	MSABAU-09HRFN8-QRD0GW	Indoor Unit 1
		MSABBU-12HRFN8-QRD0GW	Indoor Unit 2
		MSABDU-18HRFN8-QRD0GW	Indoor Unit 3
#2:	M2OC-18HFN8-Q	MCA3I-09HRFN8-QRD0	Indoor Unit 1
		MCA3I-18HRFN8-QRC8W	Indoor Unit 2

Remark for report GZEM160400166902

♣ This report GZEM160400166902 was a supplement report based on and only valid with original report GZEM160400166901, only added new models as below:

Indoor Unit: MSABEU-24HRFN8-QRD0GW

Outdoor Unit: M4OB-36HFN8-Q, M5OD-42HFN8-Q

According to the declaration from the applicant, the new models added in updated report were totally different with the original models.

Therefore new full tests were performed on models **shown as below** in updated report.

No. (In this whole report):	Outdoor Unit:	Indoor Unit:	No. (In this whole report):
#3:	M4OB-36HFN8-Q	MSABAU-09HRFN8-QRD0GW	Indoor Unit 1
		MSABAU-09HRFN8-QRD0GW	Indoor Unit 1
		MSABBU-12HRFN8-QRD0GW	Indoor Unit 2
		MSABDU-18HRFN8-QRD0GW	Indoor Unit 3
#4:	M5OD-42HFN8-Q	MSABAU-09HRFN8-QRD0GW	Indoor Unit 1
		MSABBU-12HRFN8-QRD0GW	Indoor Unit 2
		MSABDU-18HRFN8-QRD0GW	Indoor Unit 3
		MSABEU-24HRFN8-QRD0GW	Indoor Unit 4

Only new data was shown in this report, other data please refer to original report for details.

Remark for report GZEM160400166903

This report GZEM160400166903 was a supplement report based on and only valid with original report GZEM160400166902, only added new indoor units as below:

Indoor Units:

MSAEBU-09HRFN8-QRD6GW, MSAEBU-12HRFN8-QRD6GW, MSAECU-18HRFN8-QRD0GW, MSAEDU-24HRFN8-QRD0GW

According to the declaration from the applicant, the new models added in updated report were totally different with the original models, but for the new models MSAEBU-09HRFN8-QRD6GW and MSAEBU-12HRFN8-QRD6GW were totally the same, except for the model name.

Full test was performed on below collocation in this report.

No. (In this whole report):	Outdoor Unit:	Indoor Unit:	No. (In this whole report):
#5:	M5OD-42HFN8-Q	MSAEBU-09HRFN8-QRD6GW	Indoor Unit 1
		MSAEBU-12HRFN8-QRD6GW	Indoor Unit 2
		MSAECU-18HRFN8-QRD0GW	Indoor Unit 3
		MSAEDU-24HRFN8-QRD0GW	Indoor Unit 4

Only new data was shown in this report, other data please refer to original report for details.

Remark for the report GZEM160400166904

This report GZEM160400166904 was an additional report copied from the previous report GZEM160400166903, in which address of Applicant & Manufacturer & Factory and new indoor units & outdoor units were supplemented.

1. Changed address of Applicant & Manufacturer & Factory:

Address of Applicant & Manufacturer & Factory in previous report	Address of Applicant & Manufacturer & Factory in updated report
Midea Industrial City, Beijiao, Shunde, Foshan, 528311 Guangdong, China	Lingang Road, Beijiao, Shunde, Foshan, 528311, Guangdong, China

2. Added new models:

Units	Model No. in previous report	Model No. added in updated report	Remark of difference
Indoor Units	MSABAU-09HRFN8-QRD0GW	MSABAU-09HRFNX-QRD0GW	Model name
	MSABBU-12HRFN8-QRD0GW	MSABBU-12HRFNX-QRD0GW	
	MSABDU-18HRFN8-QRD0GW	MSABDU-18HRFNX-QRD0GW	
	MSABEU-24HRFN8-QRD0GW	MSABEU-24HRFNX-QRD0GW	
	MSAEBU-09HRFN8-QRD6GW	MSAEAU-09HRFNX-QRD0GW	
	MSAEBU-12HRFN8-QRD6GW	MSAEBU-12HRFNX-QRD0GW	
	MSAECU-18HRFN8-QRD0GW	MSAECU-18HRFNX-QRD0GW	
	MSAEDU-24HRFN8-QRD0GW	MSAEDU-24HRFNX-QRD0GW	
	MCA3I-09HRFN8-QRD0	MCA3I-09HRFNX-QRD0	
	MCA3U-12HRFN8-QRD0W	MCA3U-12HRFNX-QRD0W	
	MCA3I-18HRFN8-QRC8W	MCA3I-18HRFNX-QRC8W	
	MSABAU-09HRFN8-QRD0GW	B-MSABAU-09HRFNX-QRD0GW	Model name and panel
	MSABBU-12HRFN8-QRD0GW	B-MSABBU-12HRFNX-QRD0GW	
	MSABDU-18HRFN8-QRD0GW	B-MSABDU-18HRFNX-QRD0GW	
	MSABEU-24HRFN8-QRD0GW	B-MSABEU-24HRFNX-QRD0GW	
	MCA3I-09HRFN8-QRD0	B-MCA3I-09HRFNX-QRD0	Model name
	MCA3U-12HRFN8-QRD0W	B-MCA3U-12HRFNX-QRD0W	
	MCA3I-18HRFN8-QRC8W	B-MCA3I-18HRFNX-QRC8W	
Outdoor Units	M2OC-18HFN8-Q	B-M2OC-18HFN8-Q	Model name
	M3OE-27HFN8-Q	B-M3OE-27HFN8-Q	
	M4OB-36HFN8-Q	B-M4OB-36HFN8-Q	
	M5OD-42HFN8-Q	B-M5OD-42HFN8-Q	

According to the declaration of the applicant, the Models listed in each row of above table were identical, with only difference being the model name.

Therefore original data was kept in this report GZEM160400166904

Remark for the report GZEM160400166905

This report GZEM160400166905 was an additional report based on the previous report GZEM160400166904, just updated standard and added one new indoor unit.

1. Updated standard:

Standard in previous report	Standard in updated report
EN 55014-1:2006 +A1:2009+A2:2011	EN 55014-1:2017

Reviewed the updated standards, all the technical requirements for the product between original and the newest standards' versions are identical, therefore it's acceptable to update standard(s) without further testing.

2. Added one new indoor unit: MCA3U-18HRFN8-QRC8W.

According to the declaration of the applicant, the Model **MCA3U-18HRFN8-QRC8W** supplemented in this report and **MCA3I-18HRFN8-QRC8W** in the previous report were identical, with only difference being the outer decoration.

Therefore original data was kept in this report GZEM160400166905.

▣ **Remark for the report GZEM160400166906**

This test report GZEM160400166906 is an additional report based on and only valid with the previous test report GZEM160400166905, just added new indoor units.

Details were shown as below:

1. Added new indoor units:

MSAFBU-09HRDN8-QRD0GW, MSAFBU-12HRDN8-QRD0GW, MSAFCU-18HRFN8-QRD0GW, MSAFDU-24HRFN8-QRD0GW, MSAFBU-09HRDNX-QRD0GW, MSAFBU-12HRDNX-QRD0GW, MSAFCU-18HRFNX-QRD0GW, MSAFDU-24HRFNX-QRD0GW.

According to the declaration of the applicant, the indoor units MSAFBU-09HRDN8-QRD0GW, MSAFBU-12HRDN8-QRD0GW, MSAFCU-18HRFN8-QRD0GW and MSAFDU-24HRFN8-QRD0GW supplemented in this report and indoor units in the previous report were totally different, therefore below the worse case were chosen by client and full tests were performed on below collocation in this report.

Collocation 1:

OU: M4OB-36HFN8-Q,

IU: MSAFBU-09HRDN8-QRD0GW, MSAFBU-09HRDN8-QRD0GW, MSAFBU-12HRDN8-QRD0GW, MSAFCU-18HRFN8-QRD0GW,

Collocation 2:

OU: M5OD-42HFN8-Q,

IU: MSAFBU-09HRDN8-QRD0GW, MSAFBU-09HRDN8-QRD0GW, MSAFBU-12HRDN8-QRD0GW, MSAFDU-24HRFN8-QRD0GW.

In addition, indoor units in each row of below table were identical, except for the model name.

Model No. added in updated report	Model No. added in updated report
MSAFBU-09HRDN8-QRD0GW	MSAFBU-09HRDNX-QRD0GW
MSAFBU-12HRDN8-QRD0GW	MSAFBU-12HRDNX-QRD0GW
MSAFCU-18HRFN8-QRD0GW	MSAFCU-18HRFNX-QRD0GW
MSAFDU-24HRFN8-QRD0GW	MSAFDU-24HRFNX-QRD0GW

For original test data please refer to the report GZEM160400166905.

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4 General Information

4.1 Details of E.U.T.

Power Supply:	Outdoor Unit: AC 220-240V, 50Hz
Power Port:	Outdoor Unit: 3 wires x about 1.8m unscreened AC mains cable
Interconnection cord:	5.0m unscreened interconnection cable.

4.2 Description of Support Units

The EUT has been tested as an independent unit.

4.3 Standards Applicable for Testing

Table 1 : Tests Carried Out Under EN 55014-1:2017

Item	Status
Conducted Disturbance at Mains Terminals (9kHz-30MHz)	×
Conducted Disturbance at Mains Terminals (150kHz-30MHz)	✓
Conducted Disturbance at Load Terminals and Additional Terminals	✓
Discontinuous Disturbance (150kHz-30MHz)	✓
Disturbance Power	✓
Radiated Disturbance (30MHz-1GHz)	×
Radiated Disturbance (Magnetic field Induced Current) (9kHz-30MHz)	×

Table 2 : Tests Carried Out Under EN 55014-2:2015

Item	Status
Electrostatic Discharge	✓
Radiated Immunity (80MHz-1GHz)	×
Electrical Fast Transients/Burst at Power Port	✓
Electrical Fast Transients/Burst at Signal Port	✓
Surge at Power Port	✓
Conducted Immunity at Power Port (150kHz-80MHz)	×
Conducted Immunity at Signal Port (150kHz-80MHz)	×
Voltage Dips and Interruptions	✓
Conducted Immunity at Power Port (150kHz-230MHz)	✓
Conducted Immunity at Signal Port (150kHz-230MHz)	✓
Electrical Fast Transients/Burst at DC port	×
Conducted Immunity at DC Port (150kHz-80MHz)	×

Table 3 : Tests Carried Out Under EN 61000-3-2:2014

Item	Status
Harmonic Current Emission	√

Table 4 : Tests Carried Out Under EN 61000-3-3:2013

Item	Status
Voltage Fluctuations and Flicker	√

- × Indicates that the test is not applicable
- √ Indicates that the test is applicable

4.4 Test Location

All tests were performed at:
 Test center of GD Midea Air-conditioning Equipment Co., Ltd.
 Address: Lingang Road, Beijiao, Shunde, Foshan, 528311, Guangdong, China
 Contact Person: Wenli Yan
 Email: yanwl@midea.com
 Tel: 0757-23271145

4.5 Deviation from Standards

None

4.6 Abnormalities from Standard Conditions

None

4.7 Monitoring of EUT for All Immunity Test

Visual: Motor running and LCD display indication of the EUT.
 Audio: Sounding Beeper.

5 Equipment List

Conducted Emission & Click & Interference Power						
No.	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. date	Cal. Due date
					(YY/MM/DD)	(YY/MM/DD)
1	EMI Test Receiver	Rohde & Schwarz	ESCI	101089	2017/4/8	2018/4/7
2	EMI Test Receiver	Rohde & Schwarz	ESCI	101411	2017/4/25	2018/4/24
3	Absorbing clamp	Rohde & Schwarz	MDS21	100656	2016/7/6	2018/7/2
4	Absorbing clamp	Rohde & Schwarz	MDS21	100401	2017/6/16	2018/6/15
5	V-Networks(Artificial Mains Networks)	SCHWARZBECK	NNLK8121	8121-636	2017/4/8	2018/4/7
6	Pulse Limit	Rohde & Schwarz	ESH3-Z2	101197	2017/4/25	2018/4/24
7	Pulse Limit	Rohde & Schwarz	ESH3-Z2	101199	2017/4/25	2018/4/24
8	Pulse Limit	Rohde & Schwarz	ESH3-Z2	101198	2017/4/25	2018/4/24
9	Click Analyser	AFJ	AFJDDA55	14041605036	2017/8/1	2018/7/31
10	V-Networks(Artificial Mains Networks)	SCHWARZBECK	NNLK8121	8121-638	2017-4-25	2018-4-24
11	Assistant Absorbing clamp	luthi	FTC 101	5071	2017-4-8	2018-4-7
12	Assistant Absorbing clamp	luthi	FTC40x15E	5742	2018/2/24	2018/2/23
13	Passive voltage probe	ROHDE&SCHWARZ	ESH2-Z3	100339	2017-4-25	2018-4-24
14	Passive voltage probe	ROHDE&SCHWARZ	ESH2-Z3	100162	2018/1/4	2019/1/3
15	RF Switching	EMCDIR	RSU-M2	RSUM2002	2018-4-24	2018-4-24
16	Coaxial-Cable	/	2m	EMC-11	2017/4/25	2018/4/24
17	Coaxial-Cable	HUBER+SUHNER	0.5M	EMC-19	2017/4/25	2018/4/24
18	Coaxial-Cable	HUBER+SUHNER	0.5M	EMC-18	2017-4-25	2018-4-24
19	Coaxial-Cable	HUBER+SUHNER	7m	EMC-16	2017/4/25	2018/4/24
Harmonic Current /Flicker						
No.	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. date	Cal. Due date
					(YY/MM/DD)	(YY/MM/DD)
1	Power source	EM TEST	ACS503N30	P1421134515	2017/4/25	2018/4/24
2	Harmonic and Flicker test system	EM TEST	DPA503N/AIF503N32.1	P1342125054/P1413132941	2017/4/25	2018/4/24
3	Harmonic and Flicker Analyzer System	TESEQ	INA2197 NA2196 CCN 1000-3-75	1607A00622 1606A03019 1606A02959	2017/6/30	2018/5/31
4	AC Source	TESEQ	NSG1007-60-400	1605A03180/1611A02896	2017/6/30	2018/5/31
Electrostatic Discharge Immunity						
No.	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. date	Cal. Due date
					(YY/MM/DD)	(YY/MM/DD)
1	ESD Simulator	TESEQ	NSG437	1084	2017/11/29	2018/11/30
EFT/ Burst						
No.	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. date	Cal. Due date
					(YY/MM/DD)	(YY/MM/DD)
1	Generator	EM TEST	EFT 500 N5.1	V0903104609	2017/11/23	2018/11/22
2	Capacitive clamp	EM TEST	HFK	0109-22	2018/1/4	2019/1/3
3	Capacitive clamp	EM TEST	HFK	0109-22 (1)	2018/1/4	2019/1/3

Surge Immunity						
No.	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. date	Cal. Due date
					(YY/MM/DD)	(YY/MM/DD)
1	ULTRA COMPACT GENERATOR	TESEQ	NSG 3060	1833	2018/1/4	2019/1/3
2	3 PHASE COUPLING NETWORK	EM TEST	CDN 3063	2206	2017/4/8	2018/4/7
3	ULTRA COMPACT GENERATOR	EM TEST	UCS 500N 5V	P1305111251	2017/11/23	2018/11/22
4	3 PHASE COUPLING NETWORK	EM TEST	CNI 503	0401-06	2017/10/19	2018/10/18

CI						
No.	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. date	Cal. Due date
					(YY/MM/DD)	(YY/MM/DD)
1	Signal line COUPLING AND DECOUPLING NETWORK	Luthi	EM101	36191	2018/1/4	2019/1/3
2	Signal line COUPLING NETWORK	EM TEST	CDN S8 RJ45	P1345125804	2018/1/4	2019/1/3
3	CI test system	EM TEST	CWS500N1	P1315117096	2017/6/30	2018/5/31
4	Attenuator	EM Test	HAT-20+	YUU29101544-01	2018/1/4	2019/1/3
5	Attenuator	EM Test	ATTA 6/75	P1306112984	2018/1/4	2019/1/3
6	Attenuator	EM TEST	R100N	P1402128642/P1402128643	2018/1/4	2019/1/3
7	Attenuator	EM TEST	R100N	P1402128641/P1402128643	2018/1/4	2019/1/3
8	Attenuator	EM TEST	R100N	P1402128641/P1402128642	2018/1/4	2019/1/3
9	(3 Phase Coupling Decoupling Network)	SCHAFFNER	CDNM525	21133	2018/1/4	2019/1/3
10	RF Generator	TESEQ	NSG-4070	37531	2017/9/25	2018/9/24
11	single-phase Coupling /decoupling networks	TESEQ	CDN M016	21267	2018/1/4	2019/1/3
12	EM Clamp	TESEQ	KEMZ 801	22028	2018/1/4	2019/1/3

Voltage Dips and Interruptions Immunity						
No.	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. date	Cal. Due date
					(YY/MM/DD)	(YY/MM/DD)
1	Power drop simulator	Teseq	NSG2200-3	EKA29378	2017/11/23	2018/11/22
2	Power drop simulator	Teseq	NSG2200-3	1607A01980	2017/6/30	2018/5/31



**SGS-CSTC Standards Technical Services Co., Ltd.
Guangzhou Branch**

Report No.: GZEM160400166906

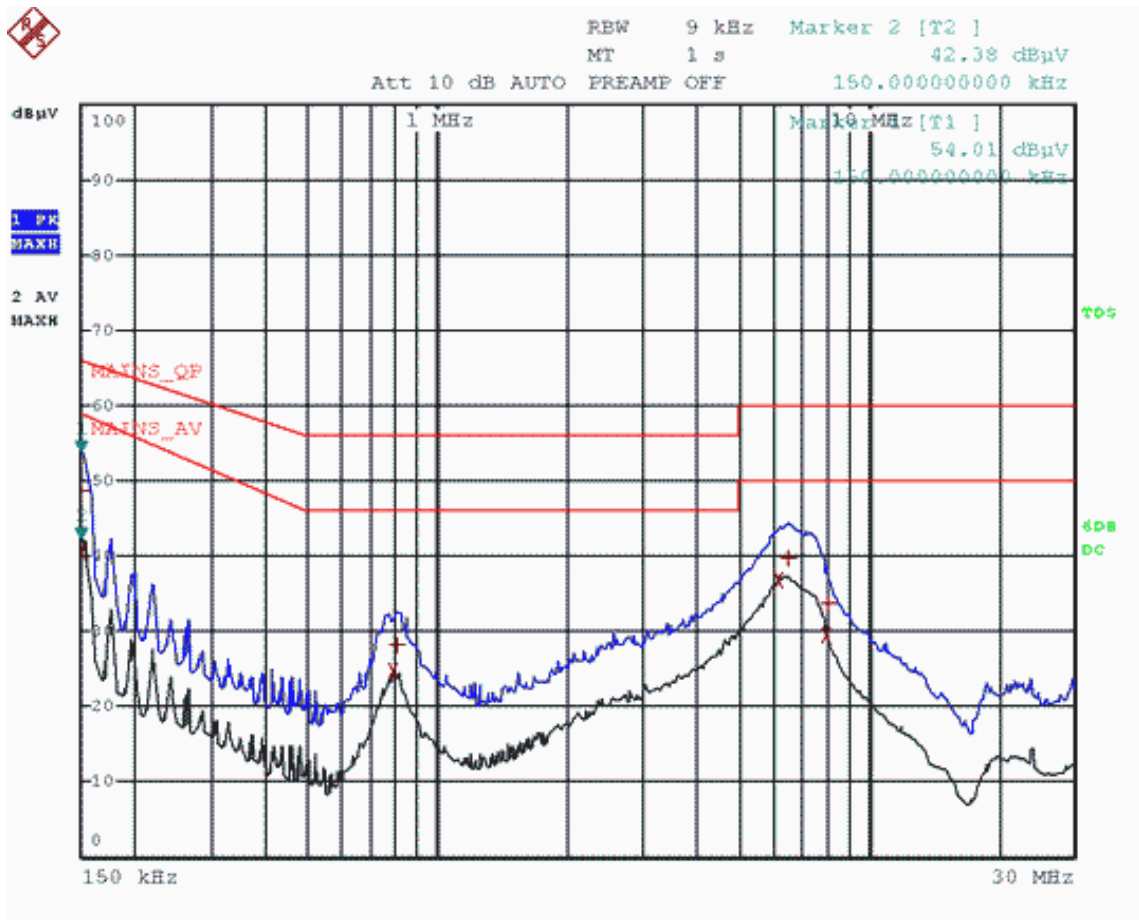
Page: 15 of 139

6.1.3 Measurement Data

An initial pre-scan was performed with peak detector. Quasi-Peak or Average measurement were performed at the frequencies with maximized peak emission were detected.

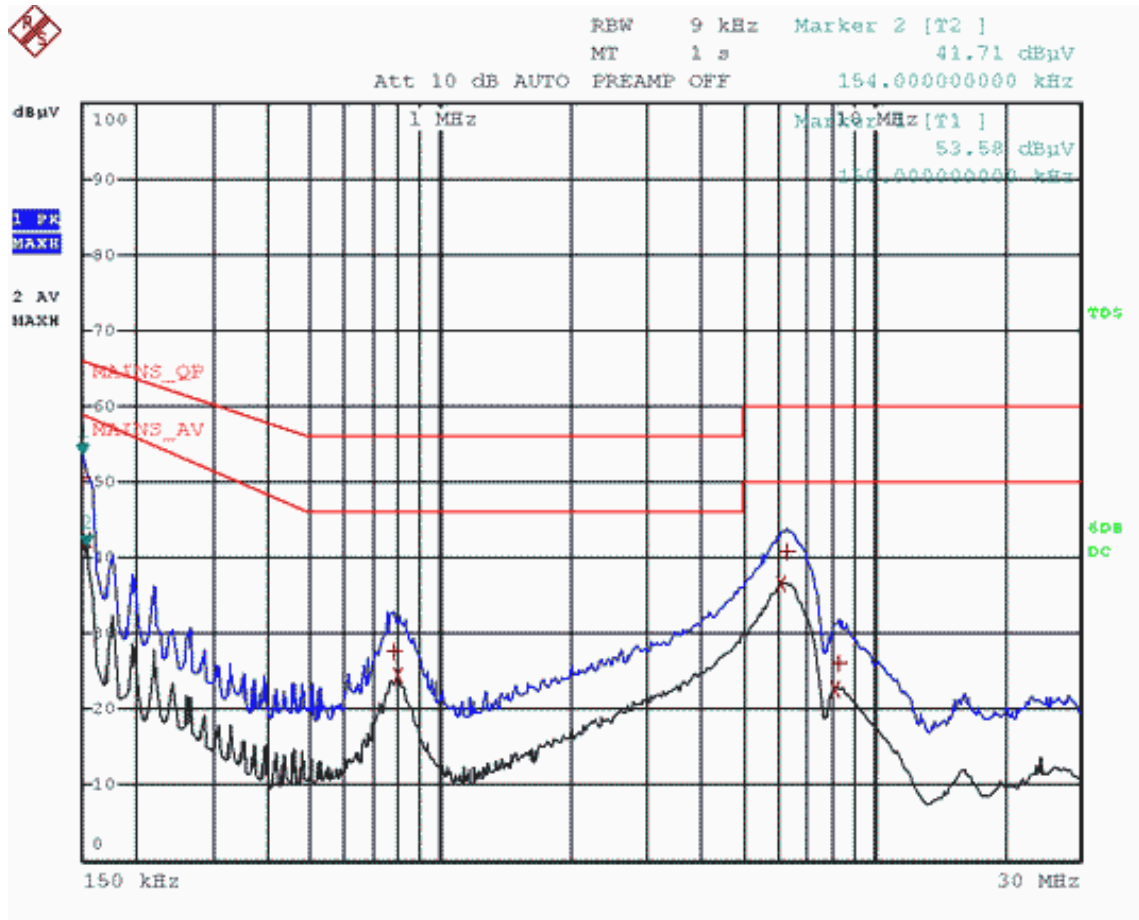
For Collocation 1

COOL-L



TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
2 Average	6.202 MHz	36.85	-13.14
1 Quasi Peak	150 kHz	48.72	-17.28
2 Average	150 kHz	40.42	-18.57
1 Quasi Peak	6.53 MHz	39.83	-20.16
2 Average	7.998 MHz	29.62	-20.37
2 Average	786 kHz	24.70	-21.29
1 Quasi Peak	8.026 MHz	33.83	-26.16
1 Quasi Peak	802 kHz	28.13	-27.86

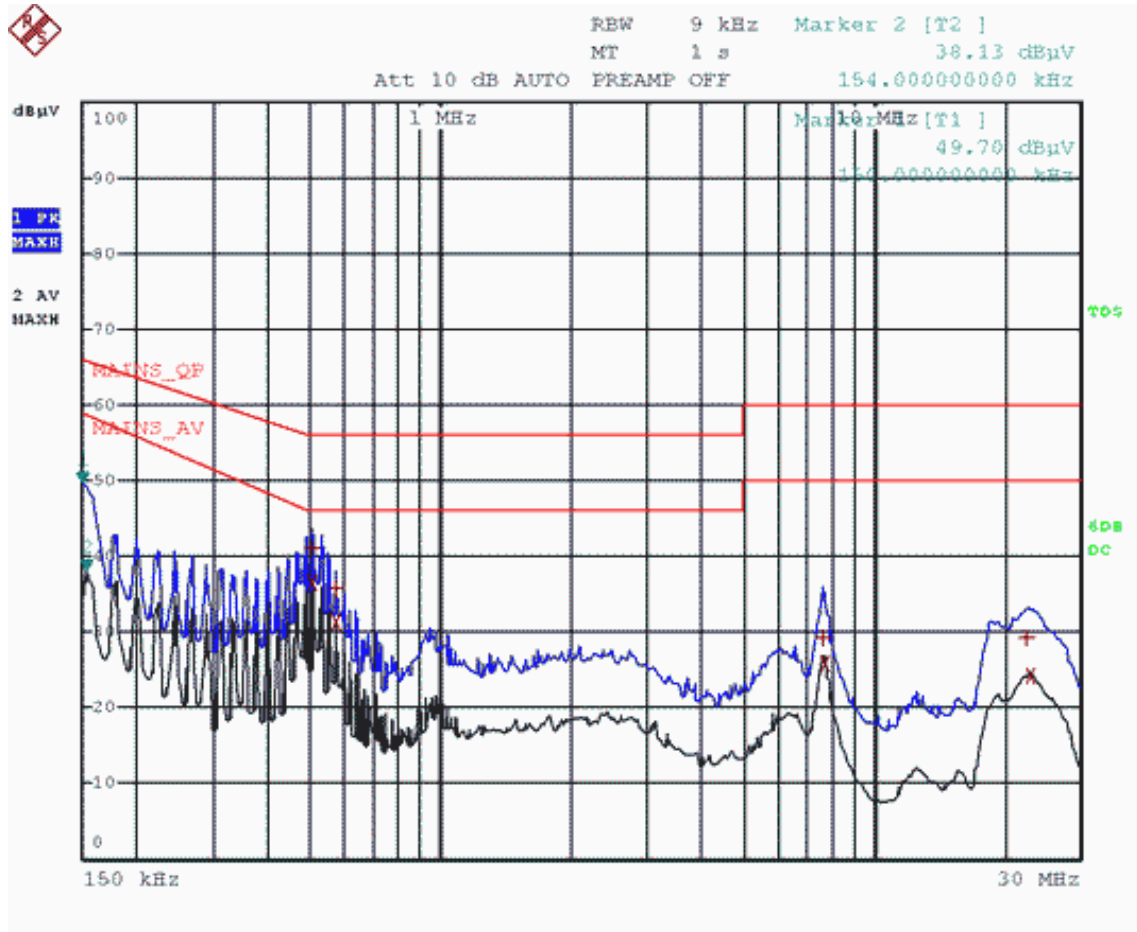
COOL-N



TRACE	FREQUENCY	LEVEL dB μ V	DELTA LIMIT dB
2 Average	6.106 MHz	36.55	-13.44
1 Quasi Peak	150 kHz	50.42	-15.57
2 Average	154 kHz	42.28	-16.43
1 Quasi Peak	6.318 MHz	40.70	-19.29
2 Average	798 kHz	24.64	-21.35
2 Average	8.15 MHz	22.76	-27.23
1 Quasi Peak	778 kHz	27.72	-28.27
1 Quasi Peak	8.354 MHz	26.22	-33.77

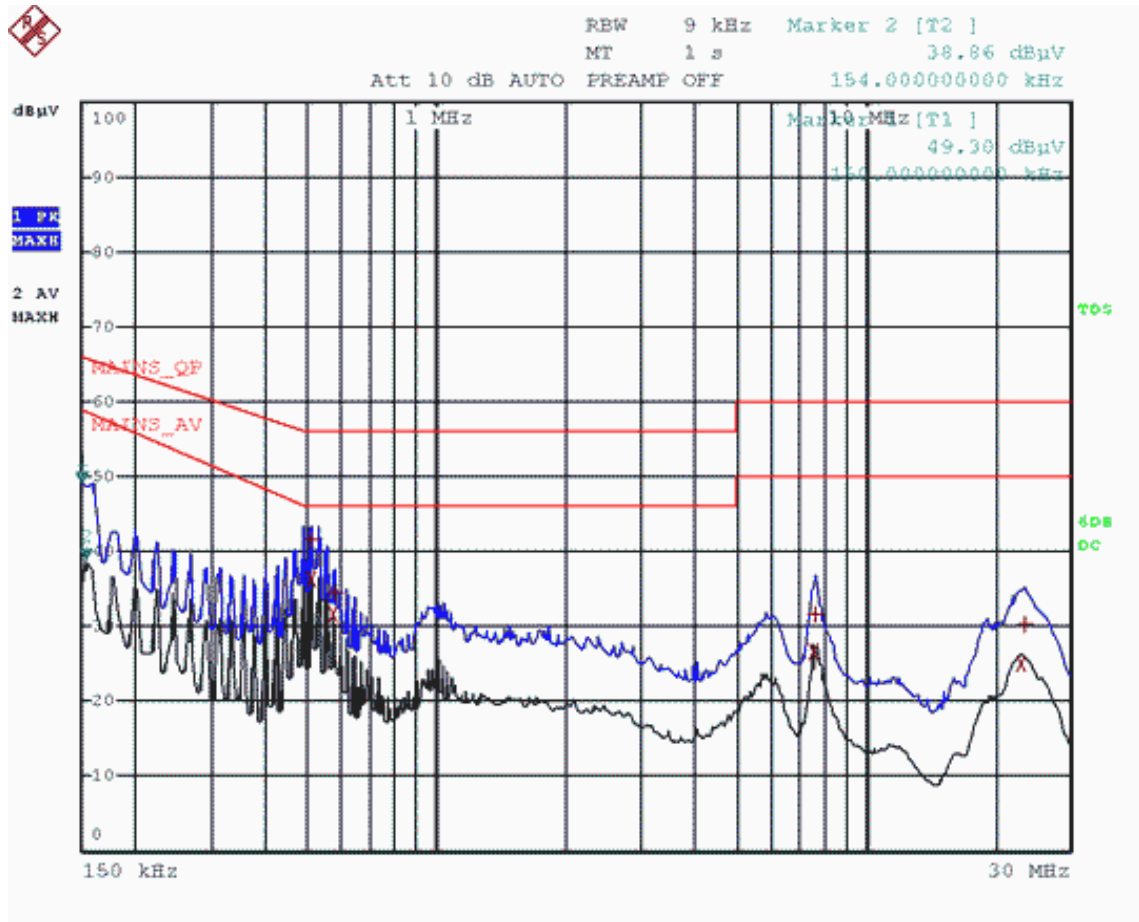
For Collocation 2

COOL-L



TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
2 Average	506 kHz	36.50	-9.49
2 Average	574 kHz	31.35	-14.64
1 Quasi Peak	506 kHz	41.01	-14.98
1 Quasi Peak	574 kHz	35.89	-20.10
2 Average	7.698 MHz	25.84	-24.15
2 Average	23.002 MHz	24.28	-25.71
1 Quasi Peak	7.678 MHz	29.21	-30.78
1 Quasi Peak	22.466 MHz	29.18	-30.81

COOL-N



TRACE	FREQUENCY	LEVEL dBμV	DELTA LIMIT dB
2 Average	510 kHz	36.25	-9.74
2 Average	574 kHz	31.61	-14.39
1 Quasi Peak	510 kHz	41.55	-14.44
1 Quasi Peak	578 kHz	34.45	-21.54
2 Average	7.598 MHz	26.59	-23.41
2 Average	23.102 MHz	25.03	-24.96
1 Quasi Peak	7.642 MHz	31.59	-28.40
1 Quasi Peak	23.614 MHz	30.37	-29.62

6.2 Conducted Disturbance at Load Terminals and Additional Terminals

Test Requirement:	EN 55014-1:2017
Test Method:	CISPR 16-2-1
Limit:	
0.15MHz - 0.5 MHz	80dB(μV) quasi-peak, 70dB(μV) average
0.5MHz-30MHz	74dB(μV) quasi-peak, 64dB(μV) average
Detector:	Peak for pre-scan (9kHz resolution bandwidth) 0.15MHz to 30MHz

6.2.1 E.U.T. Operation

Operating Environment:

Temperature: 25 °C Humidity: 50 % RH Atmospheric Pressure: 1005 mbar

a: Test in cooling mode, keep swinging at high speed, and adjust the EUT temperature at the lowest temperature position.

Pretest these modes to find the worst case:

b: Test in heating mode, keep swinging at high speed, and adjust the EUT temperature at the highest temperature position.

c: Test in dehumidification mode.

d: Test in fan mode, keep swinging at high speed.

The worst case for final test:

a: Test in cooling mode, keep swinging at high speed, and adjust the EUT temperature at the lowest temperature position.

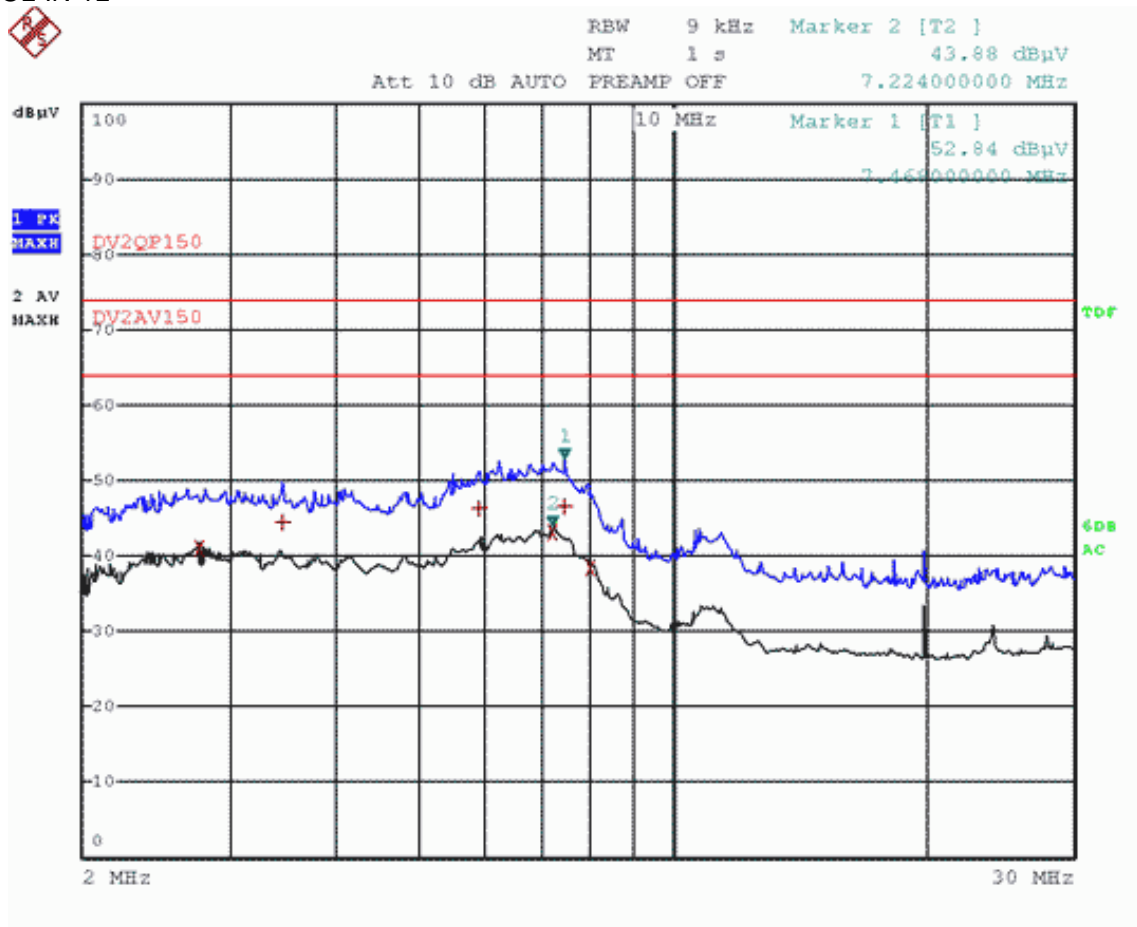
6.2.2 Measurement Data

An initial pre-scan was performed with peak detector. Quasi-Peak or Average measurement were performed at the frequencies with maximized peak emission were detected.

For Collocation 1

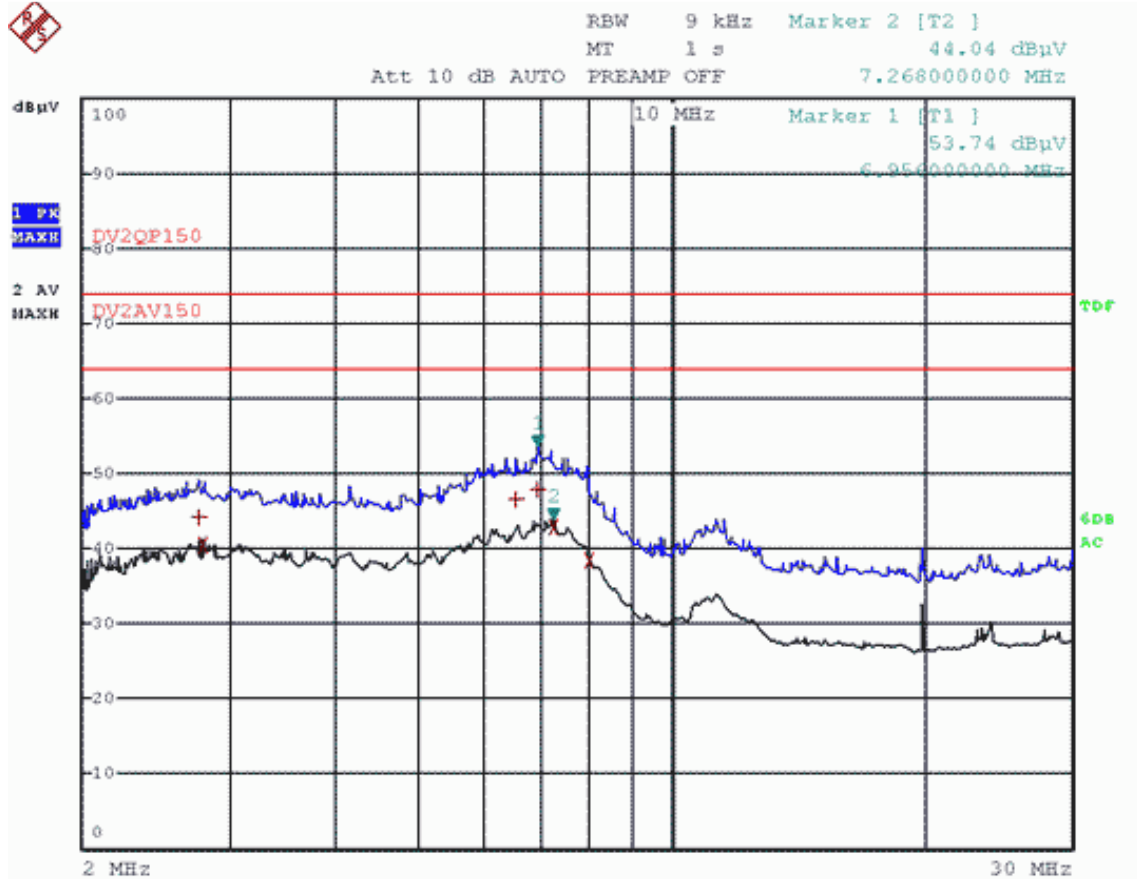
For MSAFCU-18HRFN8-QRD0GW

COOL-IN-1L



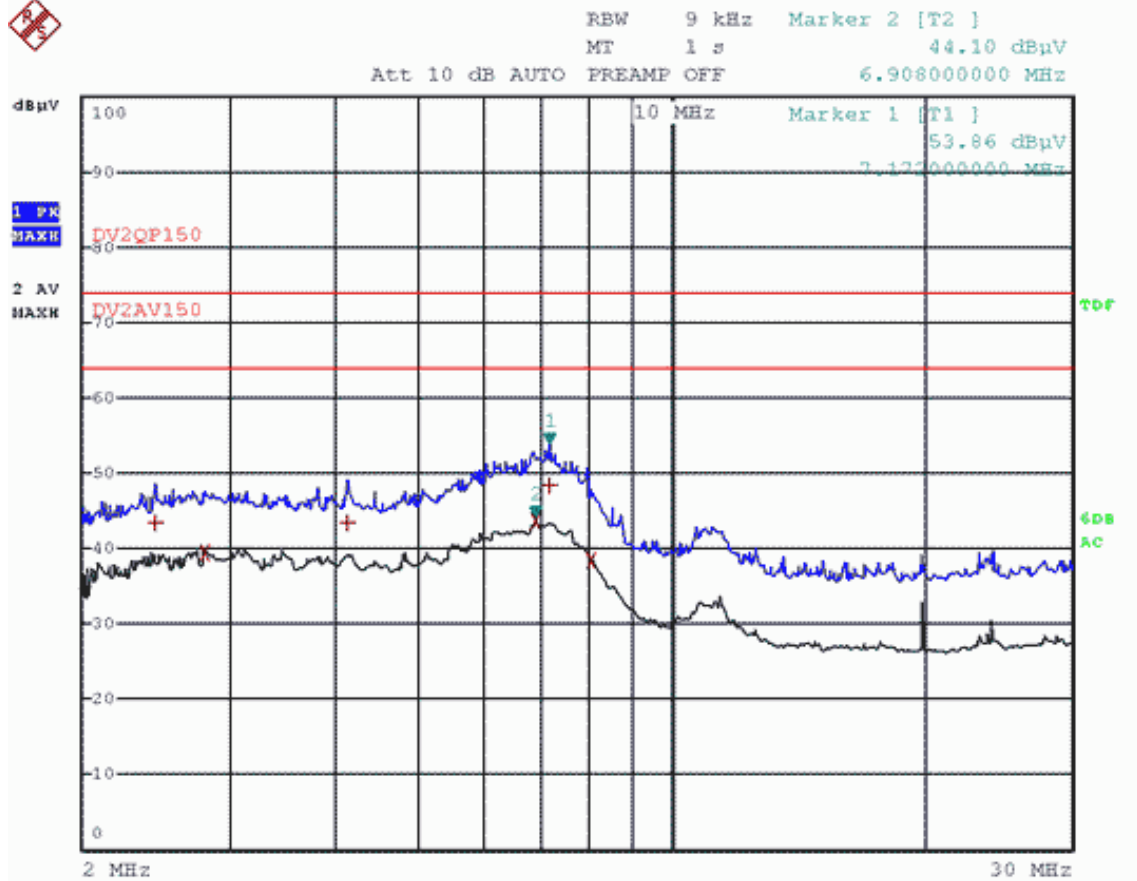
TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
2 Average	7.224 MHz	43.16	-20.83
2 Average	2.752 MHz	41.04	-22.95
2 Average	8.016 MHz	38.33	-25.66
1 Quasi Peak	7.468 MHz	46.49	-27.50
1 Quasi Peak	5.92 MHz	46.39	-27.61
1 Quasi Peak	3.448 MHz	44.61	-29.38

COOL-IN-2N



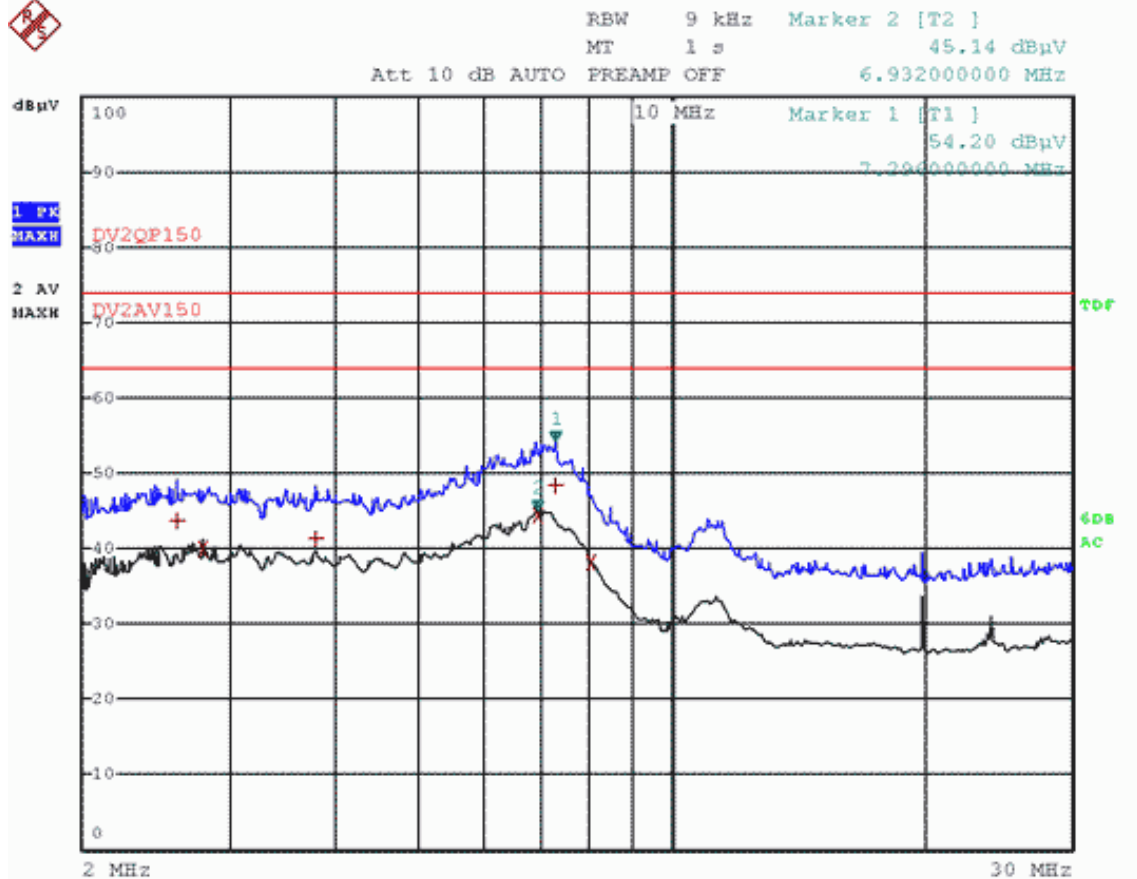
TRACE	FREQUENCY	LEVEL dBμV	DELTA LIMIT dB
2 Average	7.268 MHz	42.92	-21.07
2 Average	2.776 MHz	40.43	-23.56
2 Average	8.016 MHz	38.47	-25.52
1 Quasi Peak	6.956 MHz	47.93	-26.06
1 Quasi Peak	6.552 MHz	46.69	-27.30
1 Quasi Peak	2.756 MHz	44.32	-29.67

COOL-IN-S



TRACE	FREQUENCY	LEVEL dBuV	DELTA LIMIT dB
2 Average	6.908 MHz	43.65	-20.34
2 Average	2.796 MHz	39.52	-24.47
2 Average	8.036 MHz	38.36	-25.64
1 Quasi Peak	7.172 MHz	48.32	-25.68
1 Quasi Peak	4.124 MHz	43.37	-30.62
1 Quasi Peak	2.436 MHz	43.35	-30.64

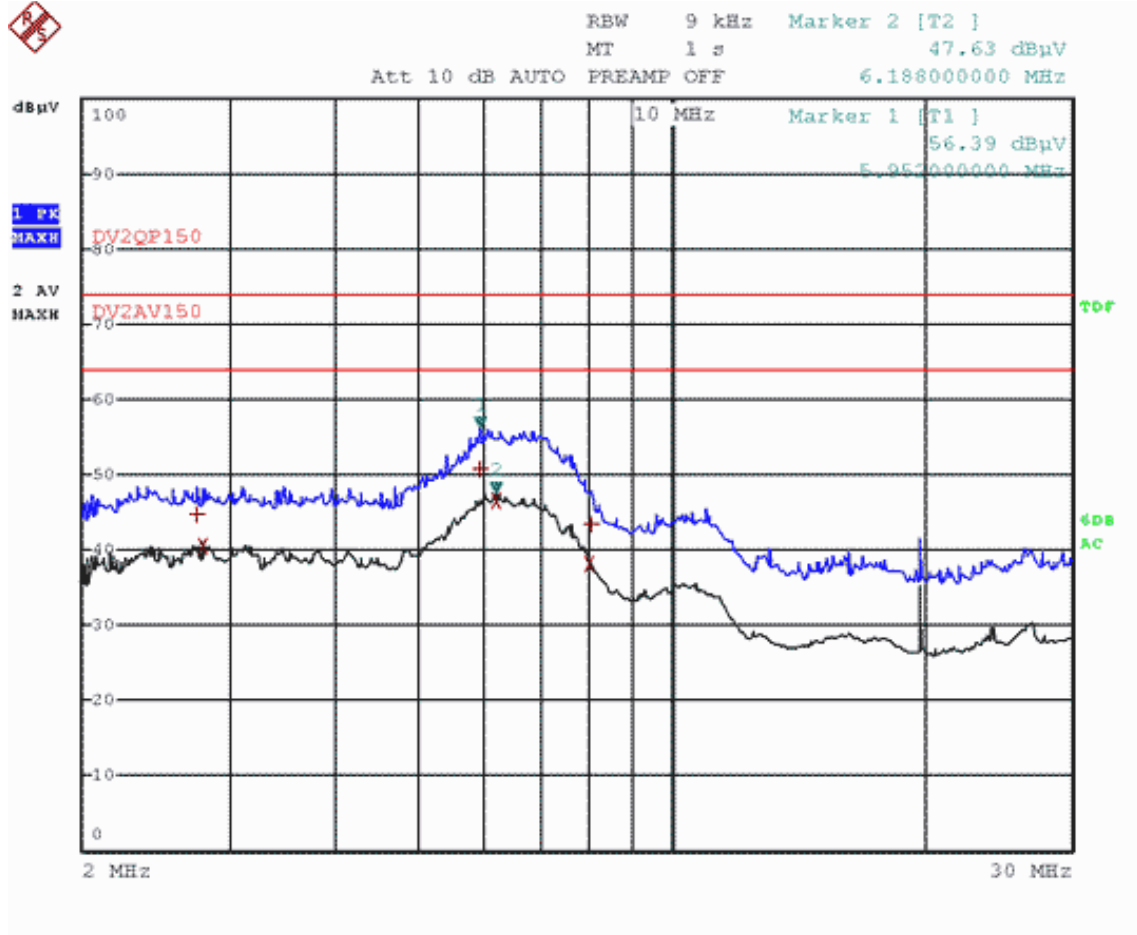
COOL-IN-PE



TRACE	FREQUENCY	LEVEL dBμV	DELTA LIMIT dB
2 Average	6.932 MHz	44.36	-19.63
2 Average	2.772 MHz	39.95	-24.04
1 Quasi Peak	7.296 MHz	48.53	-25.46
2 Average	8.04 MHz	38.15	-25.84
1 Quasi Peak	2.584 MHz	43.73	-30.26
1 Quasi Peak	3.776 MHz	41.40	-32.59

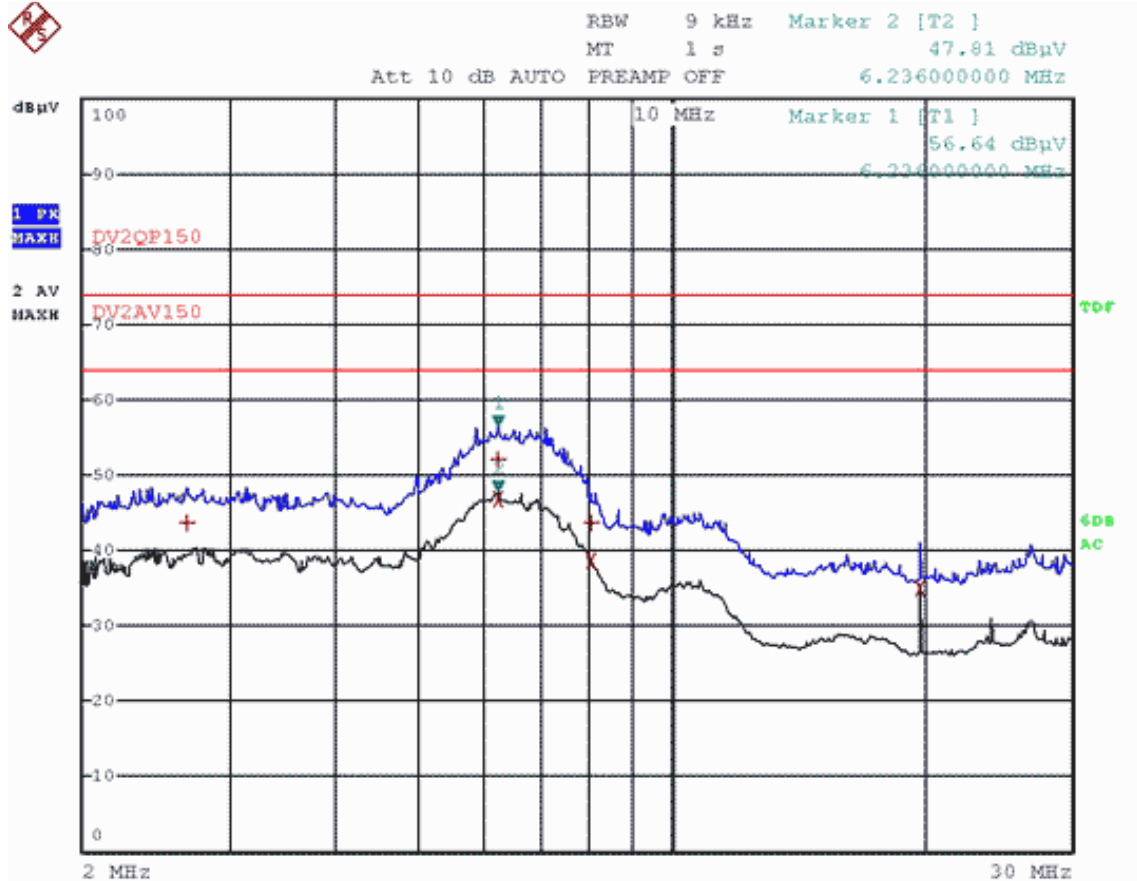
For MSAFBU-09HRDN8-QRD0GW

COOL-IN-1L



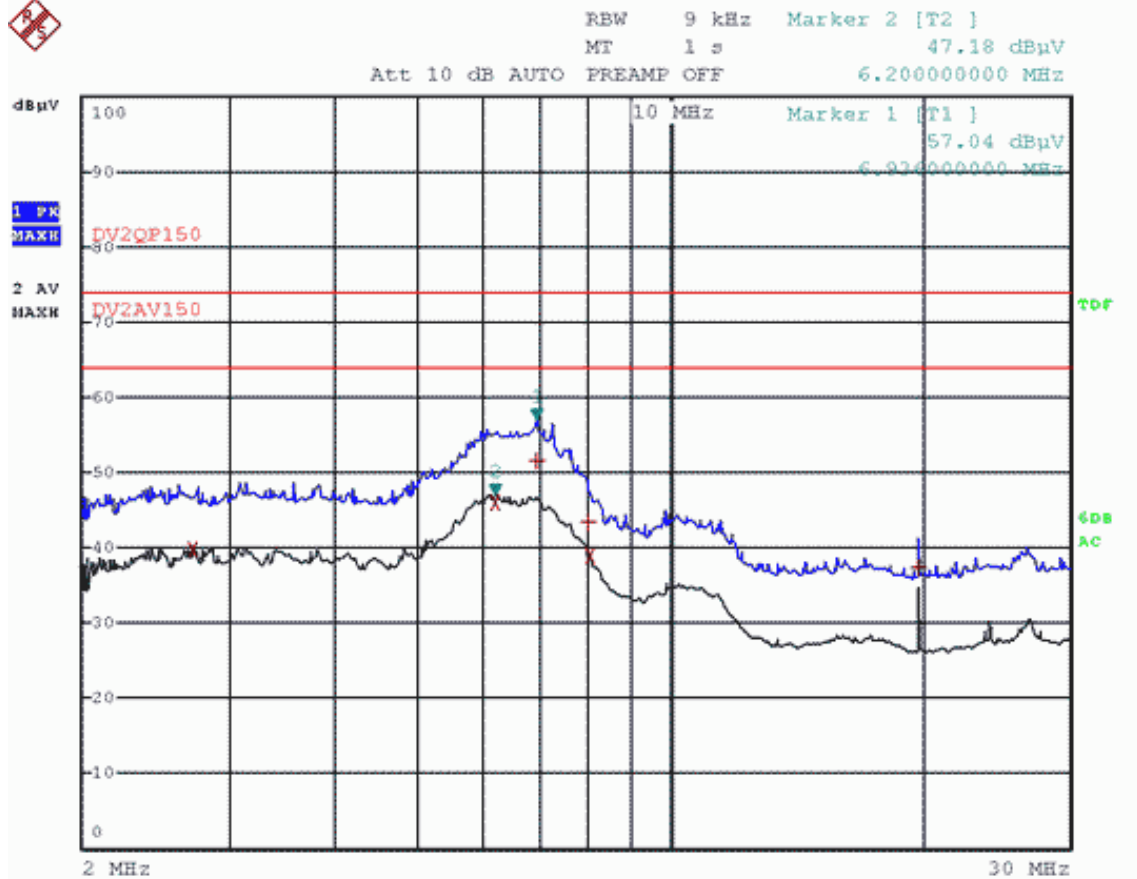
TRACE	FREQUENCY	LEVEL dBμV	DELTA LIMIT dB
2 Average	6.188 MHz	46.66	-17.33
1 Quasi Peak	5.952 MHz	50.69	-23.30
2 Average	2.776 MHz	40.53	-23.46
2 Average	8.016 MHz	38.12	-25.87
1 Quasi Peak	2.728 MHz	44.78	-29.21
1 Quasi Peak	8.036 MHz	43.31	-30.68

COOL-IN-2N



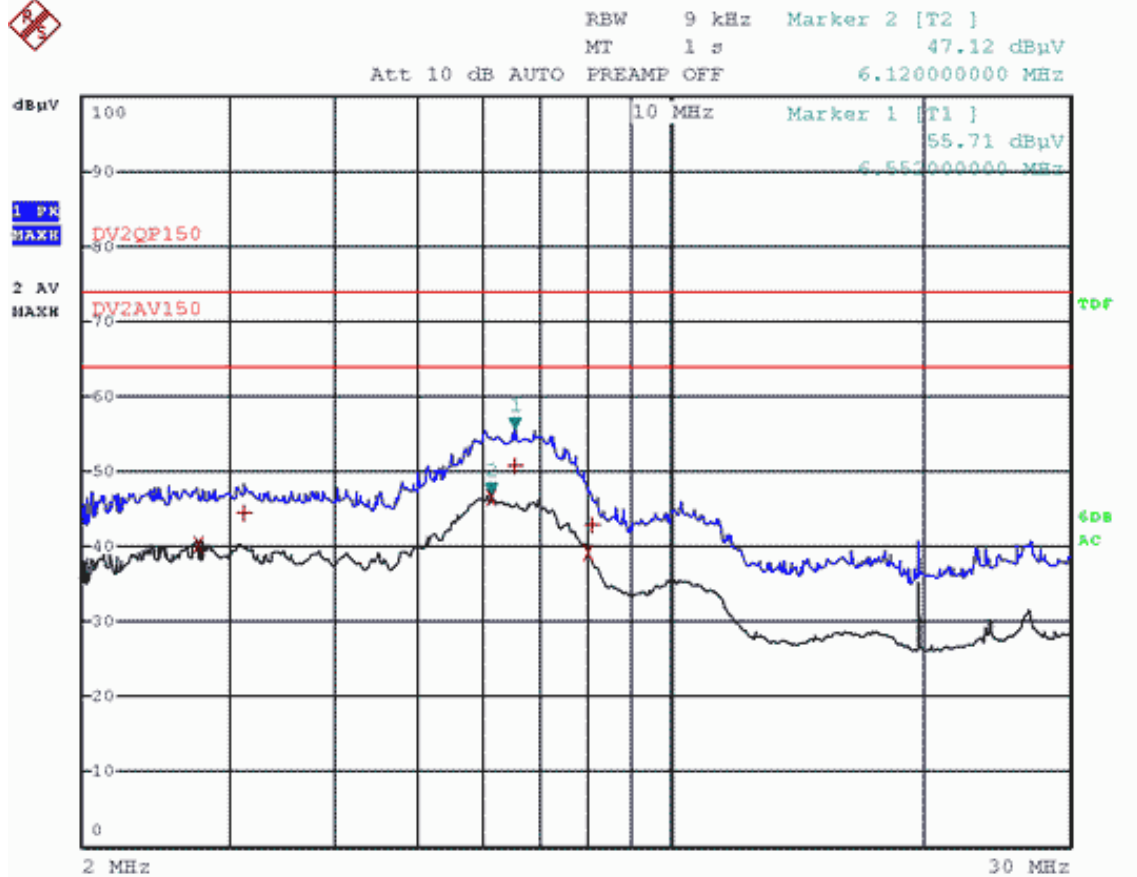
TRACE	FREQUENCY	LEVEL dBuV	DELTA LIMIT dB
2 Average	6.236 MHz	46.89	-17.10
1 Quasi Peak	6.236 MHz	52.19	-21.80
2 Average	8.04 MHz	38.75	-25.24
2 Average	19.808 MHz	35.15	-28.84
1 Quasi Peak	2.656 MHz	43.71	-30.28
1 Quasi Peak	8.04 MHz	43.69	-30.30

COOL-IN-S



TRACE	FREQUENCY	LEVEL dBμV	DELTA LIMIT dB
2 Average	6.2 MHz	46.08	-17.91
1 Quasi Peak	6.936 MHz	51.49	-22.50
2 Average	2.704 MHz	39.72	-24.27
2 Average	8.036 MHz	39.00	-24.99
1 Quasi Peak	8.012 MHz	43.49	-30.50
1 Quasi Peak	19.8 MHz	37.44	-36.56

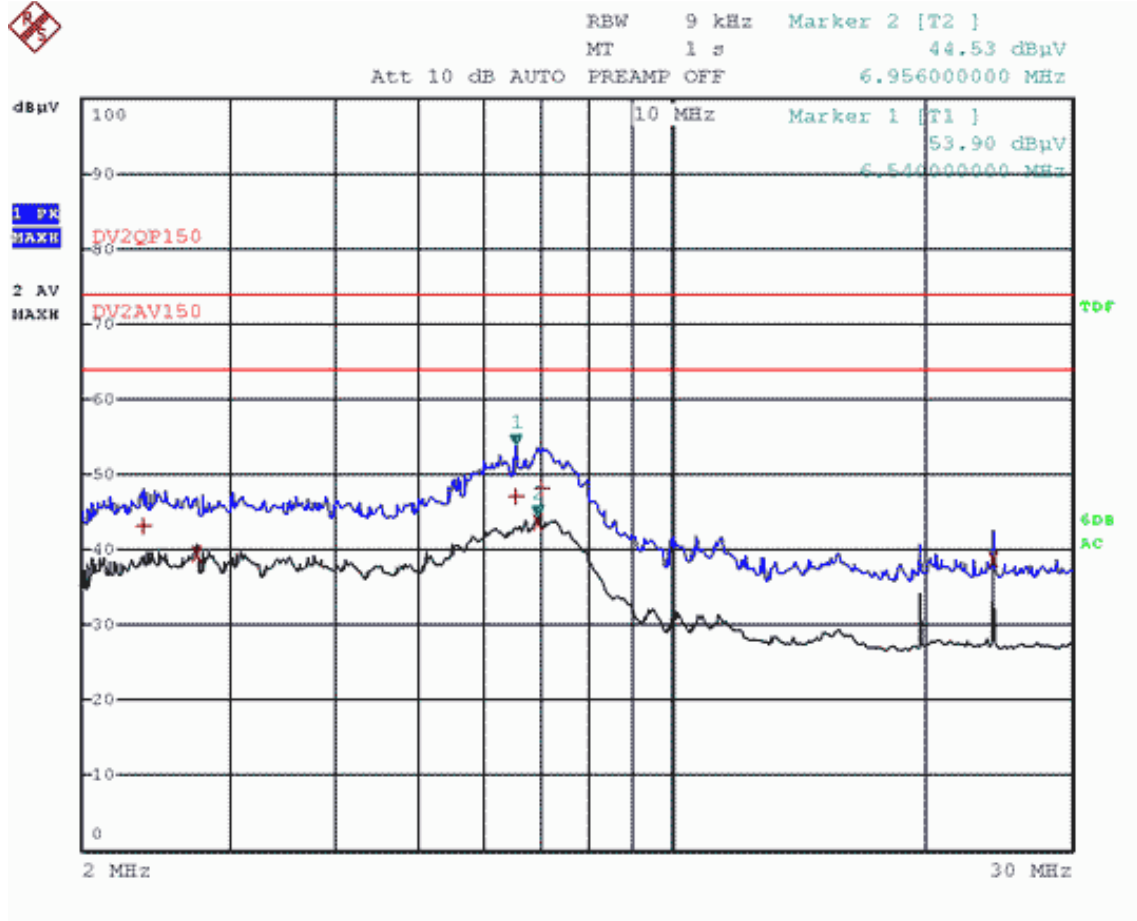
COOL-IN-PE



TRACE	FREQUENCY	LEVEL dBμV	DELTA LIMIT dB
2 Average	6.12 MHz	46.59	-17.40
1 Quasi Peak	6.552 MHz	50.70	-23.29
2 Average	2.748 MHz	40.25	-23.74
2 Average	8.016 MHz	39.28	-24.71
1 Quasi Peak	3.112 MHz	44.56	-29.43
1 Quasi Peak	8.064 MHz	43.03	-30.96

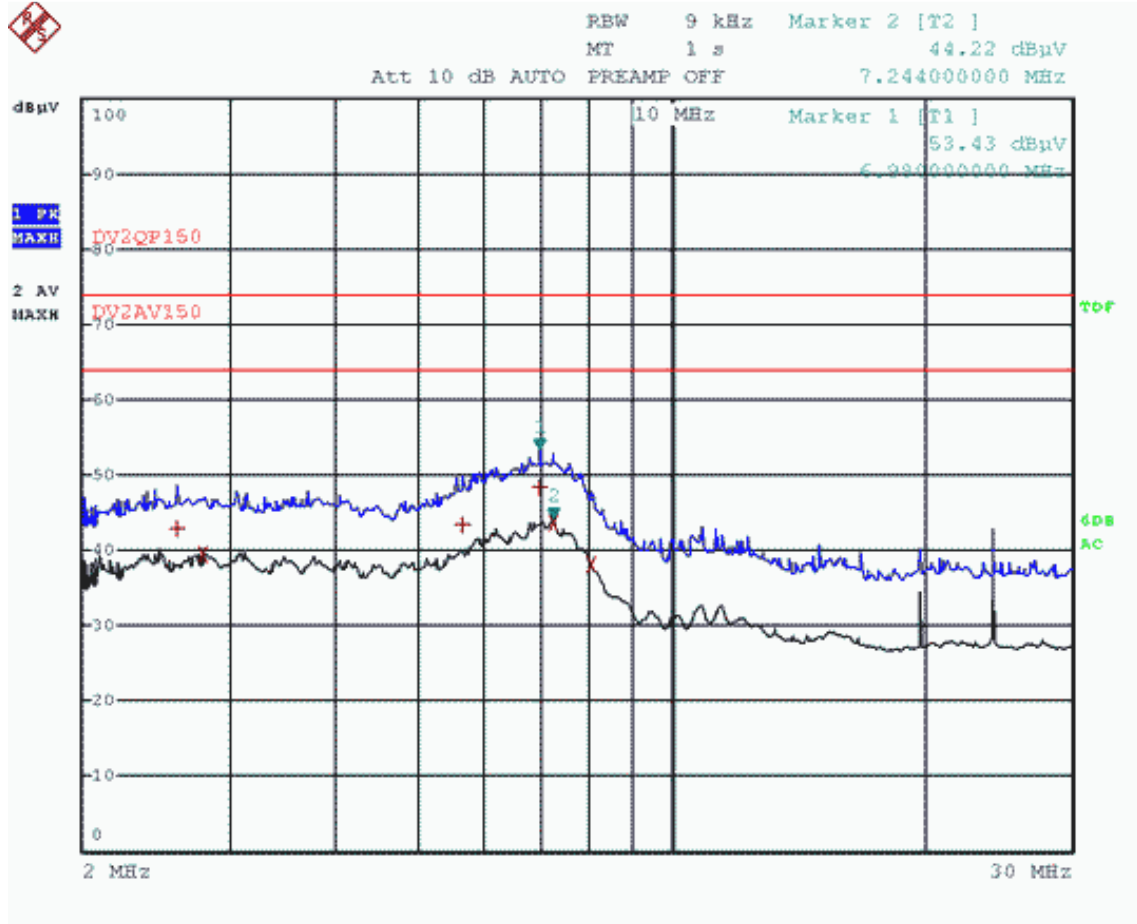
For MSAFBU-12HRDN8-QRD0GW

COOL-IN-1L



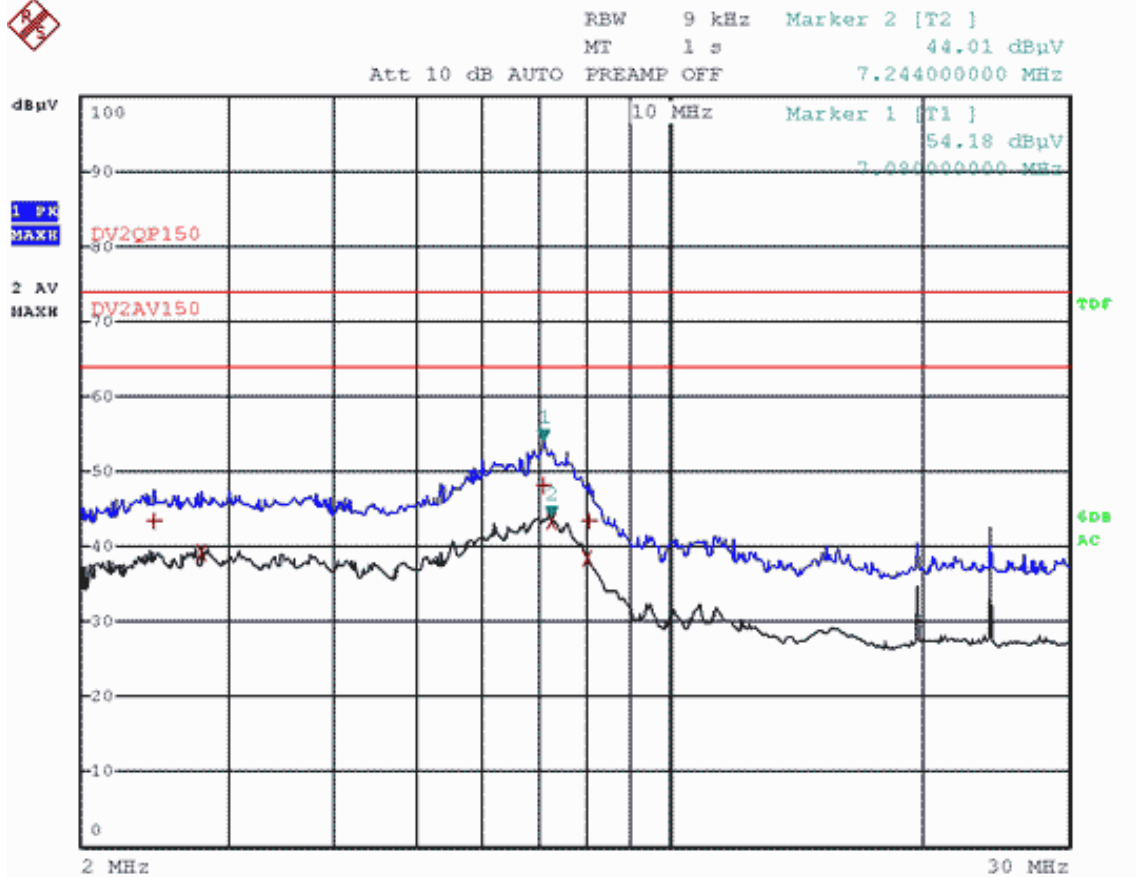
TRACE	FREQUENCY	LEVEL dBμV	DELTA LIMIT dB
2 Average	6.956 MHz	43.78	-20.21
2 Average	2.728 MHz	39.51	-24.48
2 Average	24.216 MHz	38.79	-25.20
1 Quasi Peak	7.024 MHz	48.22	-25.77
1 Quasi Peak	6.54 MHz	47.00	-26.99
1 Quasi Peak	2.364 MHz	43.28	-30.71

COOL-IN-2N



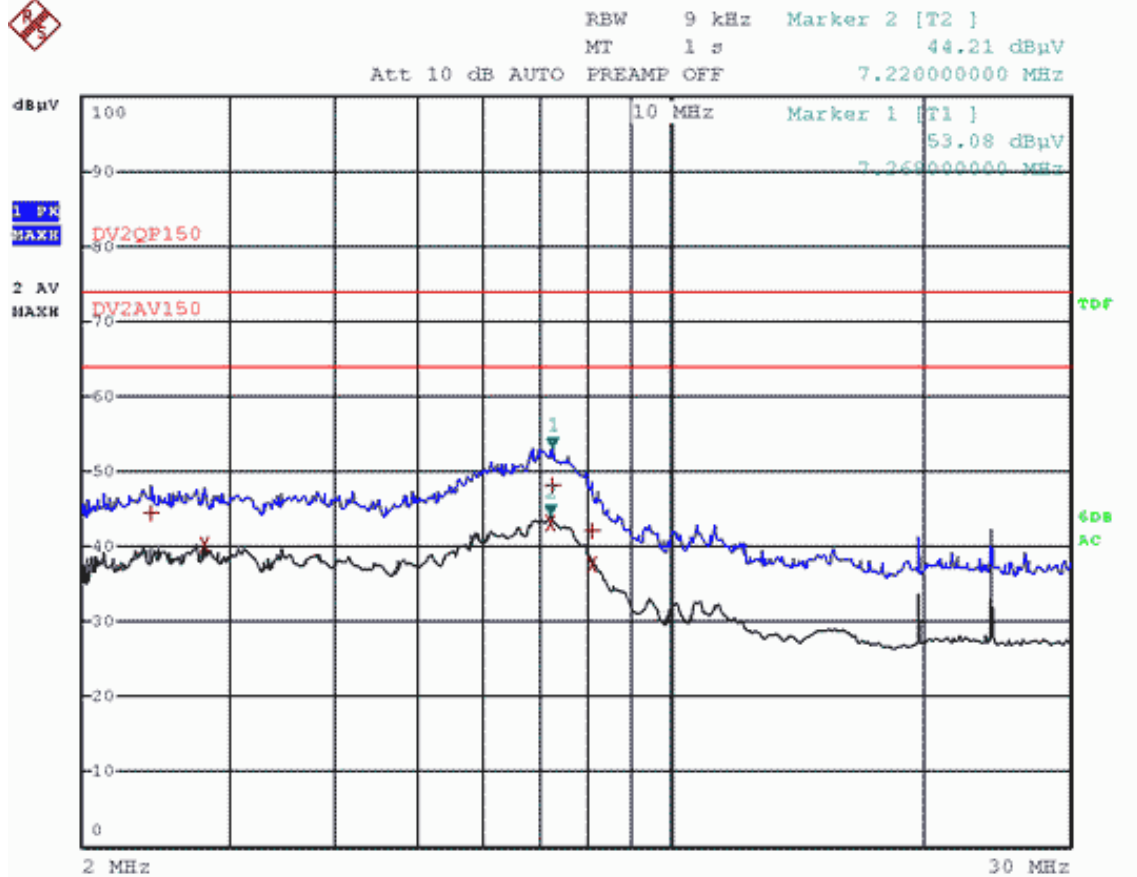
TRACE	FREQUENCY	LEVEL dBμV	DELTA LIMIT dB
2 Average	7.244 MHz	43.63	-20.36
2 Average	2.776 MHz	39.53	-24.46
1 Quasi Peak	6.98 MHz	48.52	-25.47
2 Average	8.036 MHz	38.06	-25.93
1 Quasi Peak	5.64 MHz	43.47	-30.52
1 Quasi Peak	2.584 MHz	42.98	-31.01

COOL-IN-S



TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
2 Average	7.244 MHz	43.47	-20.52
2 Average	2.776 MHz	39.18	-24.81
2 Average	8.016 MHz	38.46	-25.54
1 Quasi Peak	7.08 MHz	48.23	-25.76
1 Quasi Peak	8.036 MHz	43.41	-30.58
1 Quasi Peak	2.436 MHz	43.39	-30.60

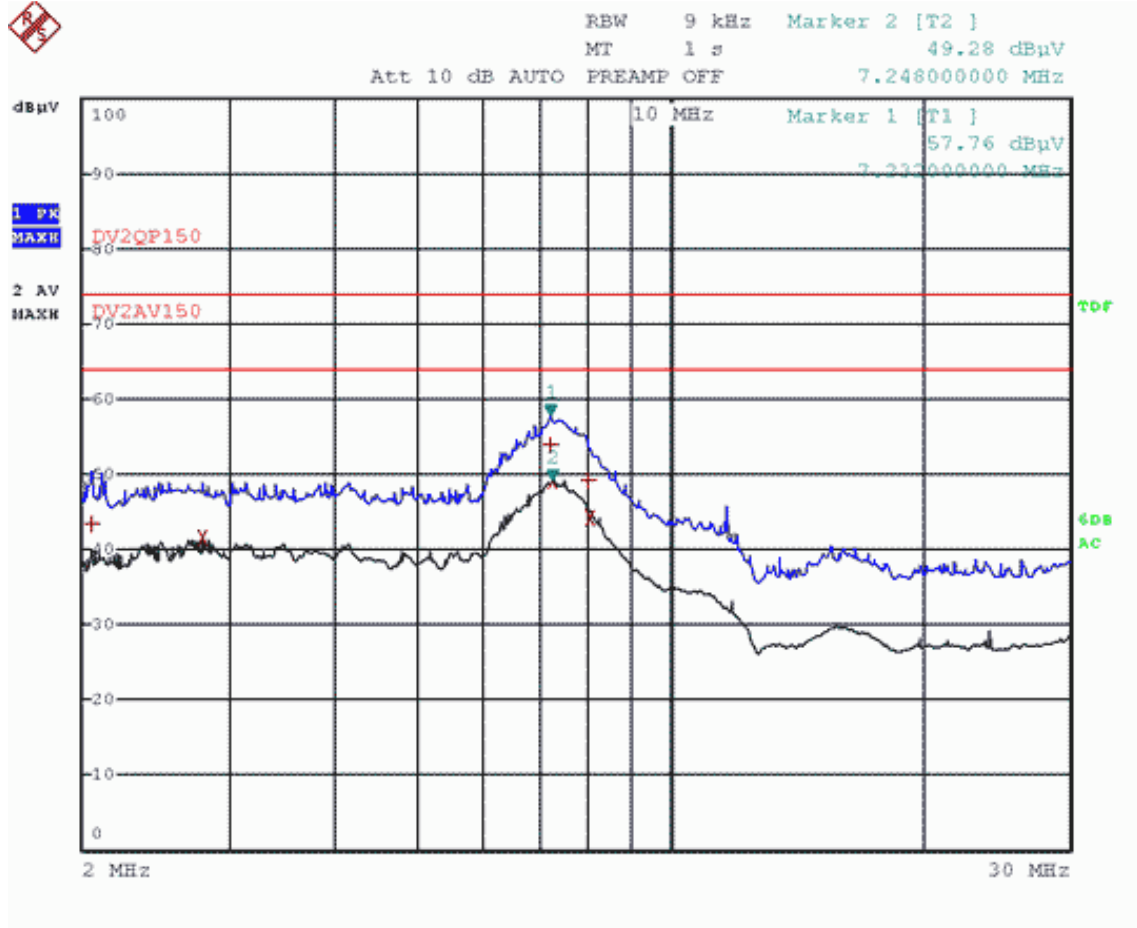
COOL-IN-PE



TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
2 Average	7.22 MHz	43.28	-20.71
2 Average	2.8 MHz	40.18	-23.81
1 Quasi Peak	7.268 MHz	48.20	-25.79
2 Average	8.068 MHz	37.72	-26.27
1 Quasi Peak	2.416 MHz	44.40	-29.59
1 Quasi Peak	8.068 MHz	42.04	-31.95

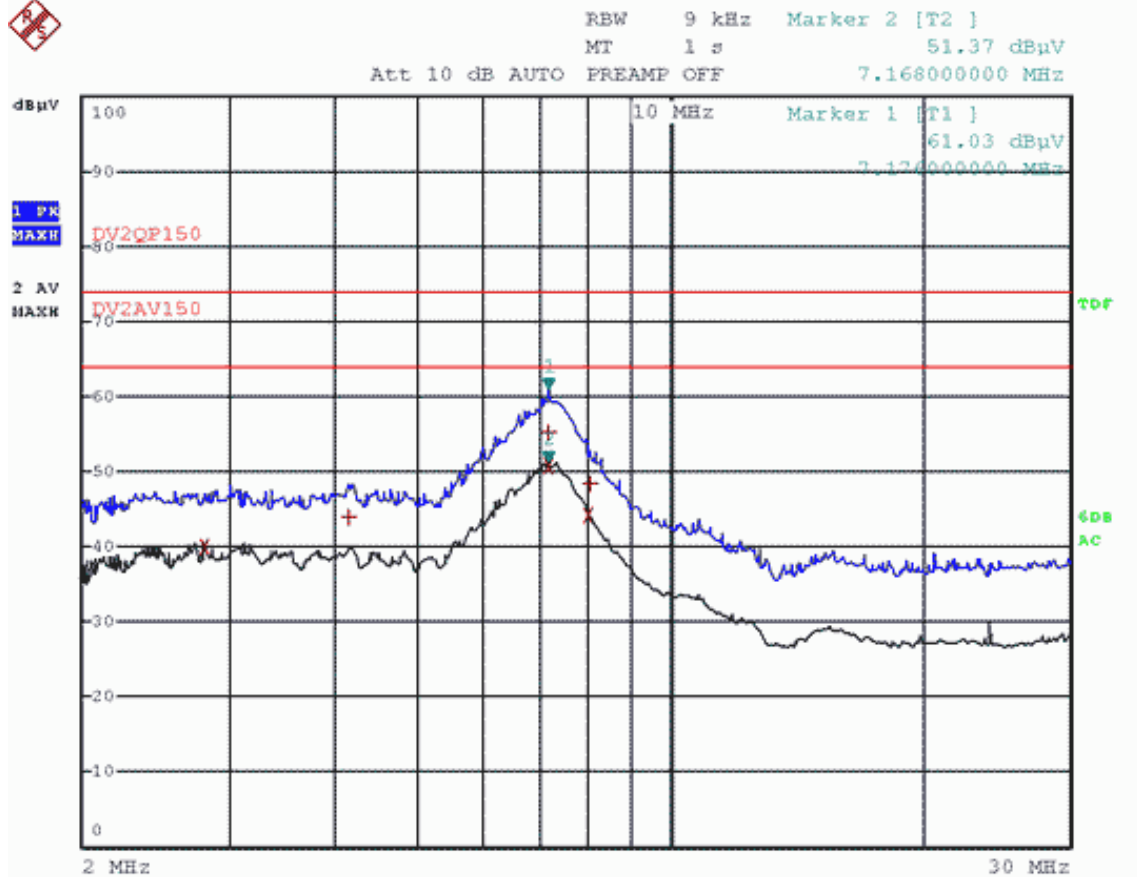
For MSAFCU-18HRFN8-QRD0GW

COOL-OUT-L



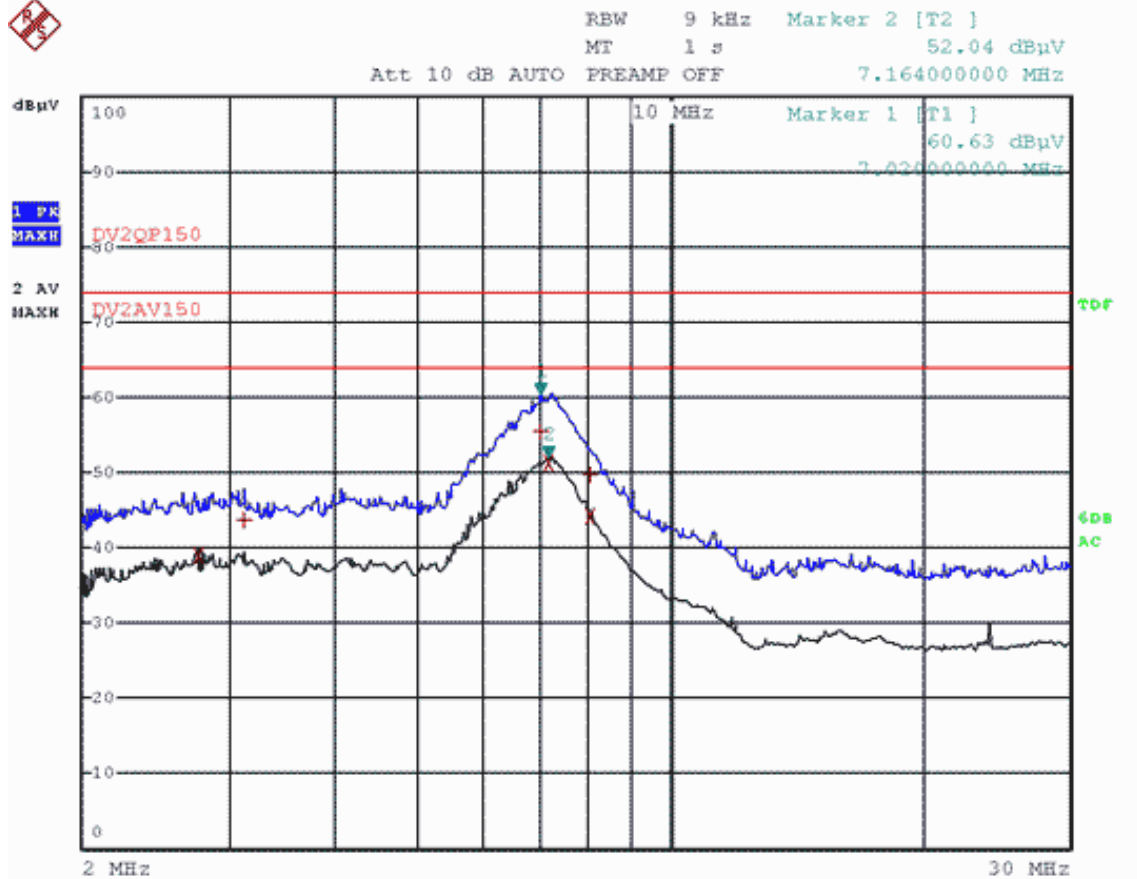
TRACE	FREQUENCY	LEVEL dBμV	DELTA LIMIT dB
2 Average	7.248 MHz	49.29	-14.70
2 Average	8.048 MHz	44.10	-19.89
1 Quasi Peak	7.232 MHz	53.90	-20.10
2 Average	2.776 MHz	41.60	-22.39
1 Quasi Peak	8.008 MHz	49.26	-24.73
1 Quasi Peak	2.052 MHz	43.40	-30.59

COOL-OUT-N



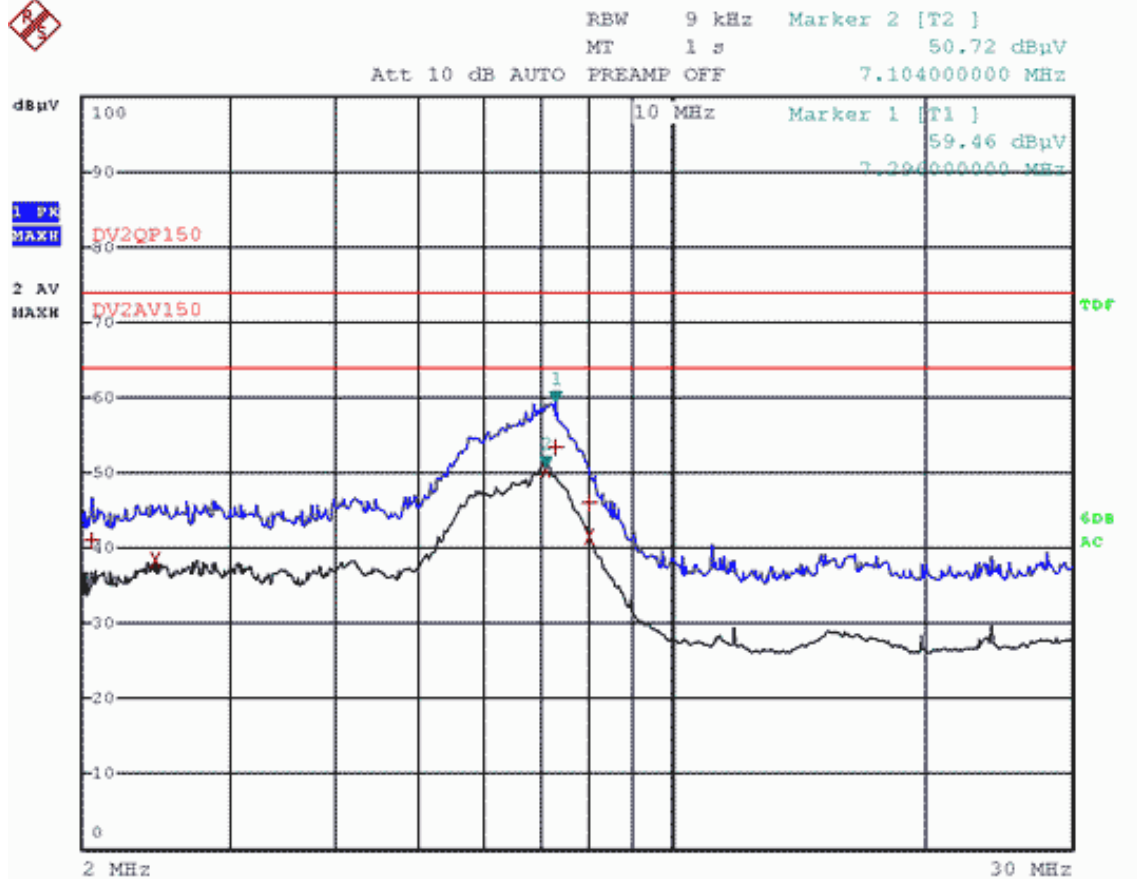
TRACE	FREQUENCY	LEVEL dBμV	DELTA LIMIT dB
2 Average	7.168 MHz	50.84	-13.15
1 Quasi Peak	7.176 MHz	55.18	-18.81
2 Average	8.016 MHz	44.11	-19.88
2 Average	2.8 MHz	40.01	-23.98
1 Quasi Peak	8.032 MHz	48.34	-25.65
1 Quasi Peak	4.144 MHz	43.92	-30.07

COOL-OUT-S



TRACE	FREQUENCY	LEVEL dBμV	DELTA LIMIT dB
2 Average	7.164 MHz	51.19	-12.80
1 Quasi Peak	7.02 MHz	55.54	-18.45
2 Average	8.06 MHz	44.10	-19.89
1 Quasi Peak	8.036 MHz	49.62	-24.37
2 Average	2.752 MHz	39.06	-24.93
1 Quasi Peak	3.112 MHz	43.65	-30.35

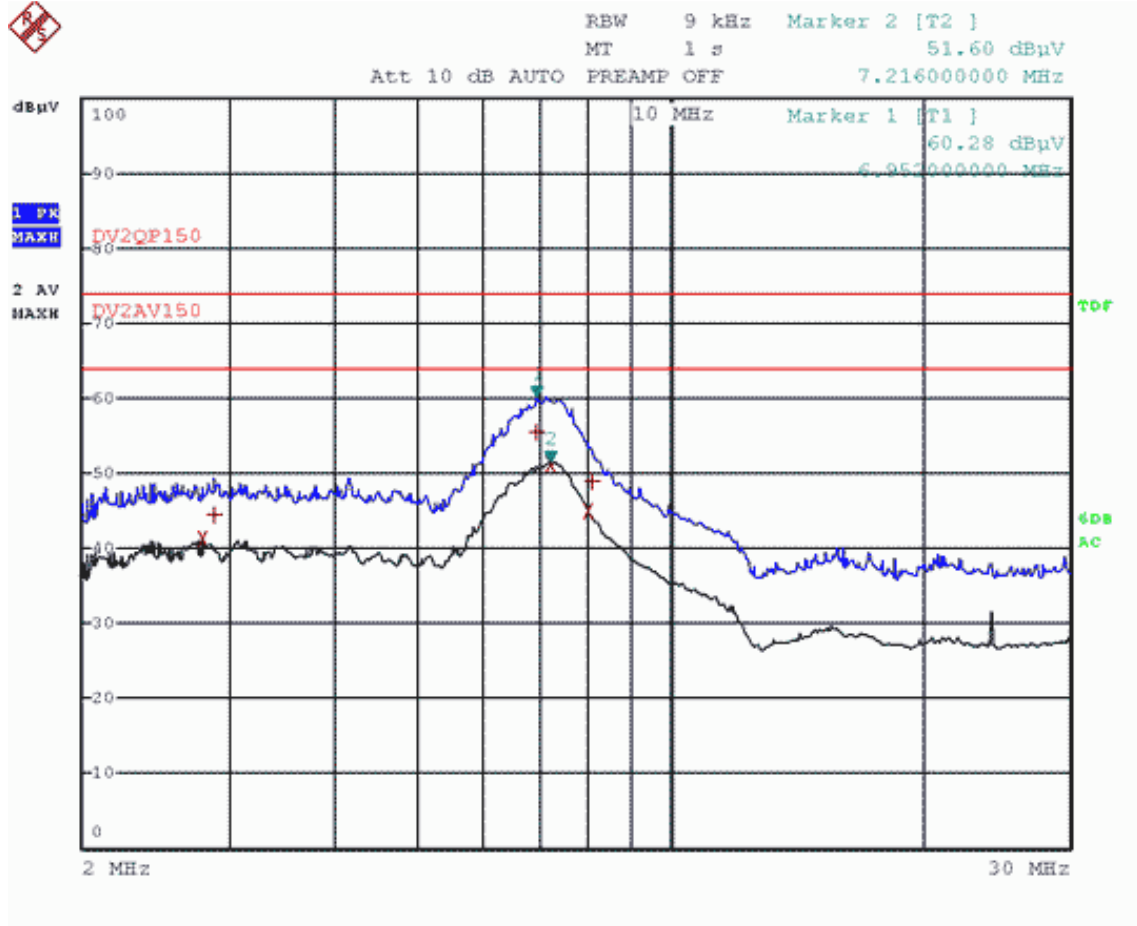
COOL-OUT-PE



TRACE	FREQUENCY	LEVEL dBμV	DELTA LIMIT dB
2 Average	7.104 MHz	50.44	-13.55
1 Quasi Peak	7.296 MHz	53.50	-20.49
2 Average	8.016 MHz	41.50	-22.49
2 Average	2.436 MHz	38.47	-25.52
1 Quasi Peak	8.016 MHz	46.00	-27.99
1 Quasi Peak	2.056 MHz	40.96	-33.03

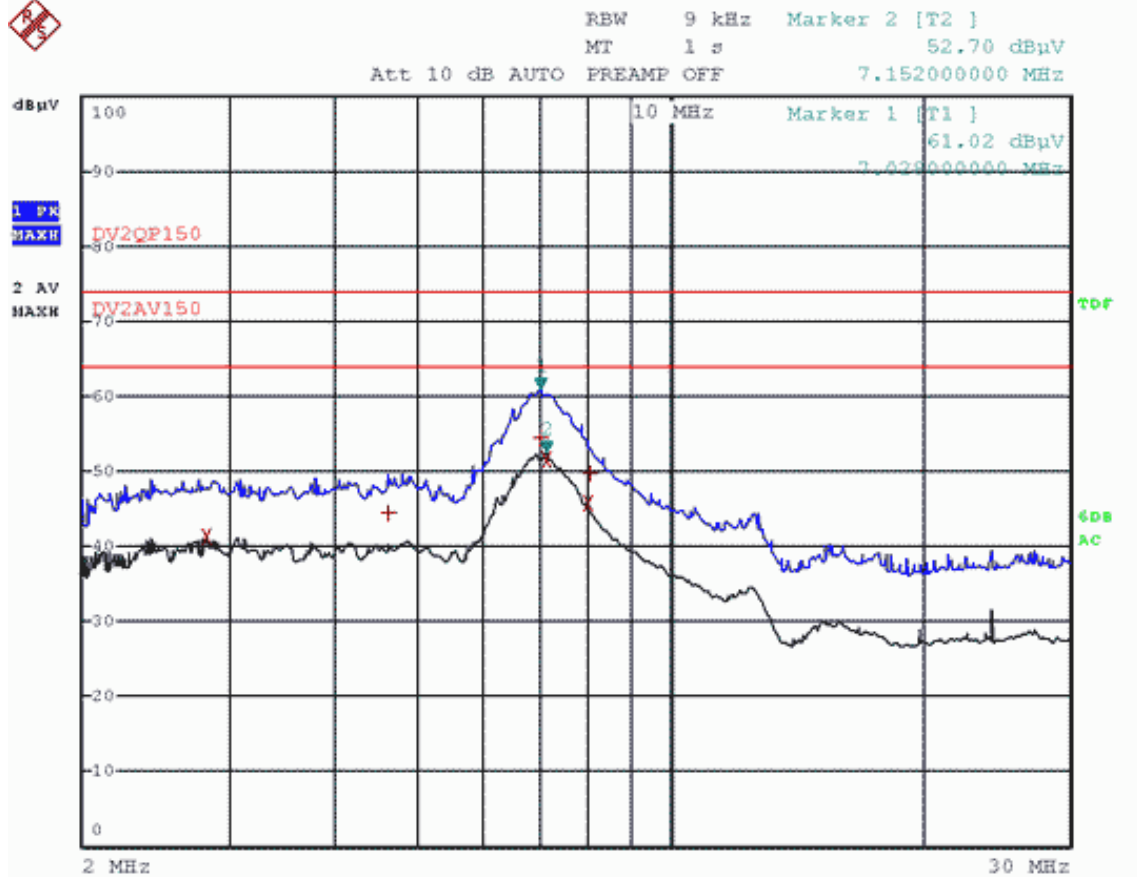
For MSAFBU-12HRDN8-QRD0GW

COOL-OUT-L



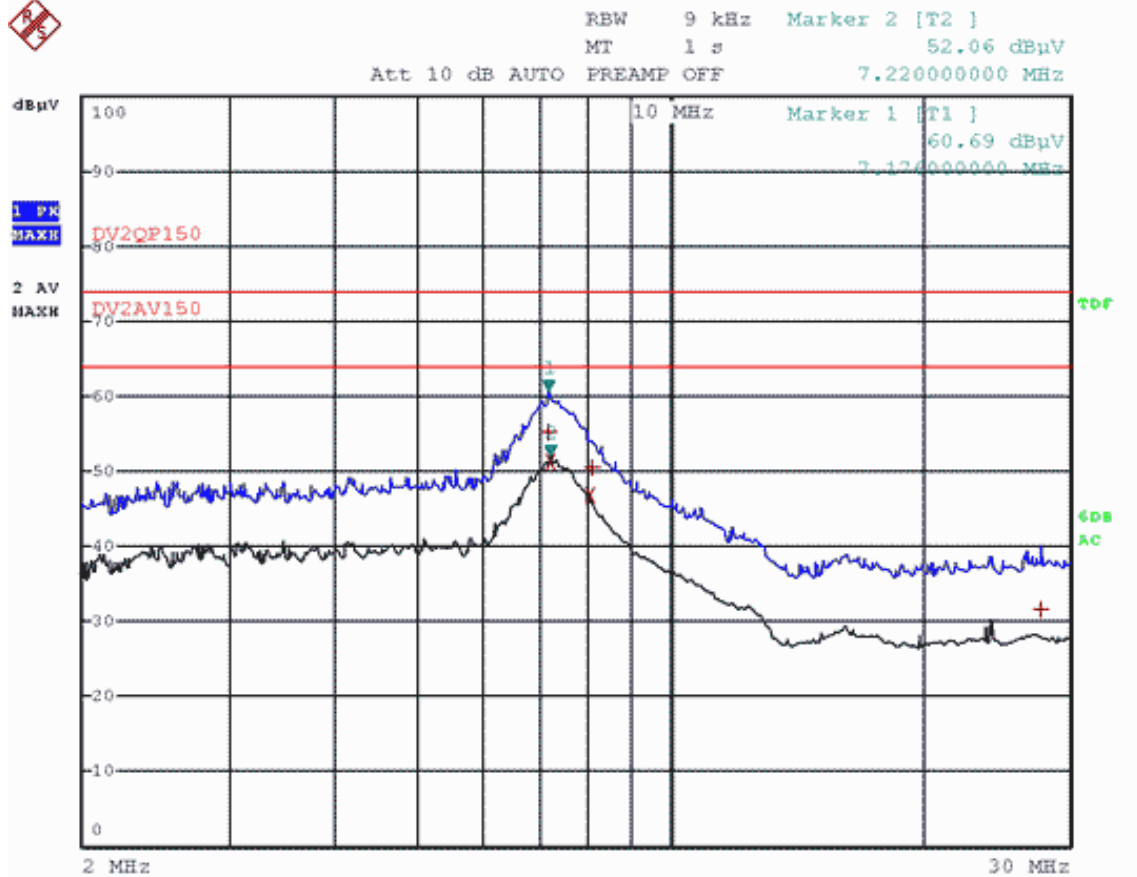
TRACE	FREQUENCY	LEVEL dBμV	DELTA LIMIT dB
2 Average	7.216 MHz	51.34	-12.65
1 Quasi Peak	6.952 MHz	55.56	-18.43
2 Average	8.016 MHz	45.10	-18.89
2 Average	2.776 MHz	41.33	-22.66
1 Quasi Peak	8.064 MHz	48.97	-25.02
1 Quasi Peak	2.872 MHz	44.48	-29.51

COOL-OUT-N



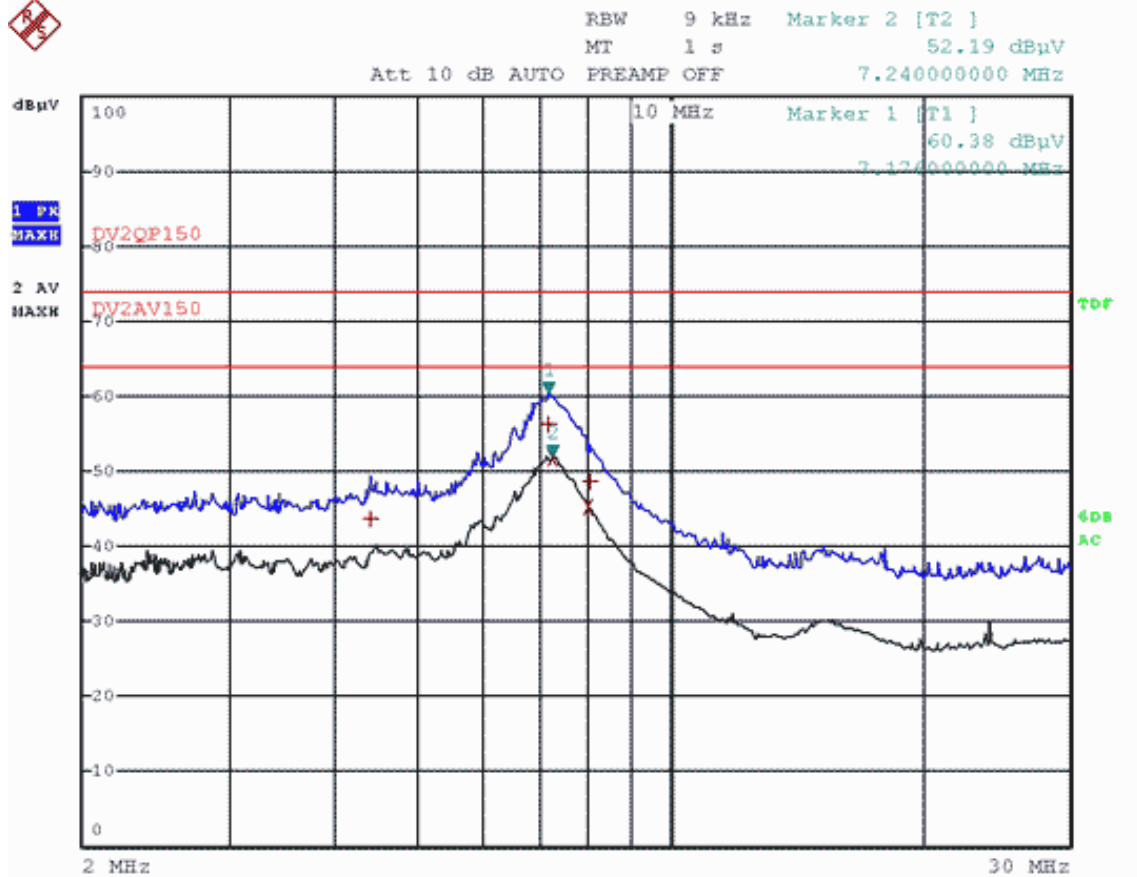
TRACE	FREQUENCY	LEVEL dBμV	DELTA LIMIT dB
2 Average	7.152 MHz	51.51	-12.48
2 Average	8.016 MHz	45.85	-18.14
1 Quasi Peak	7.028 MHz	54.57	-19.42
2 Average	2.804 MHz	41.26	-22.73
1 Quasi Peak	8.024 MHz	49.82	-24.17
1 Quasi Peak	4.628 MHz	44.40	-29.59

COOL-OUT-S



TRACE	FREQUENCY	LEVEL dBμV	DELTA LIMIT dB
2 Average	7.22 MHz	51.37	-12.62
2 Average	8.04 MHz	46.73	-17.26
1 Quasi Peak	7.176 MHz	55.36	-18.63
1 Quasi Peak	8.068 MHz	50.46	-23.54
1 Quasi Peak	27.676 MHz	31.57	-42.42

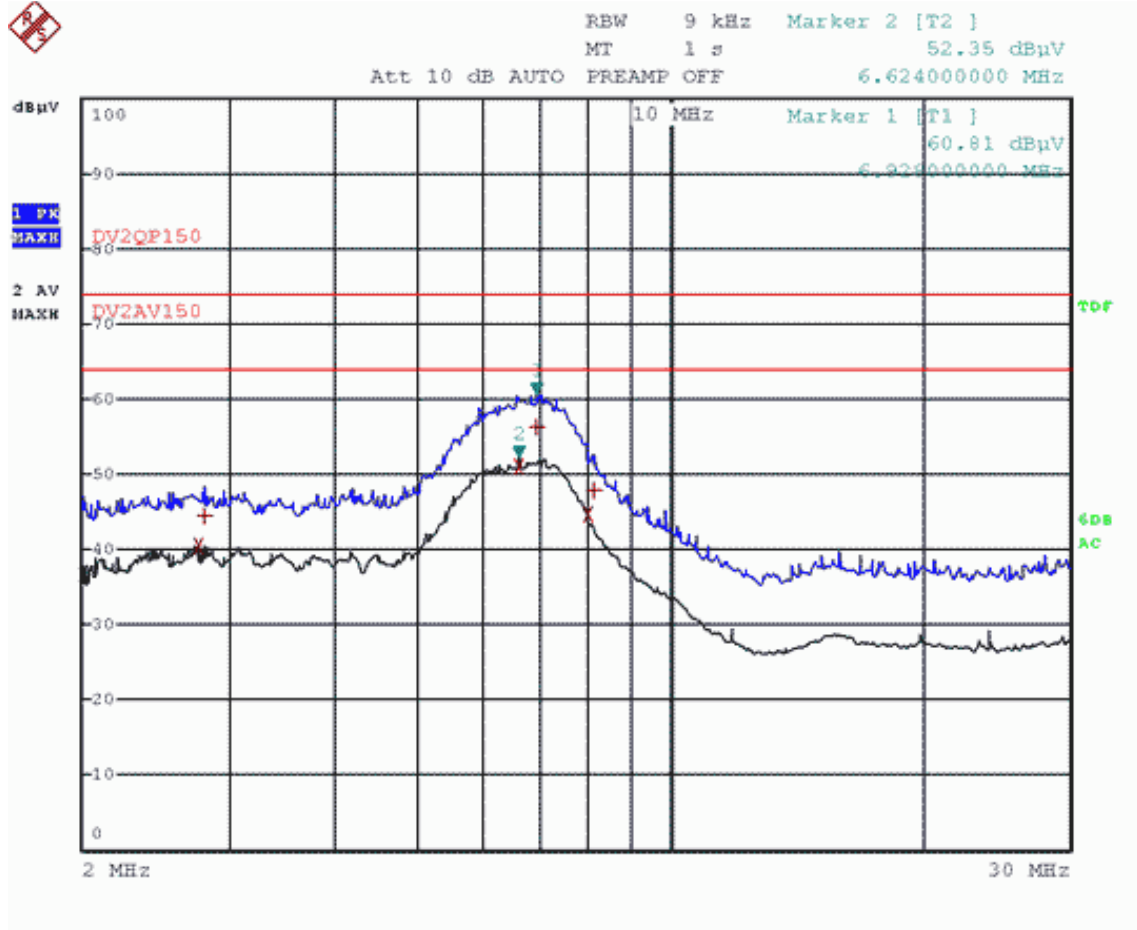
COOL-OUT-PE



TRACE	FREQUENCY	LEVEL dBμV	DELTA LIMIT dB
2 Average	7.24 MHz	51.94	-12.05
1 Quasi Peak	7.176 MHz	56.32	-17.67
2 Average	8.016 MHz	45.18	-18.81
1 Quasi Peak	8.024 MHz	48.64	-25.35
1 Quasi Peak	4.412 MHz	43.80	-30.19

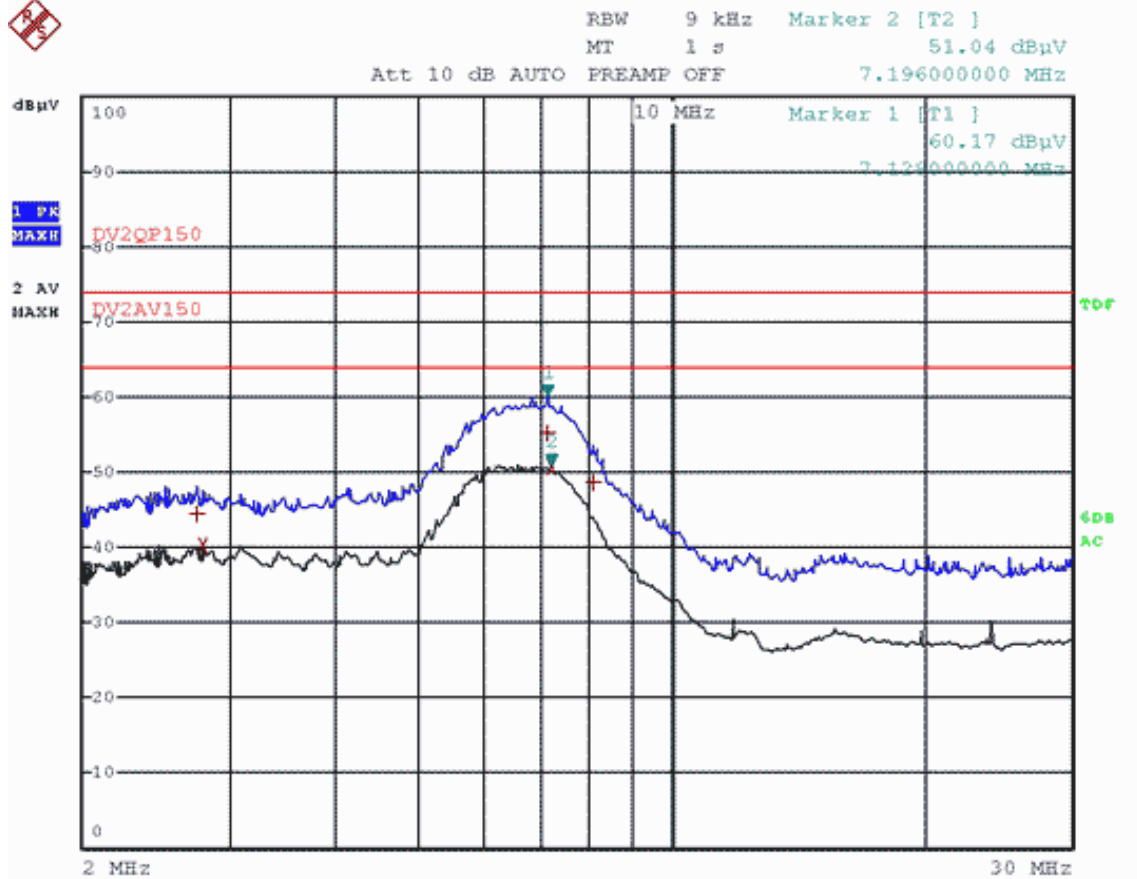
For MSAFBU-09HRDN8-QRD0GW

COOL-OUT-L



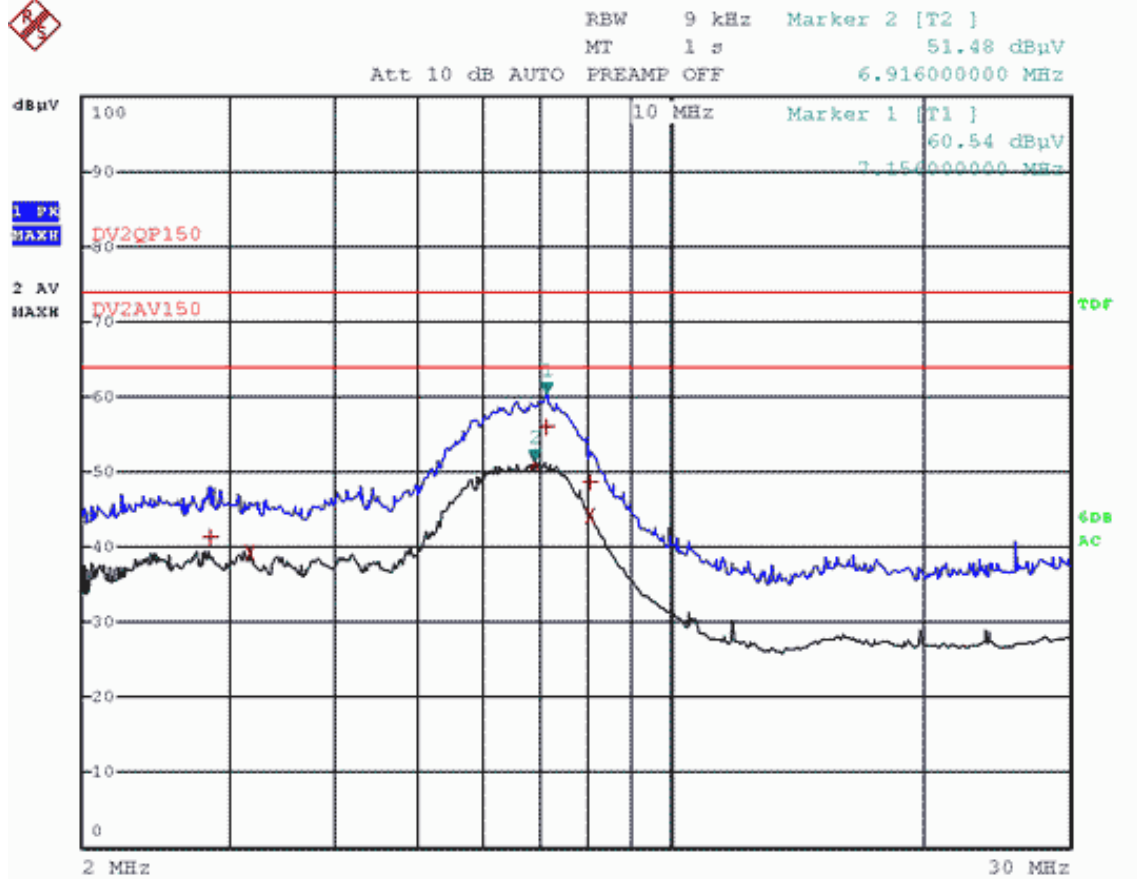
TRACE	FREQUENCY	LEVEL dBμV	DELTA LIMIT dB
2 Average	6.624 MHz	51.15	-12.84
1 Quasi Peak	6.928 MHz	56.17	-17.83
2 Average	8.016 MHz	44.84	-19.15
2 Average	2.752 MHz	40.58	-23.41
1 Quasi Peak	8.128 MHz	47.95	-26.04
1 Quasi Peak	2.8 MHz	44.54	-29.45

COOL-OUT-N



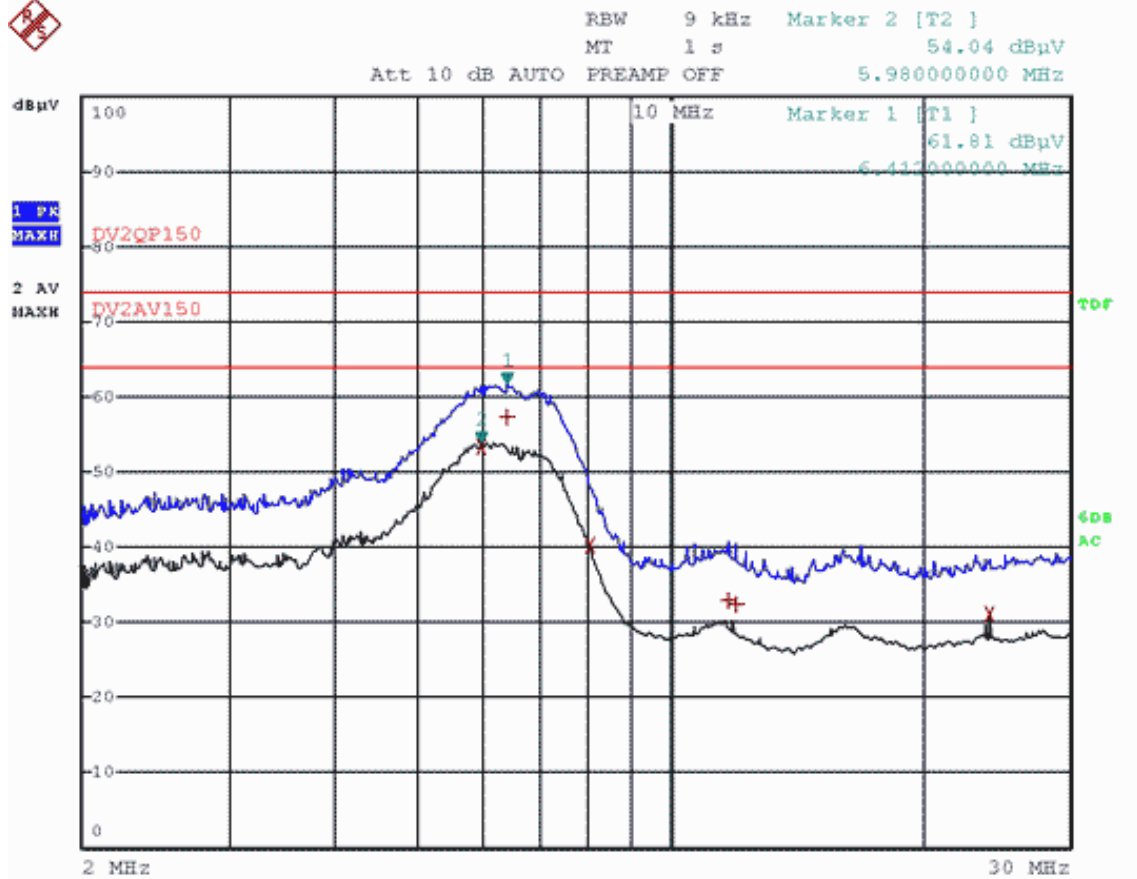
TRACE	FREQUENCY	LEVEL dBμV	DELTA LIMIT dB
2 Average	7.196 MHz	50.70	-13.29
1 Quasi Peak	7.128 MHz	55.23	-18.76
2 Average	2.776 MHz	40.39	-23.60
1 Quasi Peak	8.088 MHz	48.77	-25.22
1 Quasi Peak	2.728 MHz	44.39	-29.60

COOL-OUT-S



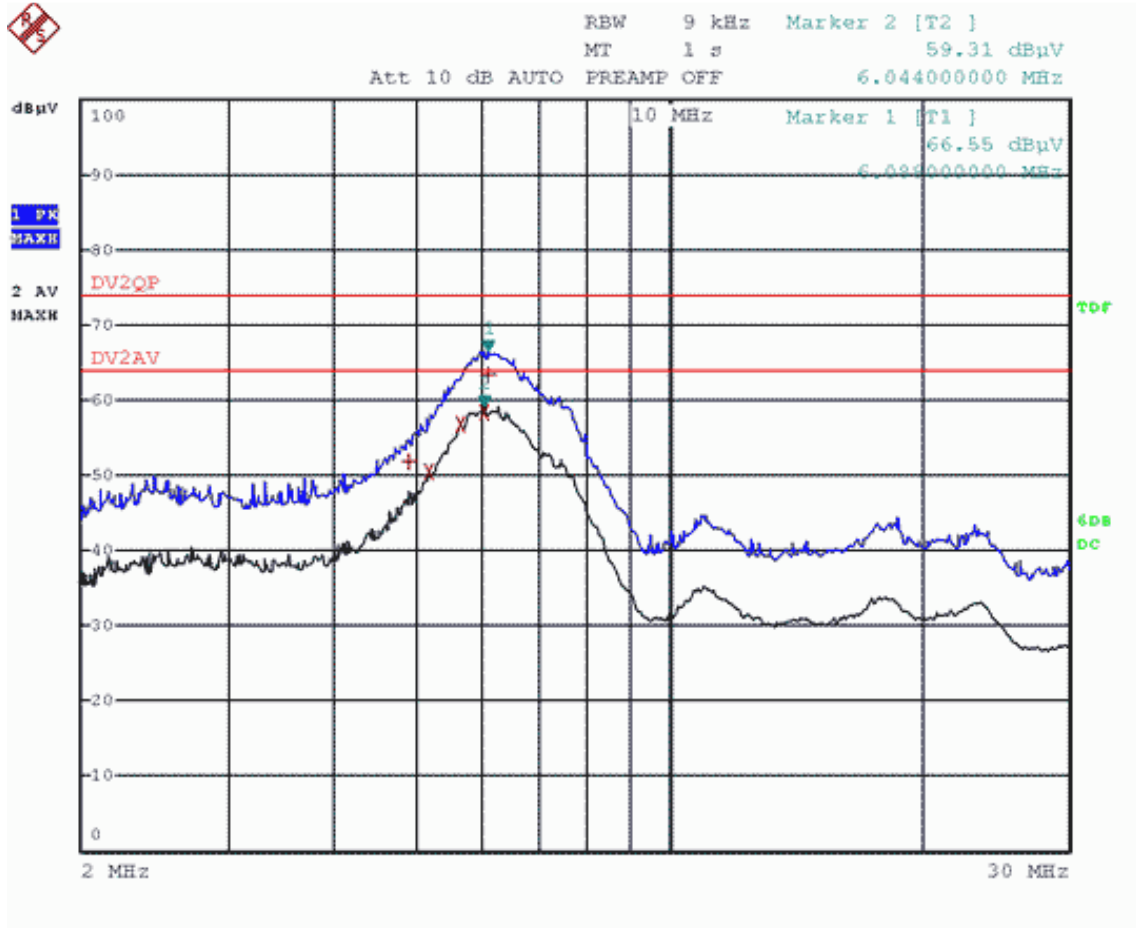
TRACE	FREQUENCY	LEVEL dBμV	DELTA LIMIT dB
2 Average	6.916 MHz	51.32	-12.67
1 Quasi Peak	7.156 MHz	55.93	-18.06
2 Average	8.028 MHz	44.35	-19.65
2 Average	3.16 MHz	39.24	-24.76
1 Quasi Peak	8.028 MHz	48.57	-25.42
1 Quasi Peak	2.84 MHz	41.20	-32.79

COOL-OUT-PE



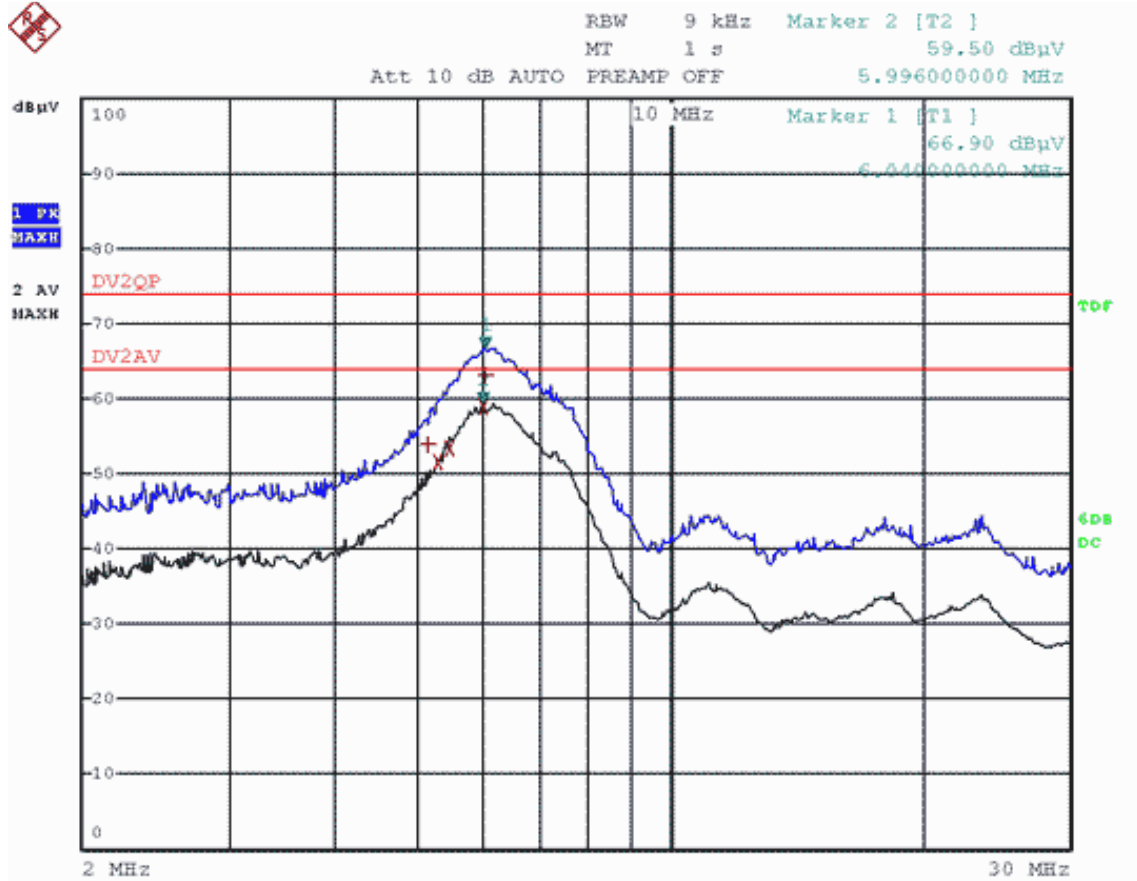
TRACE	FREQUENCY	LEVEL dBuV	DELTA LIMIT dB
2 Average	5.98 MHz	53.43	-10.57
1 Quasi Peak	6.412 MHz	57.22	-16.77
2 Average	8.04 MHz	40.26	-23.73
2 Average	24.004 MHz	30.99	-33.01
1 Quasi Peak	11.772 MHz	33.06	-40.93
1 Quasi Peak	12.036 MHz	32.30	-41.69

For Collocation 2
For MSAFDU-24HRFN8-QRD0GW
COOL-IN-1L



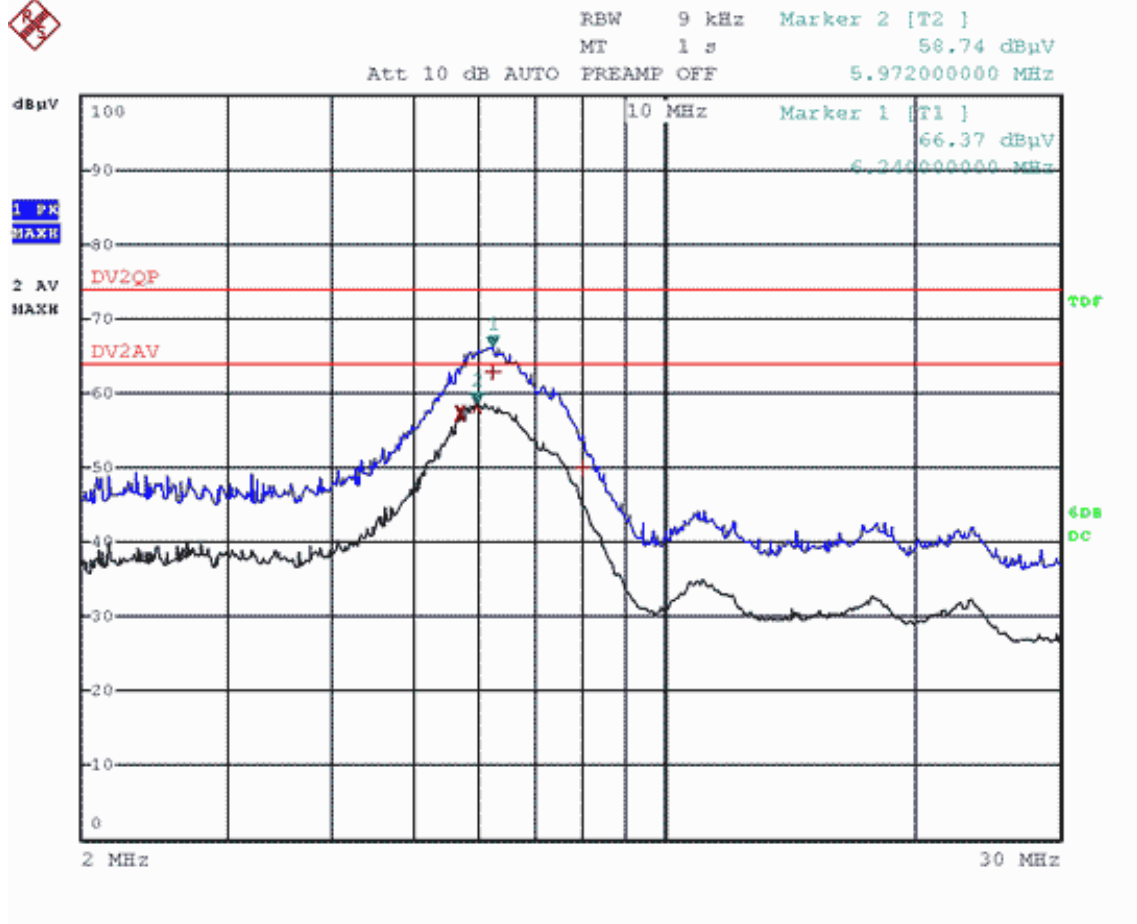
TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
2 Average	6.044 MHz	58.49	-5.50
2 Average	5.664 MHz	56.94	-7.05
1 Quasi Peak	6.088 MHz	63.32	-10.67
2 Average	5.18 MHz	50.40	-13.60
1 Quasi Peak	4.912 MHz	51.94	-22.06

COOL-IN-2N



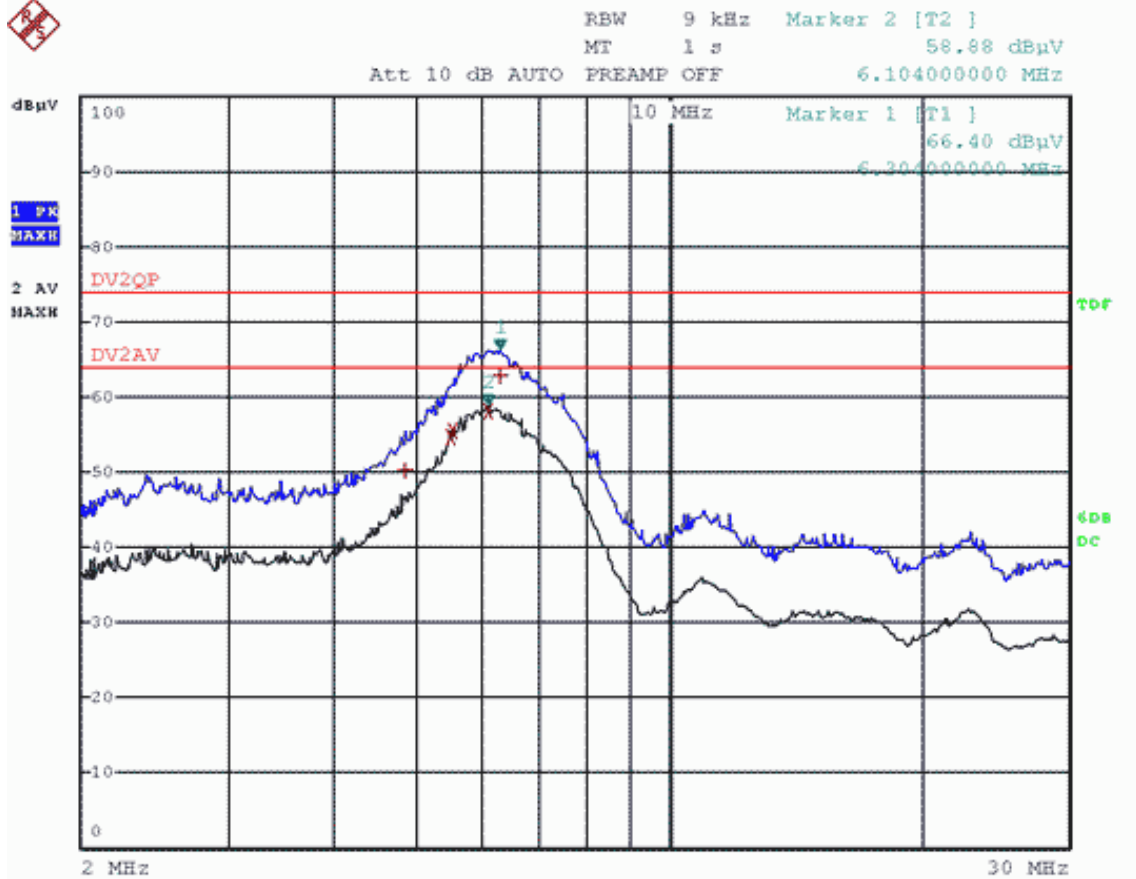
TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
2 Average	5.996 MHz	58.95	-5.04
2 Average	5.46 MHz	53.48	-10.51
1 Quasi Peak	6.04 MHz	63.08	-10.91
2 Average	5.284 MHz	51.64	-12.35
1 Quasi Peak	5.172 MHz	54.02	-19.97

COOL-IN-S



TRACE	FREQUENCY	LEVEL dBμV	DELTA LIMIT dB
2 Average	5.972 MHz	58.50	-5.49
2 Average	5.704 MHz	57.27	-6.72
2 Average	5.728 MHz	57.23	-6.77
1 Quasi Peak	6.24 MHz	62.98	-11.01
1 Quasi Peak	8.008 MHz	50.07	-23.92

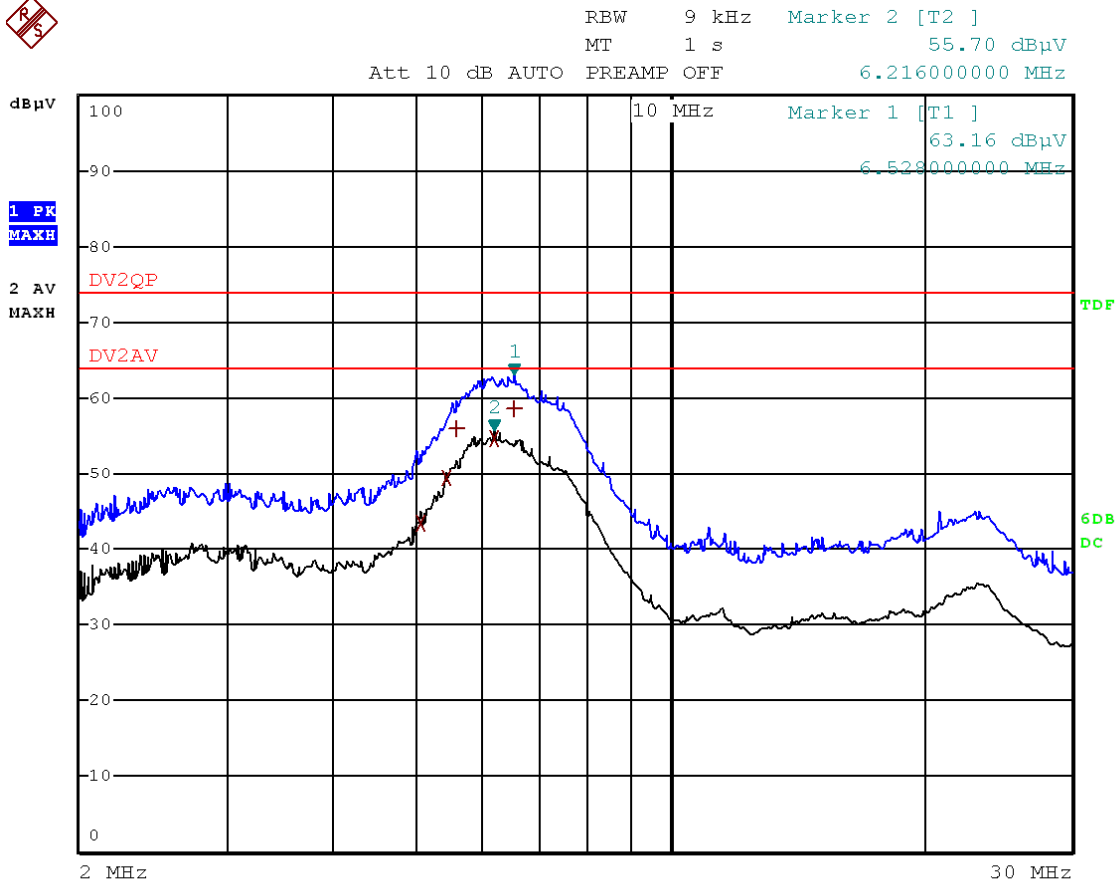
COOL-IN-PE



TRACE	FREQUENCY	LEVEL dBμV	DELTA LIMIT dB
2 Average	6.104 MHz	58.01	-5.98
2 Average	5.552 MHz	55.62	-8.37
2 Average	5.508 MHz	54.69	-9.30
1 Quasi Peak	6.304 MHz	62.89	-11.10
1 Quasi Peak	4.868 MHz	50.21	-23.78

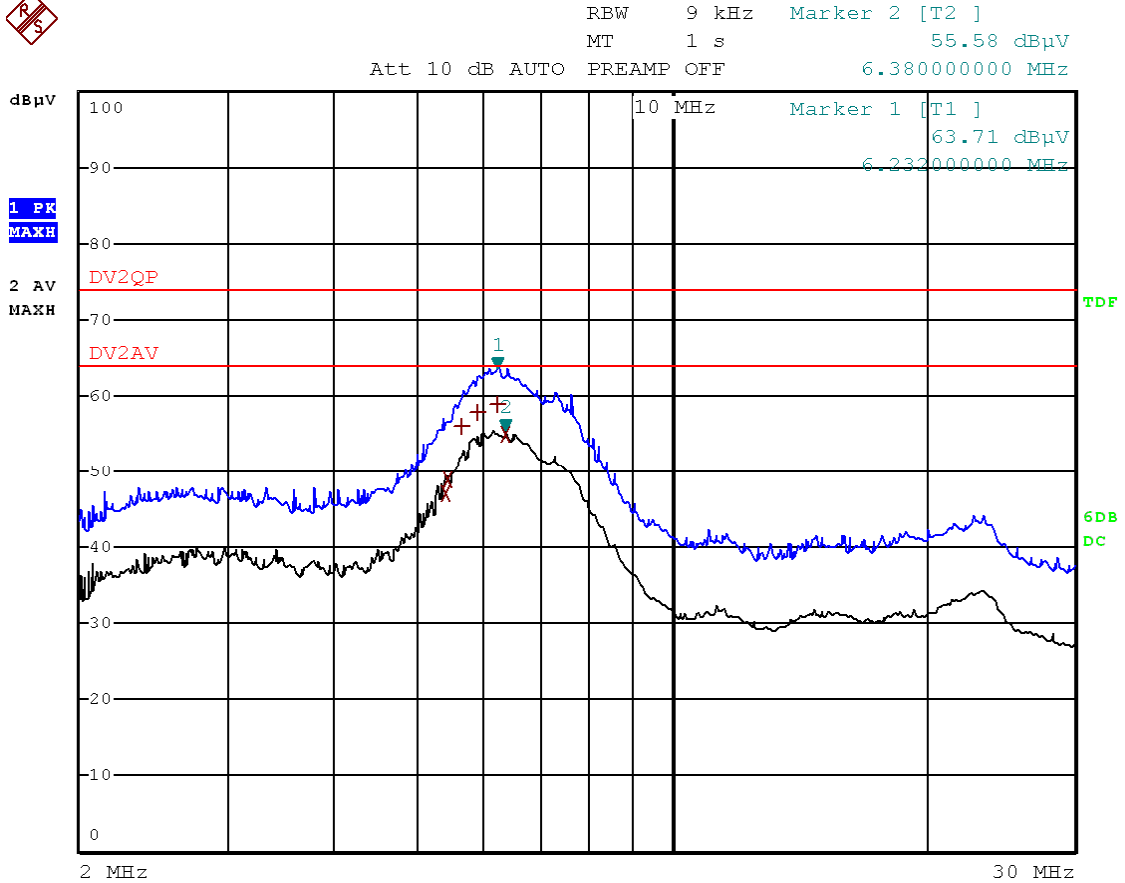
For MSAFBU-09HRDN8-QRD0GW

COOL-IN-1L



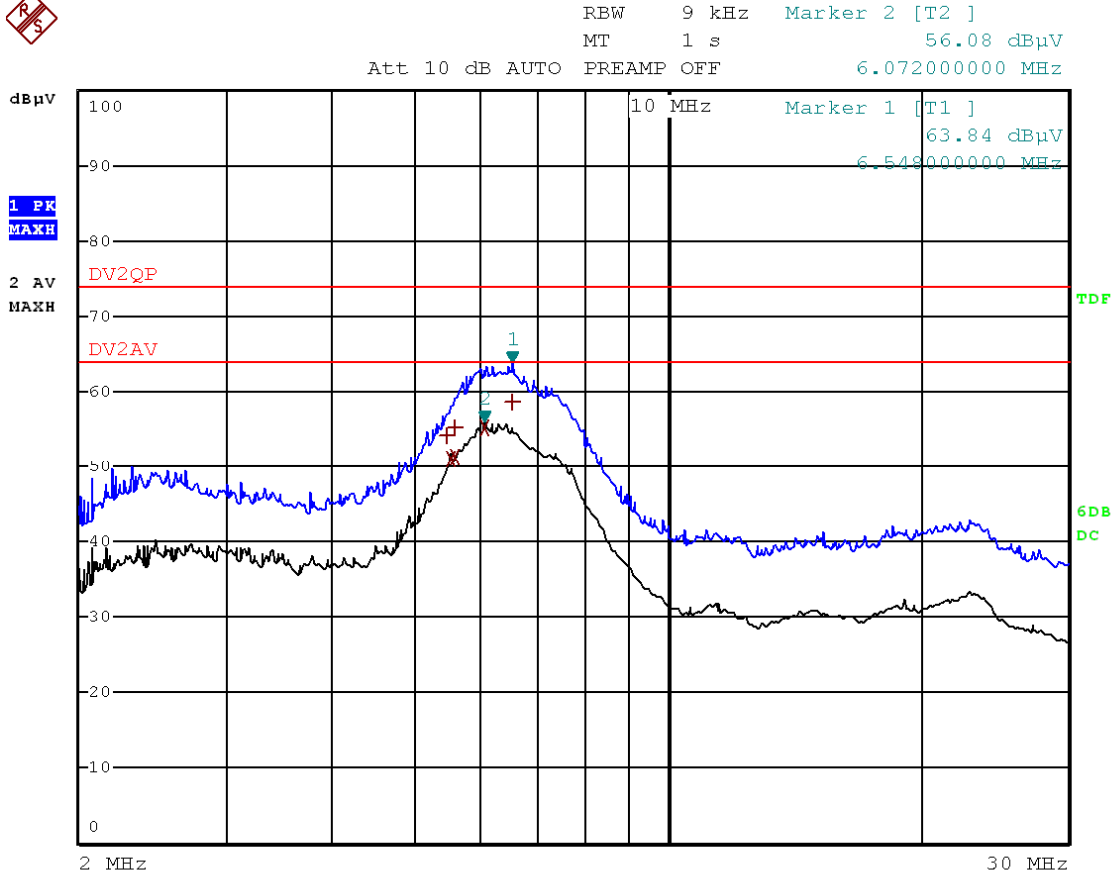
TRACE	FREQUENCY	LEVEL dBμV	DELTA LIMIT dB
2 Average	6.216 MHz	54.68	-9.31
2 Average	5.448 MHz	49.35	-14.64
1 Quasi Peak	6.528 MHz	58.60	-15.39
1 Quasi Peak	5.6 MHz	56.10	-17.89
2 Average	5.076 MHz	43.52	-20.47

COOL-IN-2N



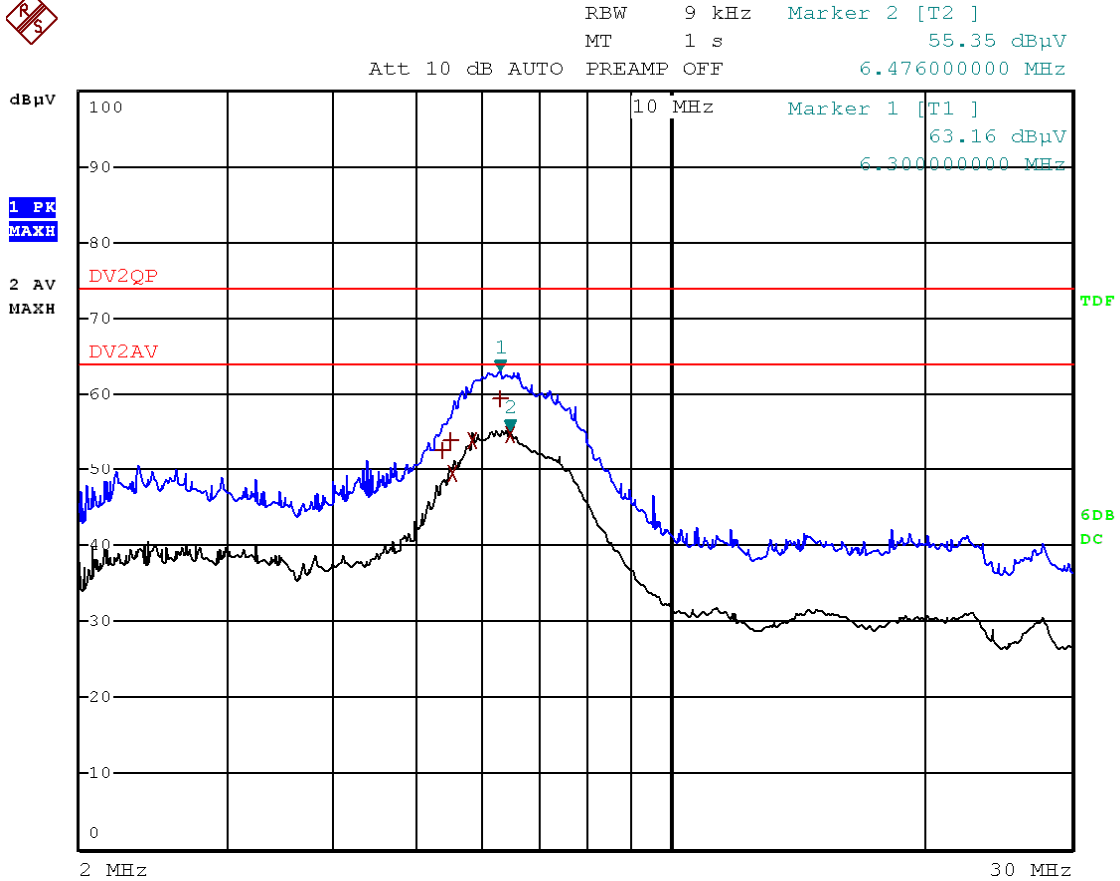
TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
2 Average	6.38 MHz	54.86	-9.13
2 Average	5.456 MHz	48.90	-15.09
1 Quasi Peak	6.232 MHz	58.85	-15.14
1 Quasi Peak	5.92 MHz	57.98	-16.01
2 Average	5.412 MHz	47.20	-16.79
1 Quasi Peak	5.652 MHz	55.96	-18.03

COOL-IN-S



TRACE	FREQUENCY	LEVEL dBμV	DELTA LIMIT dB
2 Average	6.072 MHz	55.22	-8.77
2 Average	5.588 MHz	51.33	-12.66
2 Average	5.544 MHz	50.94	-13.06
1 Quasi Peak	6.548 MHz	58.74	-15.25
1 Quasi Peak	5.584 MHz	55.33	-18.66
1 Quasi Peak	5.476 MHz	54.14	-19.85

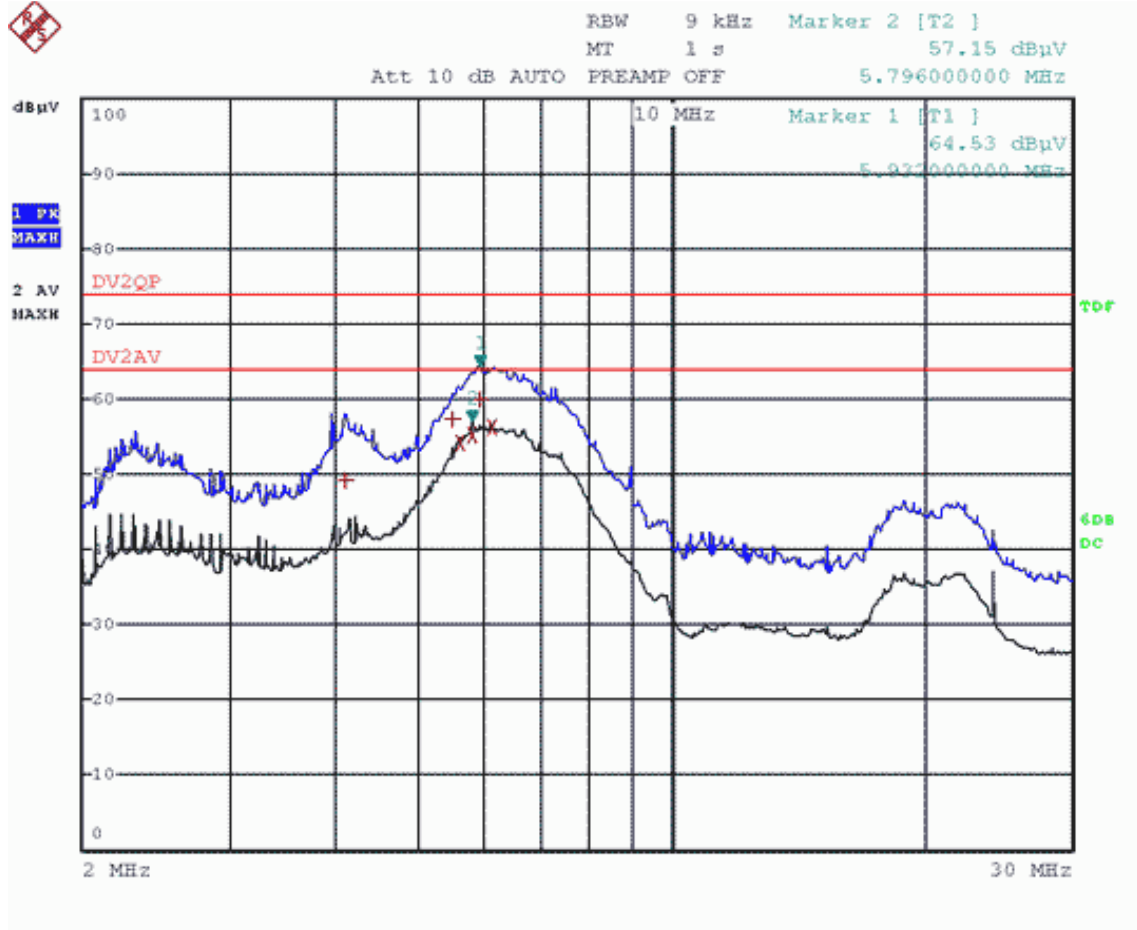
COOL-IN-PE



TRACE	FREQUENCY	LEVEL dBμV	DELTA LIMIT dB
2 Average	6.476 MHz	54.71	-9.28
2 Average	5.836 MHz	53.96	-10.03
2 Average	5.552 MHz	49.54	-14.45
1 Quasi Peak	6.3 MHz	59.46	-14.53
1 Quasi Peak	5.508 MHz	53.96	-20.03
1 Quasi Peak	5.396 MHz	52.75	-21.24

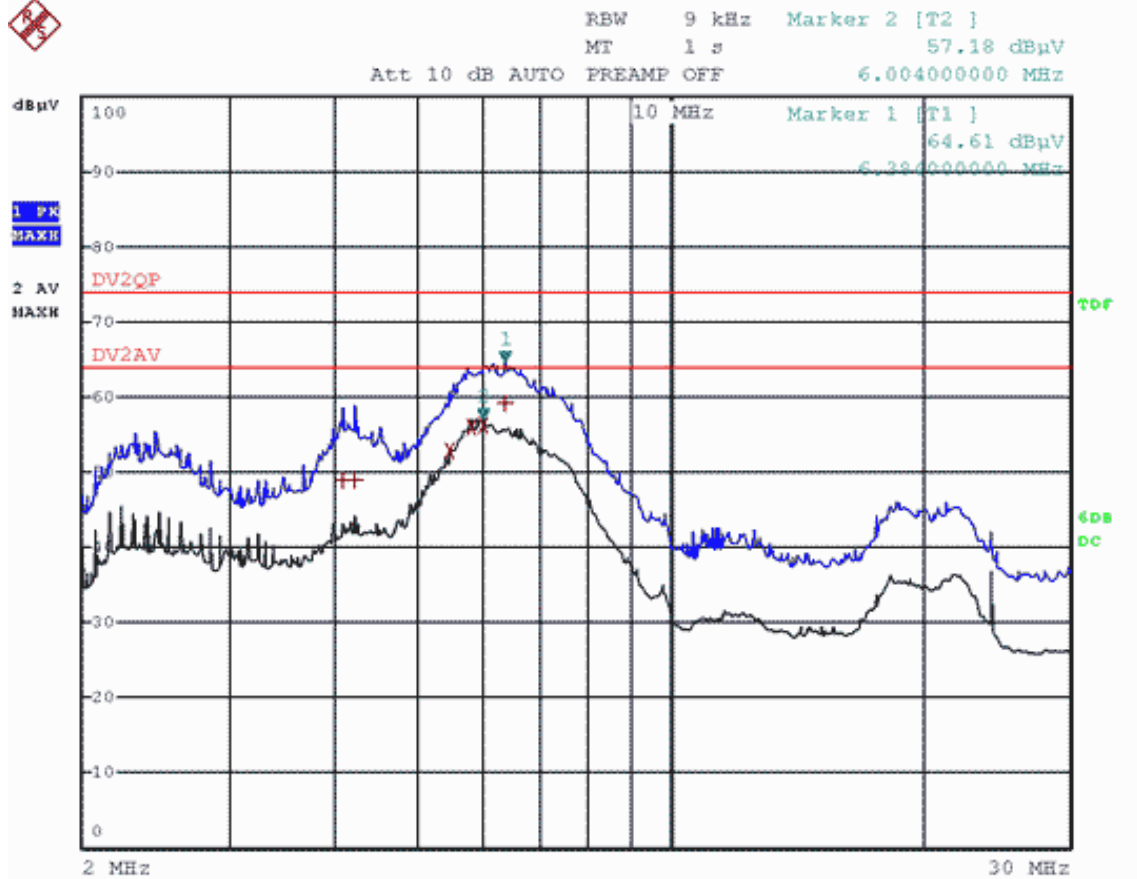
For MSAFBU-12HRDN8-QRD0GW

COOL-IN-1L



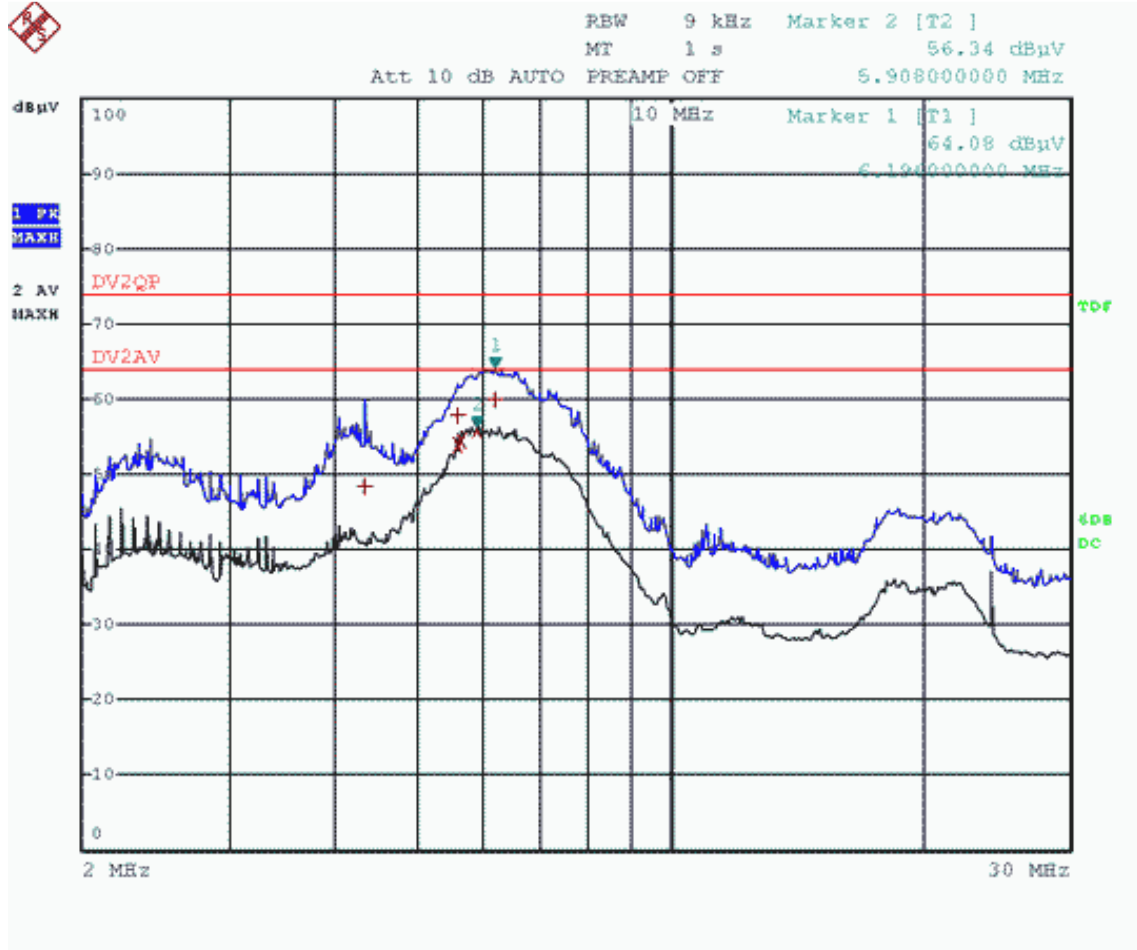
TRACE	FREQUENCY	LEVEL dBμV	DELTA LIMIT dB
2 Average	6.132 MHz	56.36	-7.63
2 Average	5.796 MHz	55.22	-8.77
2 Average	5.62 MHz	54.08	-9.91
1 Quasi Peak	5.932 MHz	59.97	-14.02
1 Quasi Peak	5.508 MHz	57.37	-16.62
1 Quasi Peak	4.104 MHz	49.20	-24.79

COOL-IN-2N



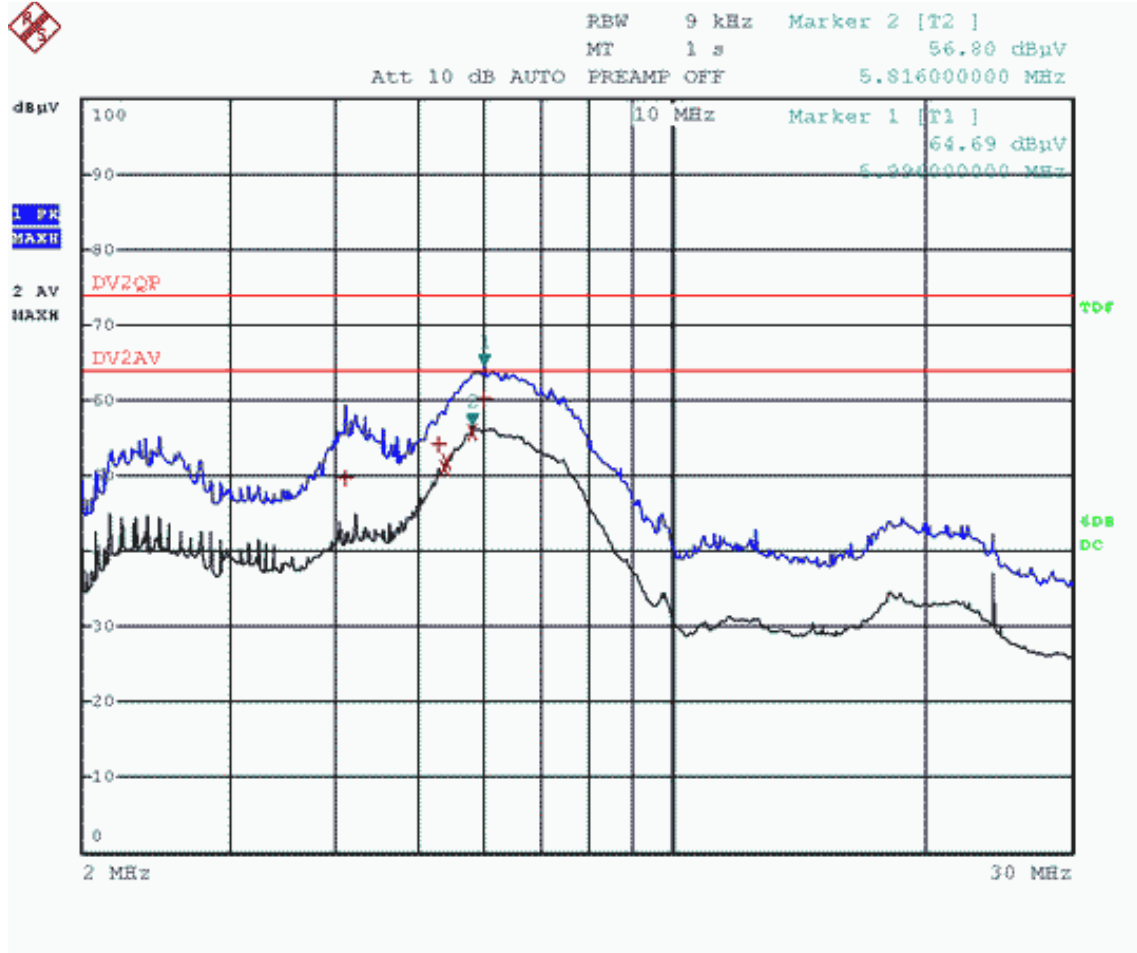
TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
2 Average	6.004 MHz	56.20	-7.79
2 Average	5.824 MHz	56.09	-7.90
2 Average	5.468 MHz	53.01	-10.99
1 Quasi Peak	6.384 MHz	59.21	-14.78
1 Quasi Peak	4.08 MHz	49.07	-24.92
1 Quasi Peak	4.216 MHz	48.84	-25.15

COOL-IN-S



TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
2 Average	5.908 MHz	56.11	-7.88
2 Average	5.664 MHz	54.46	-9.53
2 Average	5.596 MHz	53.83	-10.17
1 Quasi Peak	6.196 MHz	60.05	-13.94
1 Quasi Peak	5.596 MHz	57.89	-16.10
1 Quasi Peak	4.332 MHz	48.49	-25.51

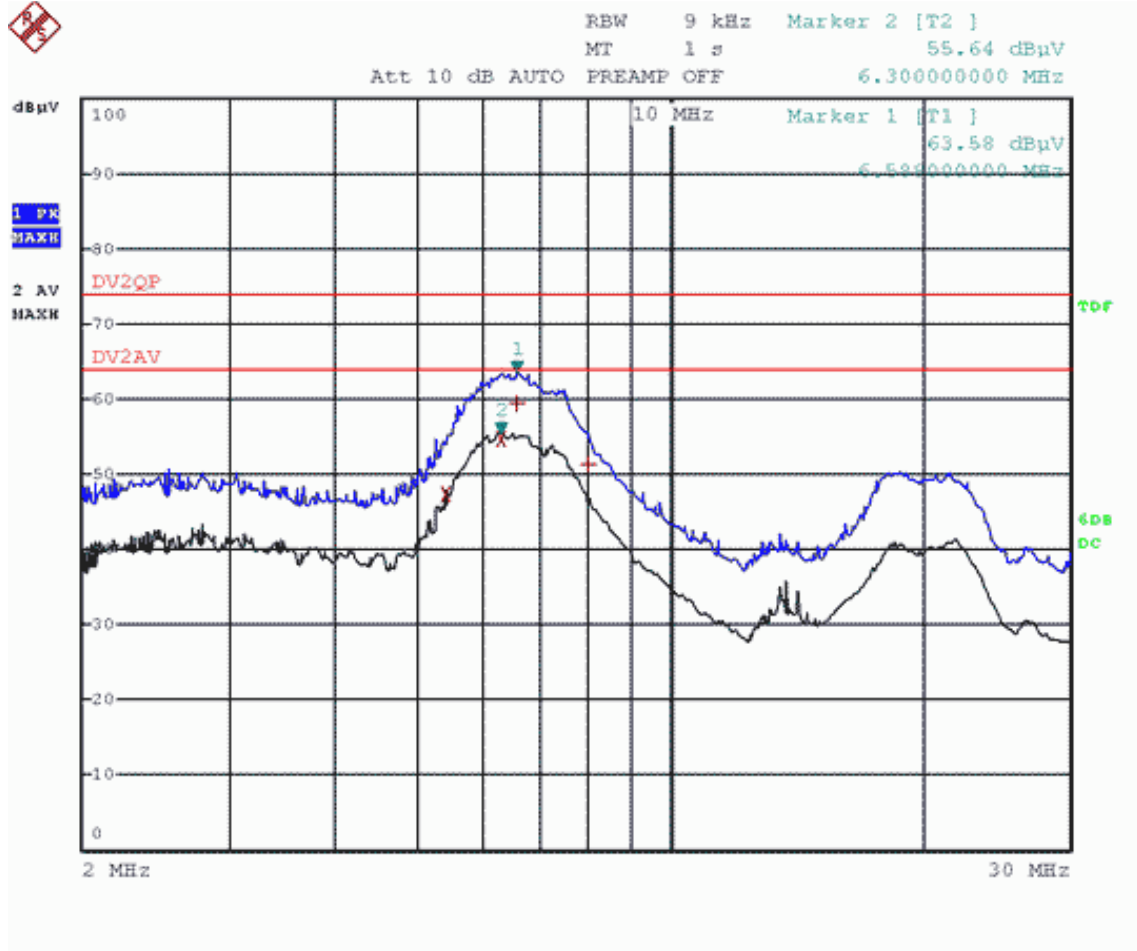
COOL-IN-PE



TRACE	FREQUENCY	LEVEL dBμV	DELTA LIMIT dB
2 Average	5.816 MHz	55.80	-8.19
2 Average	5.42 MHz	51.71	-12.28
2 Average	5.376 MHz	51.10	-12.89
1 Quasi Peak	5.996 MHz	60.29	-13.70
1 Quasi Peak	5.312 MHz	54.08	-19.91
1 Quasi Peak	4.1 MHz	49.74	-24.25

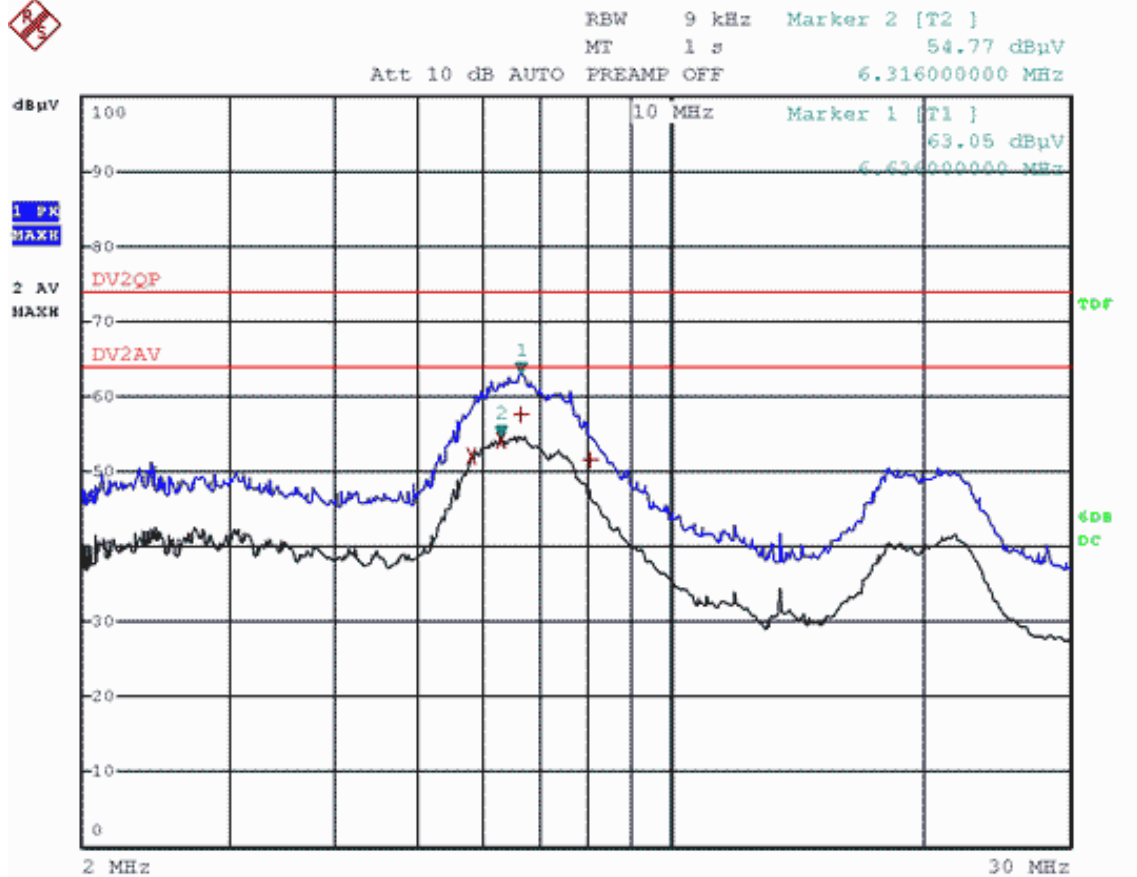
For MSAFDU-24HRFN8-QRD0GW

COOL-OUT-L



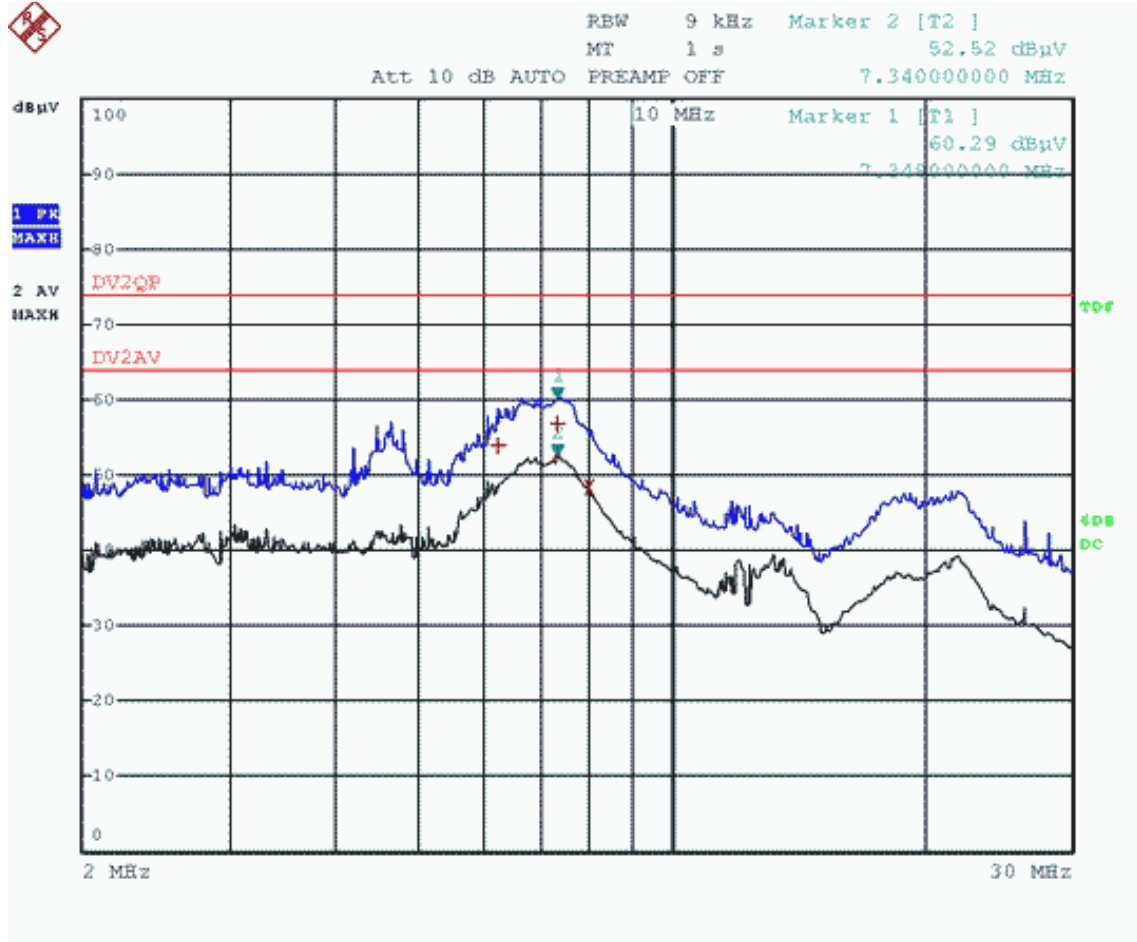
TRACE	FREQUENCY	LEVEL dBμV	DELTA LIMIT dB
2 Average	6.3 MHz	54.84	-9.15
1 Quasi Peak	6.588 MHz	59.41	-14.58
2 Average	5.412 MHz	47.39	-16.60
1 Quasi Peak	8.012 MHz	51.22	-22.77

COOL-OUT-N



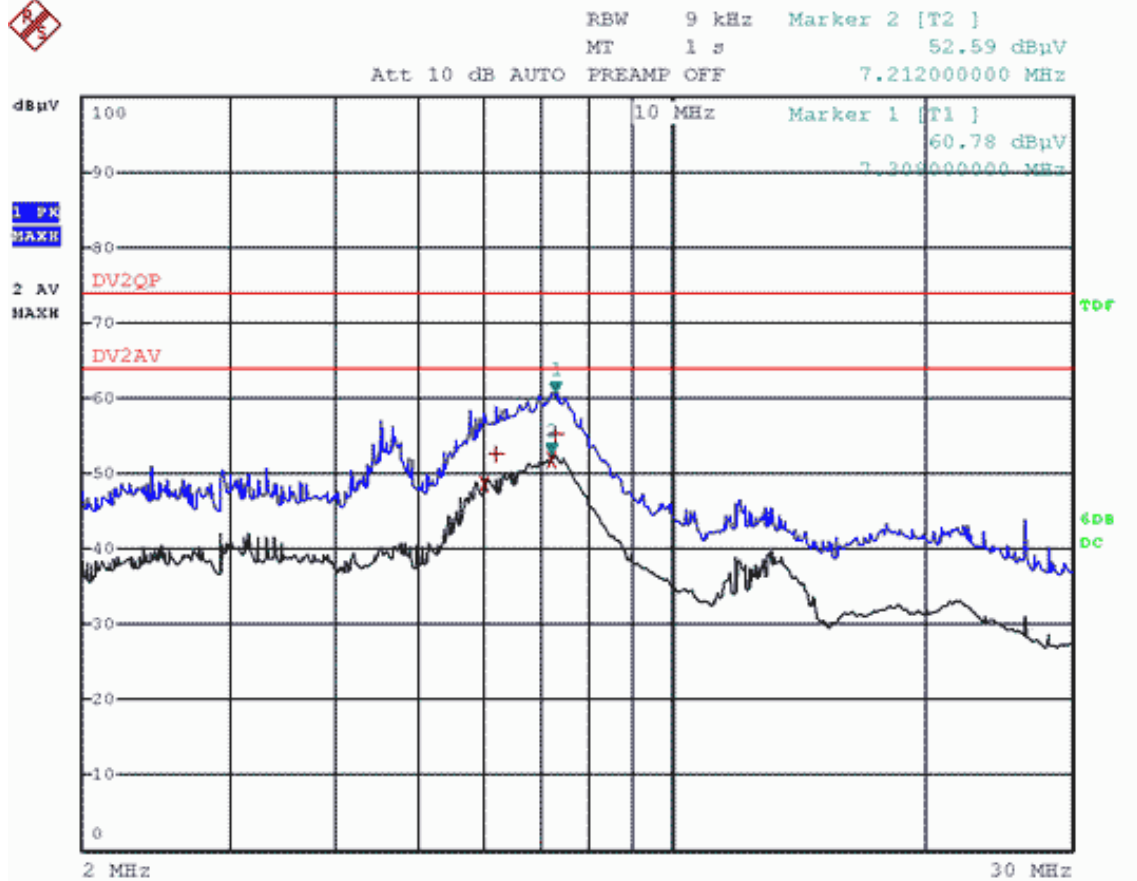
TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
2 Average	6.316 MHz	54.29	-9.70
2 Average	5.808 MHz	52.05	-11.94
1 Quasi Peak	6.636 MHz	57.52	-16.47
1 Quasi Peak	8.02 MHz	51.67	-22.32

COOL-OUT-S



TRACE	FREQUENCY	LEVEL dBμV	DELTA LIMIT dB
2 Average	7.34 MHz	53.17	-10.82
2 Average	8.008 MHz	48.30	-15.69
1 Quasi Peak	7.348 MHz	56.88	-17.12
1 Quasi Peak	6.232 MHz	54.04	-19.95

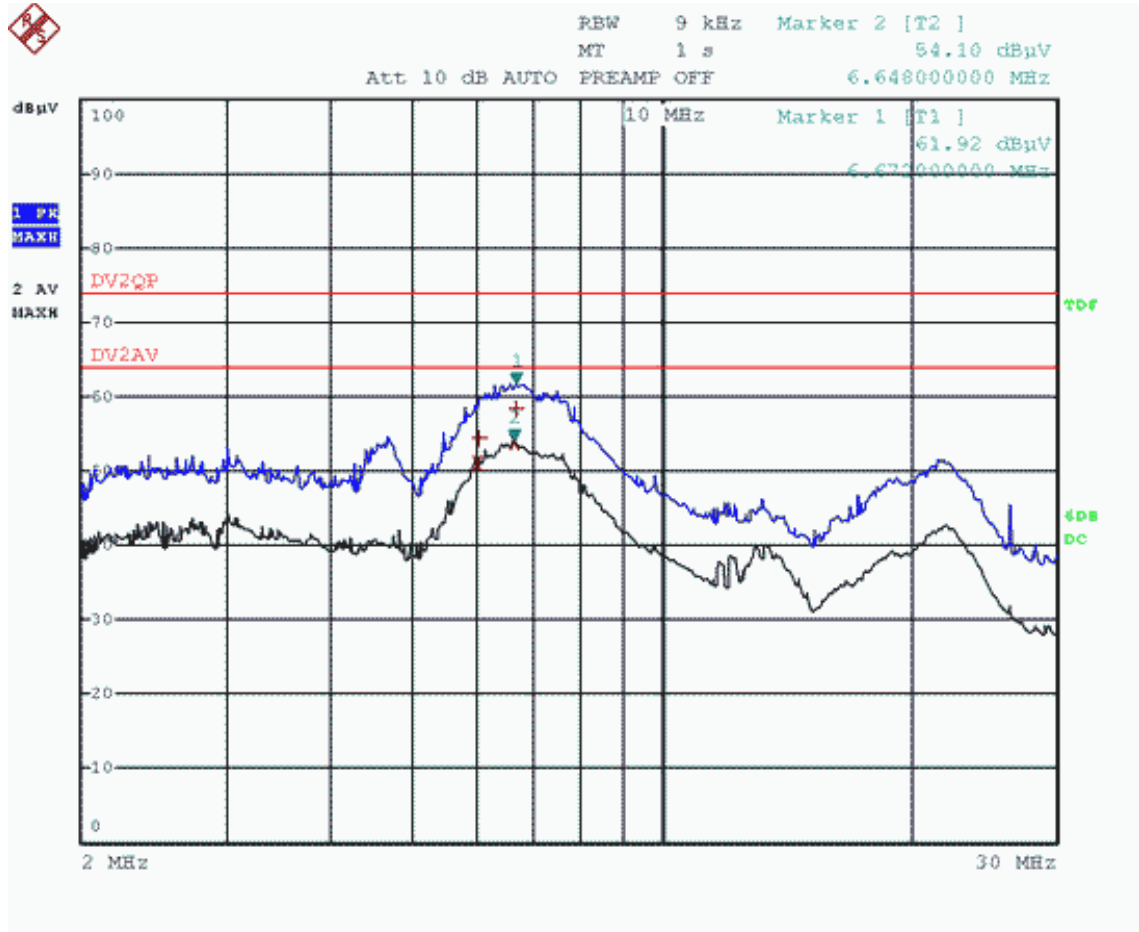
COOL-OUT-PE



TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
2 Average	7.212 MHz	51.71	-12.28
2 Average	5.992 MHz	48.72	-15.27
1 Quasi Peak	7.308 MHz	55.13	-18.86
1 Quasi Peak	6.192 MHz	52.75	-21.24

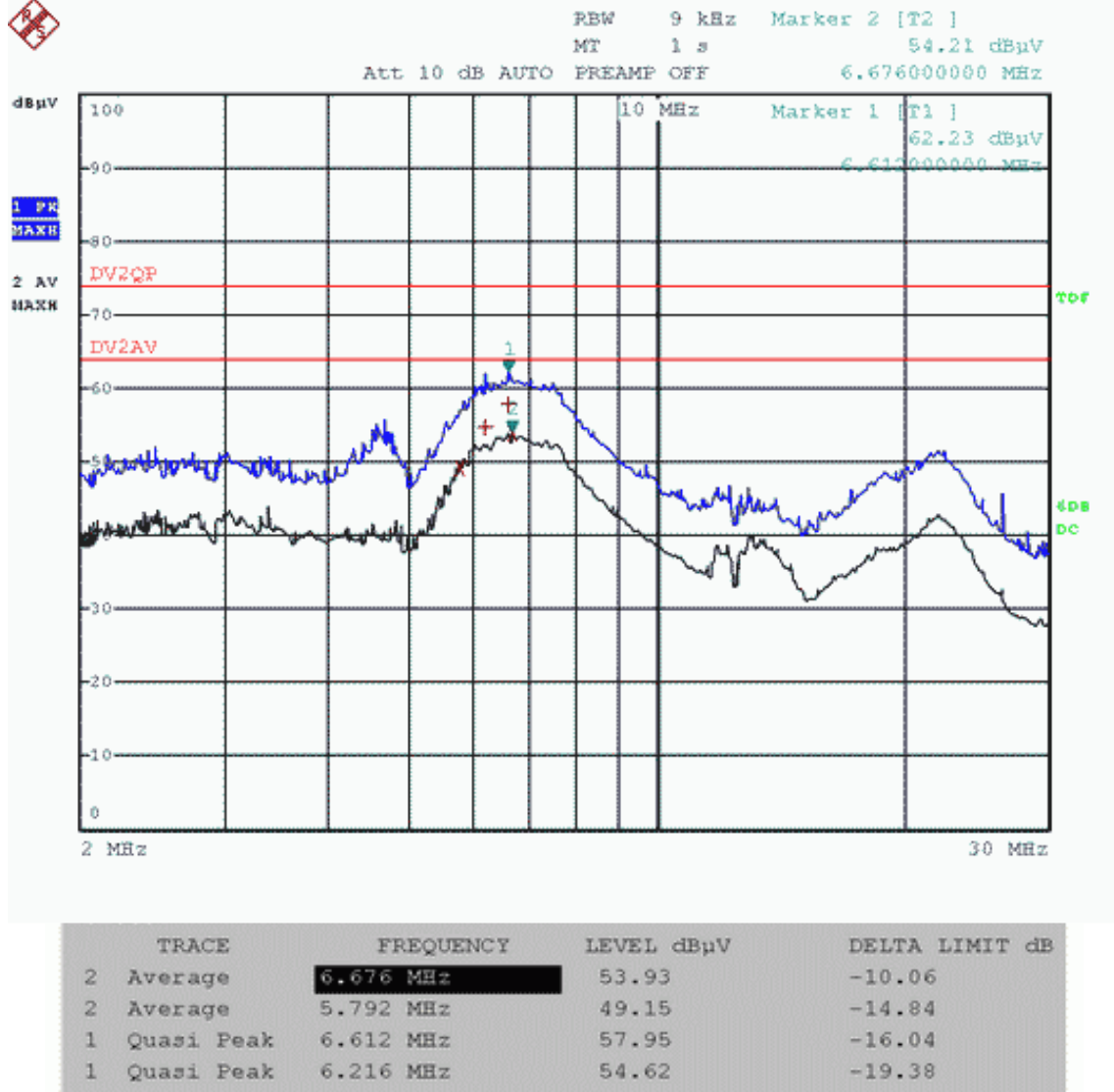
For MSAFBU-12HRDN8-QRD0GW

COOL-OUT-L

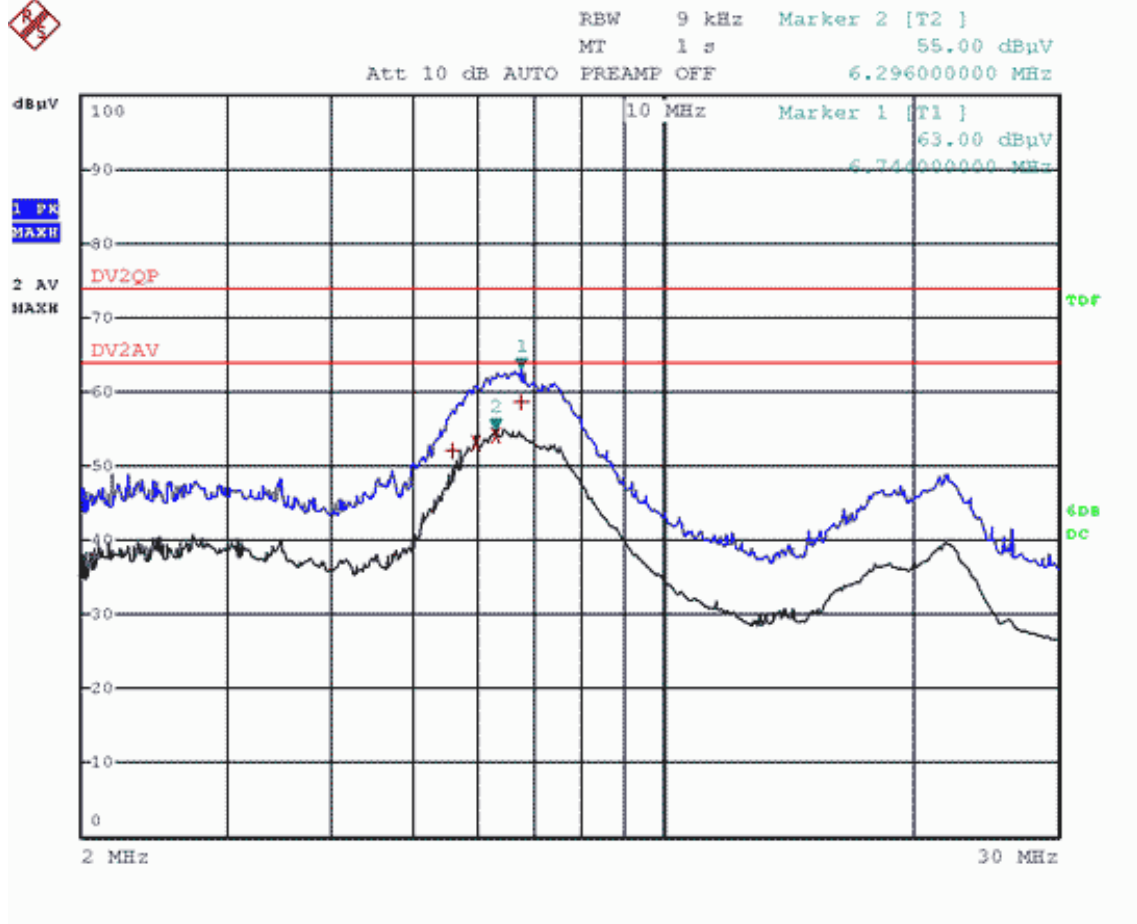


TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
2 Average	6.648 MHz	53.87	-10.12
2 Average	6.024 MHz	50.96	-13.04
1 Quasi Peak	6.672 MHz	58.38	-15.61
1 Quasi Peak	6.024 MHz	54.33	-19.66

COOL-OUT-N

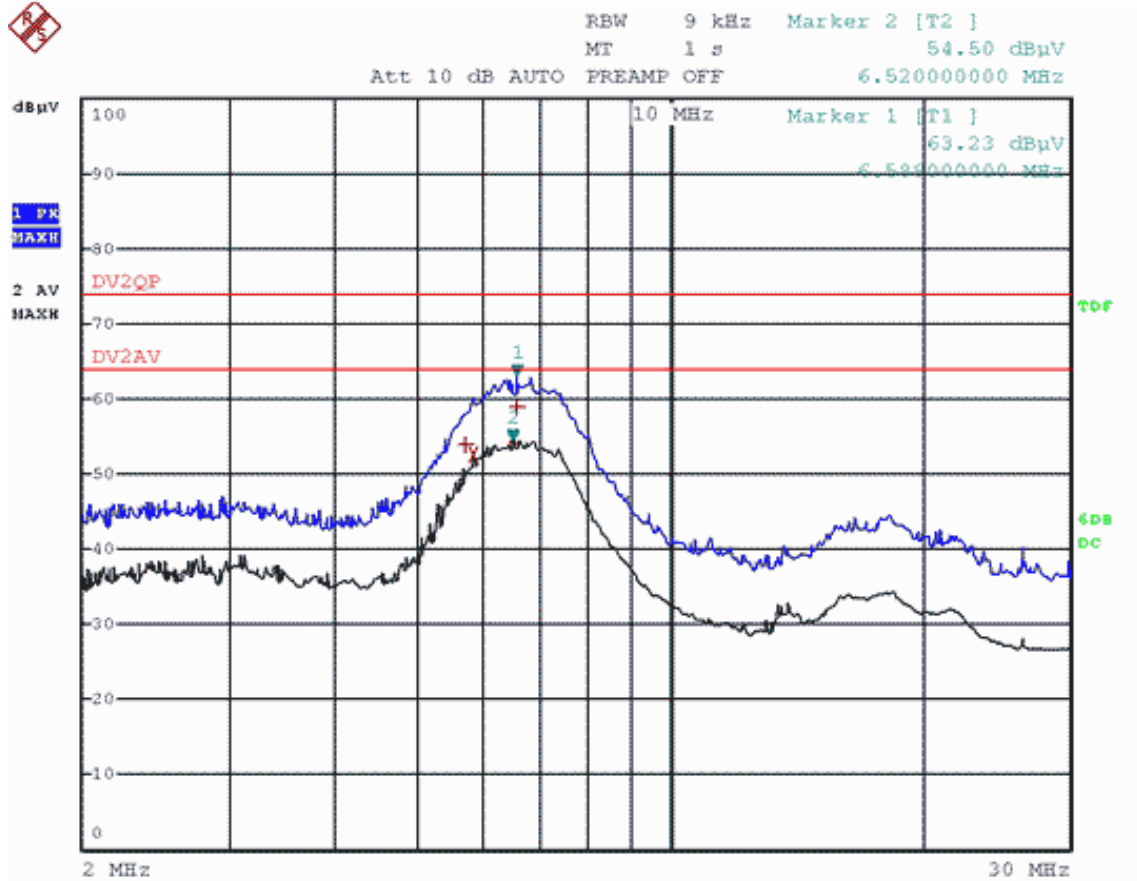


COOL-OUT-S



TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
2 Average	6.296 MHz	54.11	-9.88
2 Average	5.984 MHz	53.22	-10.77
1 Quasi Peak	6.744 MHz	58.55	-15.44
1 Quasi Peak	5.584 MHz	52.16	-21.84

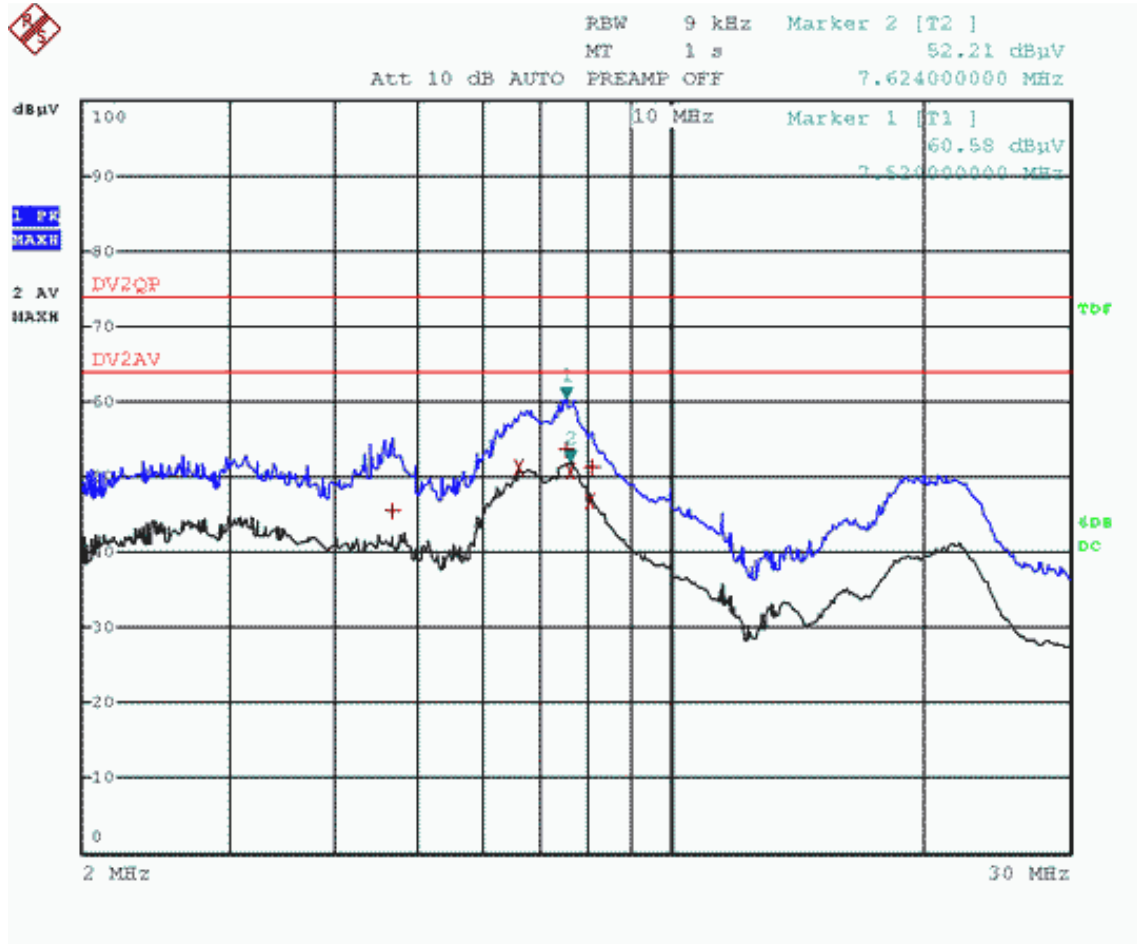
COOL-OUT-PE



TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
2 Average	6.52 MHz	54.85	-9.14
2 Average	5.852 MHz	52.63	-11.36
1 Quasi Peak	6.588 MHz	59.02	-14.97
1 Quasi Peak	5.724 MHz	53.86	-20.13

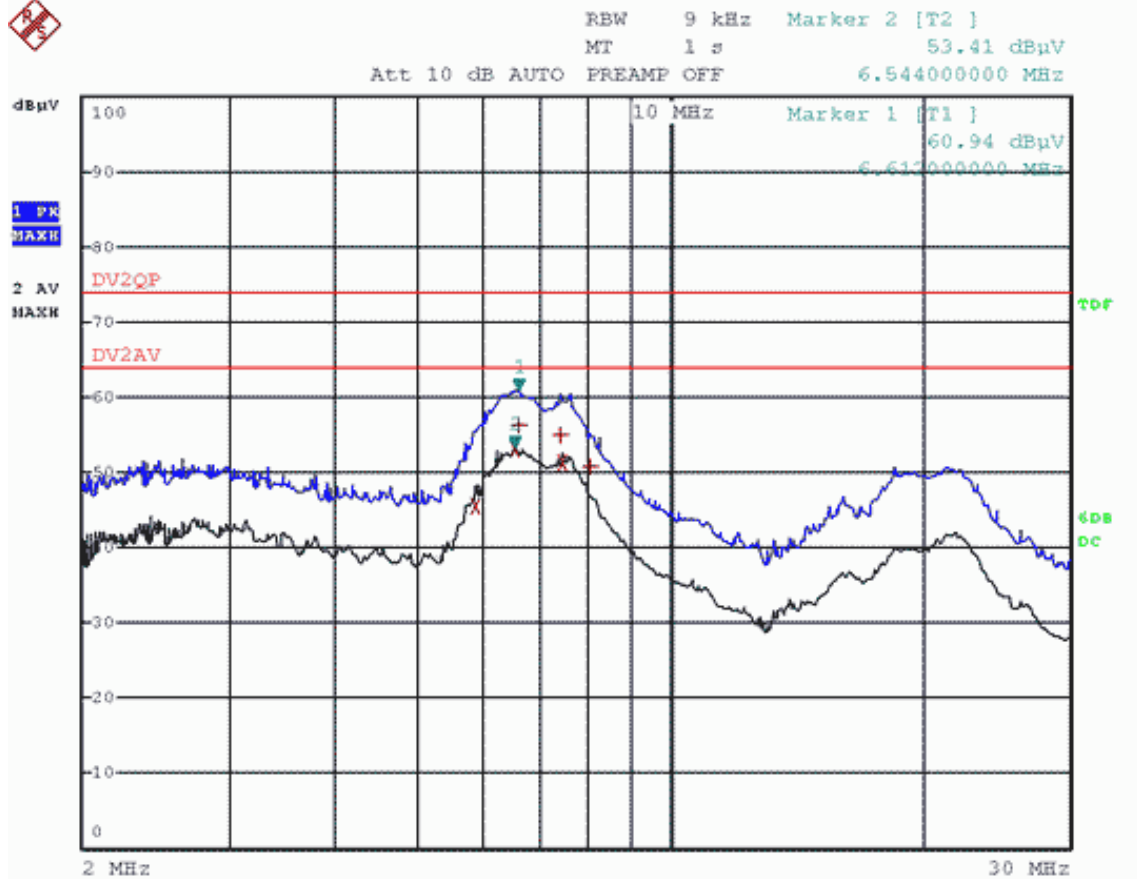
For MSAFBU-09HRDN8-QRD0GW

COOL-OUT-L



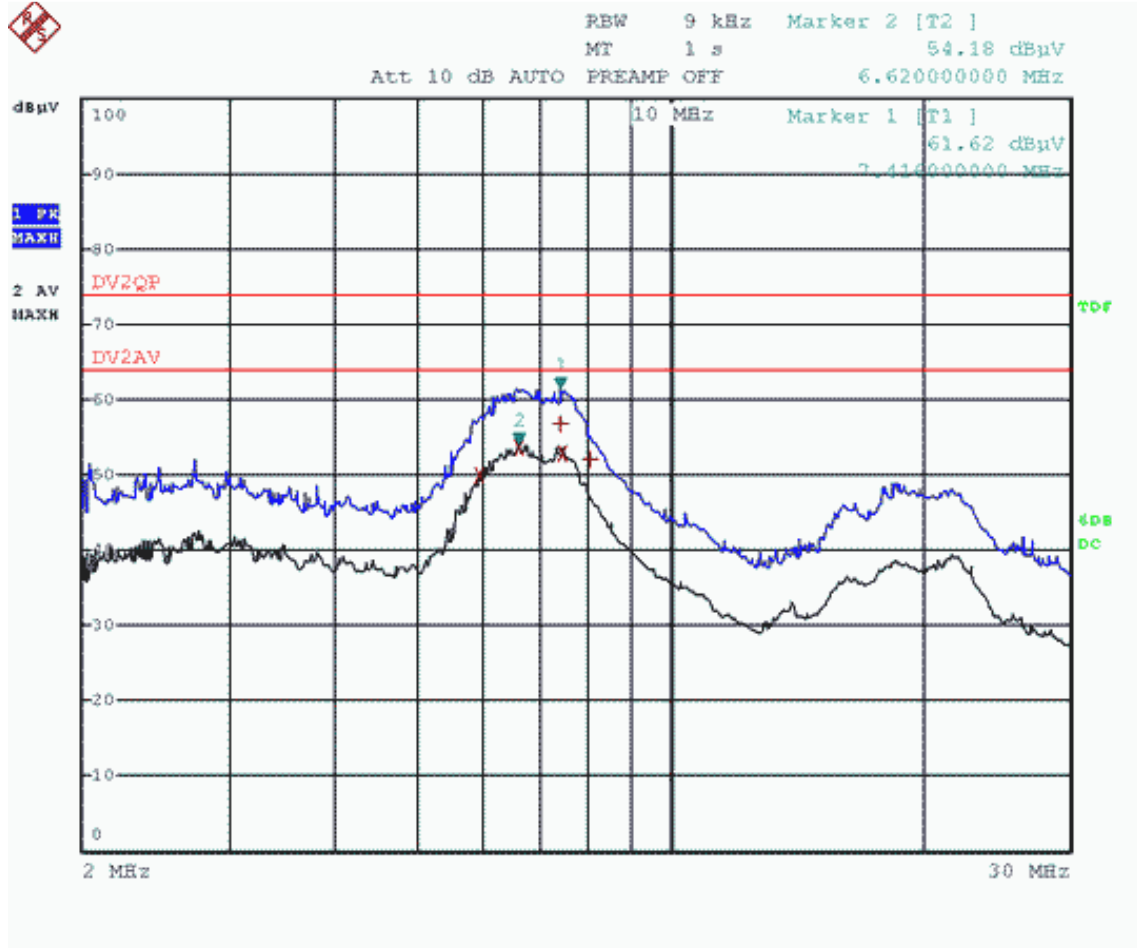
TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
2 Average	6.604 MHz	51.39	-12.60
2 Average	7.624 MHz	50.82	-13.17
2 Average	8.02 MHz	46.93	-17.06
1 Quasi Peak	7.52 MHz	53.56	-20.43
1 Quasi Peak	8.068 MHz	51.29	-22.70
1 Quasi Peak	4.672 MHz	45.62	-28.38

COOL-OUT-N



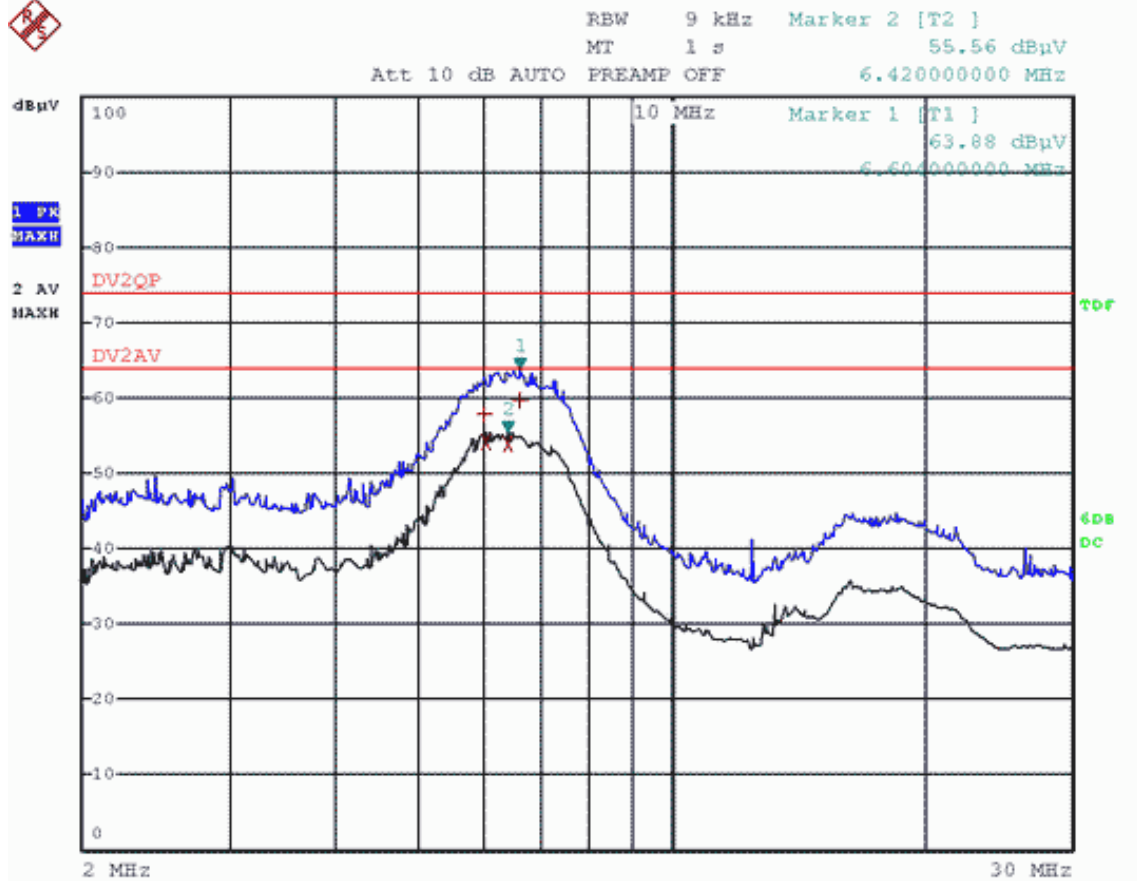
TRACE	FREQUENCY	LEVEL dBμV	DELTA LIMIT dB
2 Average	6.544 MHz	53.22	-10.78
2 Average	7.468 MHz	51.22	-12.77
1 Quasi Peak	6.612 MHz	56.27	-17.72
2 Average	5.876 MHz	45.55	-18.44
1 Quasi Peak	7.408 MHz	55.06	-18.93
1 Quasi Peak	8.024 MHz	50.82	-23.17

COOL-OUT-S



TRACE	FREQUENCY	LEVEL dBμV	DELTA LIMIT dB
2 Average	6.62 MHz	53.57	-10.42
2 Average	7.44 MHz	52.82	-11.18
2 Average	5.952 MHz	50.11	-13.88
1 Quasi Peak	7.416 MHz	56.83	-17.16
1 Quasi Peak	8.036 MHz	52.05	-21.94

COOL-OUT-PE



TRACE	FREQUENCY	LEVEL dBμV	DELTA LIMIT dB
2 Average	6.024 MHz	54.16	-9.83
2 Average	6.42 MHz	53.93	-10.06
1 Quasi Peak	6.604 MHz	59.72	-14.27
1 Quasi Peak	6.004 MHz	57.96	-16.03

6.3 Disturbance Power

Test Requirement: EN 55014-1:2017
 Test Method: CISPR 16-2-2
 Frequency Range: 30MHz to 300MHz
 Limit:
 30MHz- 300MHz 45dB(pw)-55dB(pw) quasi-peak, 35dB(pw)-45dB(pw) average
 Detector: Peak for pre-scan (120kHz resolution bandwidth) 30MHz to 300MHz

6.3.1 E.U.T. Operation

Operating Environment:

Temperature: 25 °C Humidity: 51 % RH Atmospheric Pressure: 1004 mbar

a: Test in cooling mode, keep swinging at high speed, and adjust the EUT temperature at the lowest temperature position.

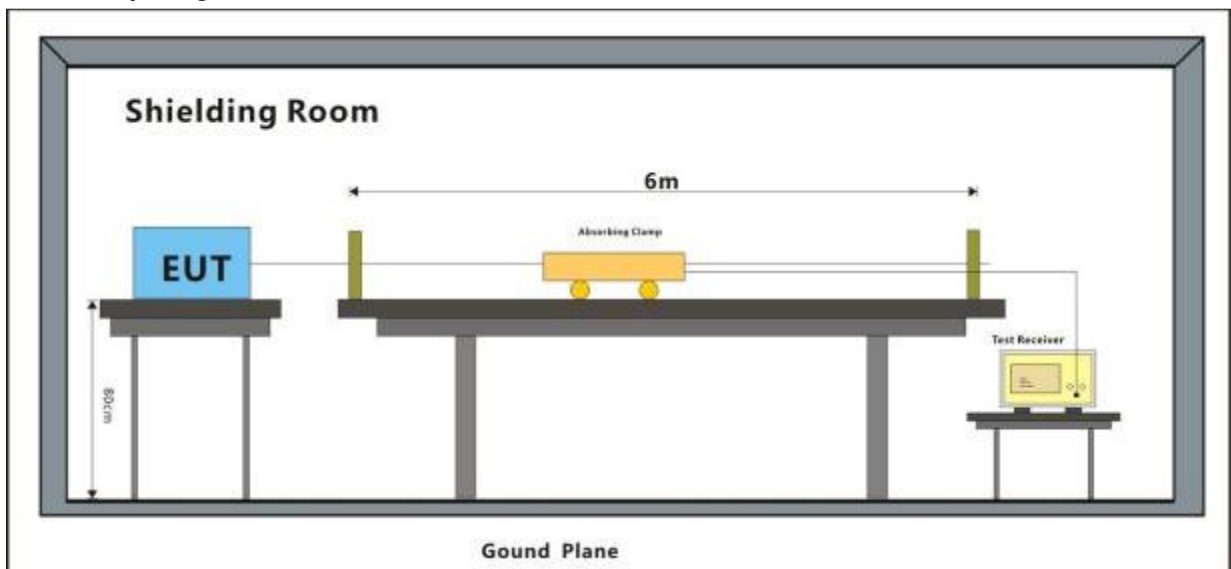
Pretest these modes to find the worst case:
 b: Test in heating mode, keep swinging at high speed, and adjust the EUT temperature at the highest temperature position.

c: Test in dehumidification mode.

d: Test in fan mode, keep swinging at high speed.

The worst case for final test:
 a: Test in cooling mode, keep swinging at high speed, and adjust the EUT temperature at the lowest temperature position.

6.3.2 Test Setup Diagram

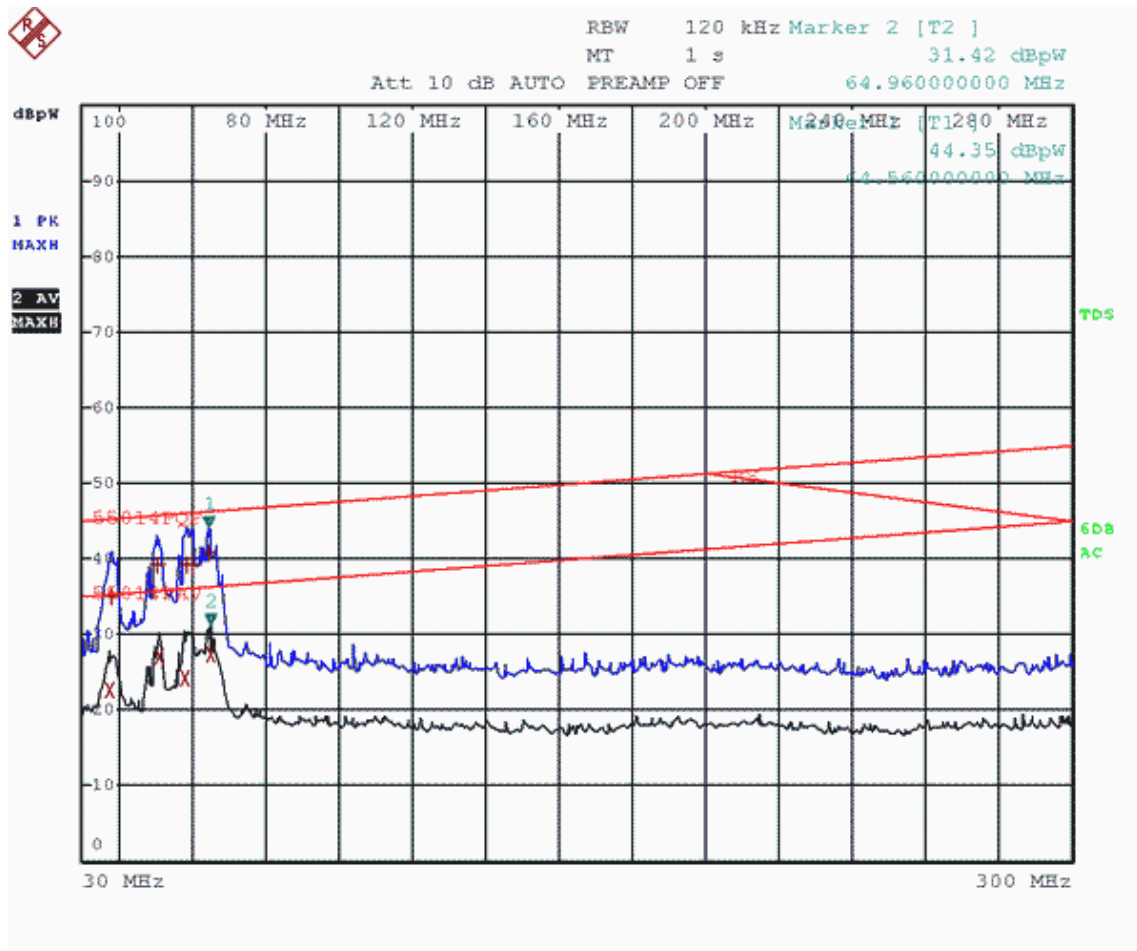


6.3.3 Measurement Data

An initial pre-scan was performed with peak detector. Quasi-Peak or Average measurement were performed at the frequencies with maximized peak emission were detected.

For Collocation 1

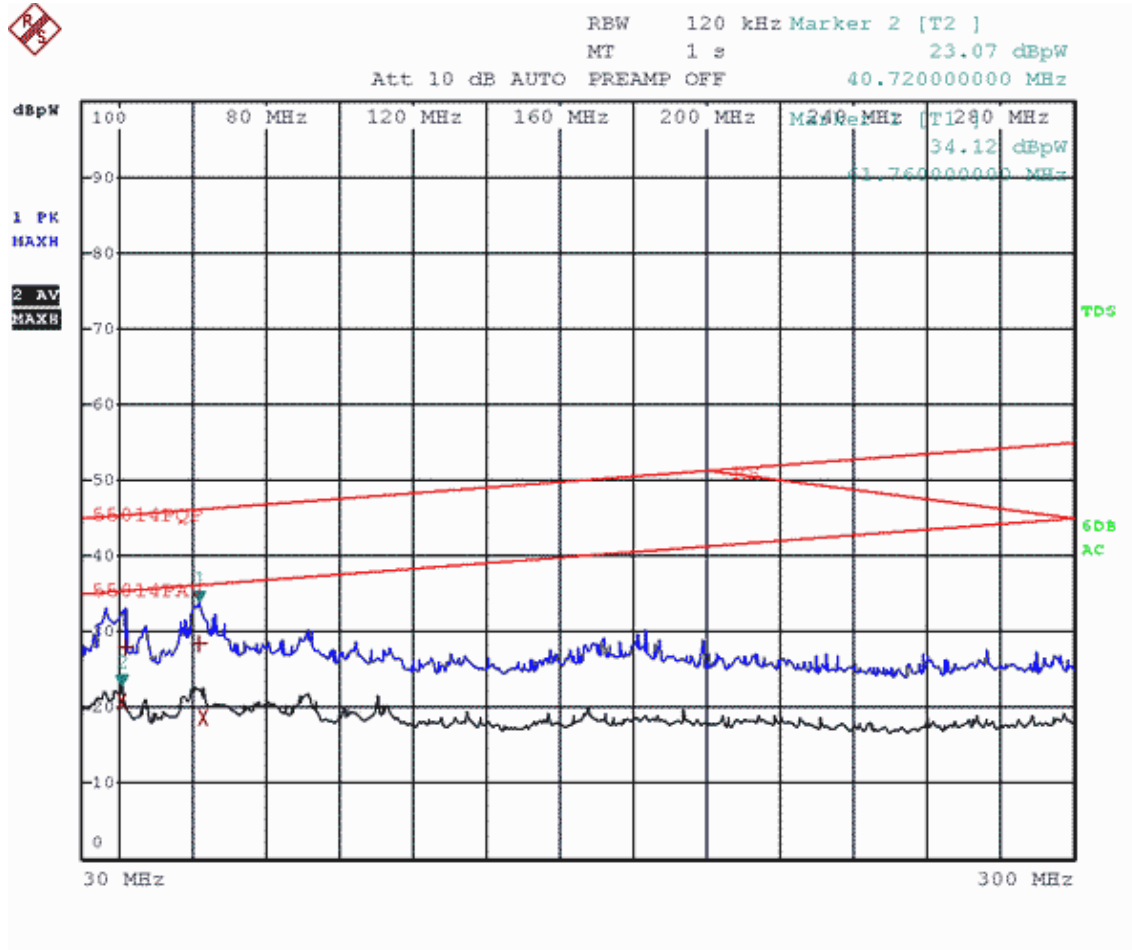
COOL-POWER



TRACE	FREQUENCY	LEVEL dBpW	DELTA LIMIT dB
1 Quasi Peak	64.56 MHz	40.88	-5.40
1 Quasi Peak	50.68 MHz	39.23	-6.52
1 Quasi Peak	58.4 MHz	39.27	-6.77
1 Quasi Peak	60.36 MHz	39.17	-6.95
2 Average	50.76 MHz	27.09	-8.67
2 Average	64.96 MHz	27.45	-8.84
1 Quasi Peak	38 MHz	35.05	-10.23
2 Average	57.92 MHz	24.39	-11.63
2 Average	37.76 MHz	22.67	-12.61

For MSAFCU-18HRFN8-QRD0GW

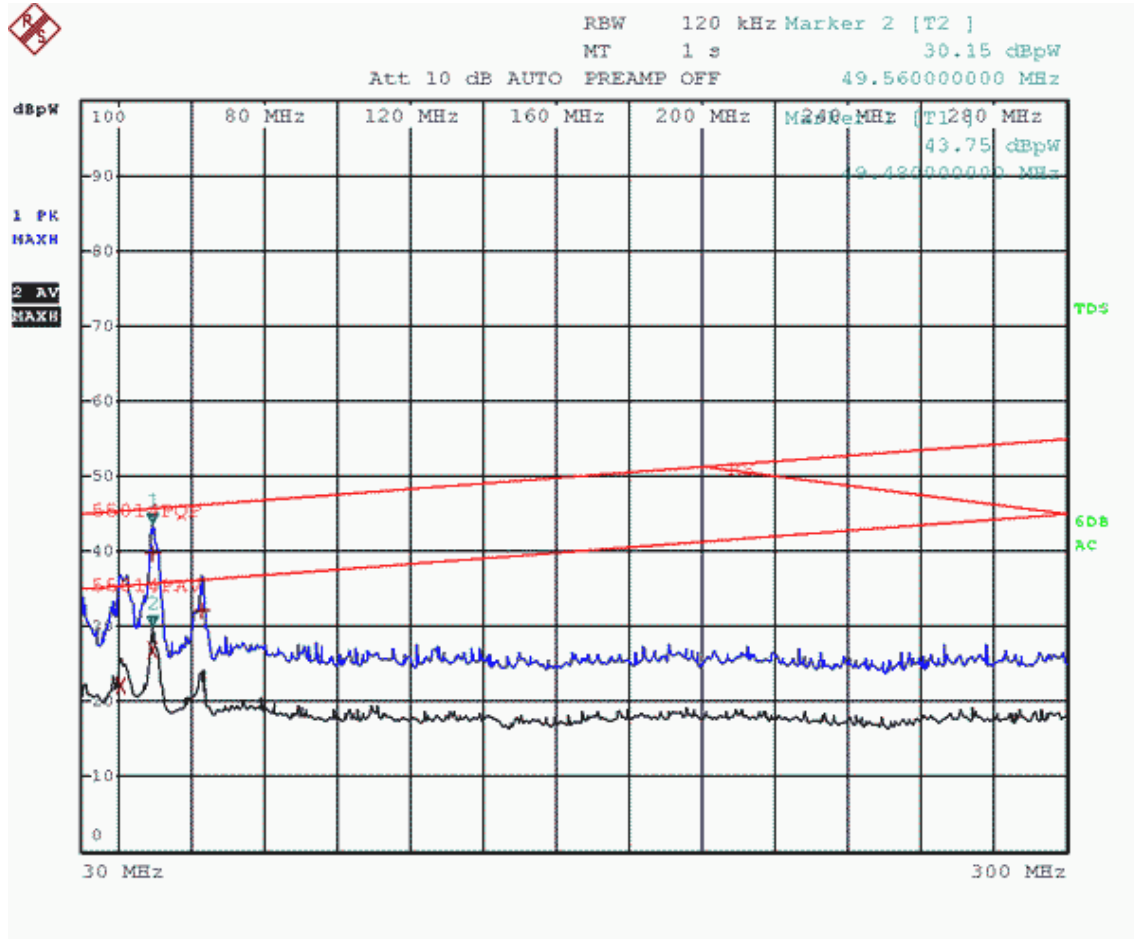
COOL-IN



TRACE	FREQUENCY	LEVEL dBpW	DELTA LIMIT dB
2 Average	40.72 MHz	20.99	-14.40
1 Quasi Peak	41.6 MHz	27.98	-17.44
2 Average	63.16 MHz	18.72	-17.50
1 Quasi Peak	61.76 MHz	28.57	-17.60

For MSAFBU-09HRDN8-QRD0GW

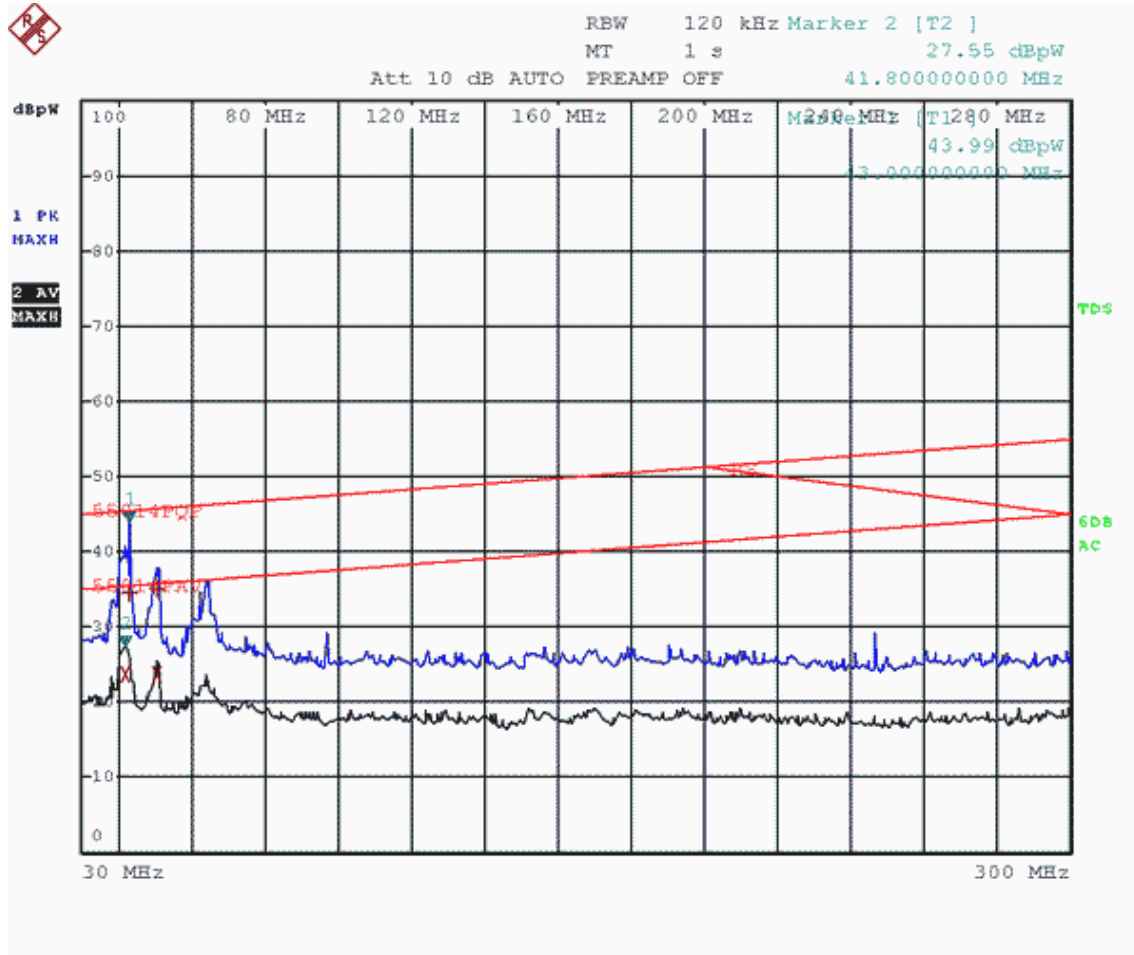
COOL-IN



TRACE	FREQUENCY	LEVEL dBpW	DELTA LIMIT dB
1 Quasi Peak	49.48 MHz	39.81	-5.91
2 Average	49.56 MHz	26.77	-8.94
2 Average	40.68 MHz	22.25	-13.13
1 Quasi Peak	63 MHz	32.16	-14.05

For MSAFBU-12HRDN8-QRD0GW

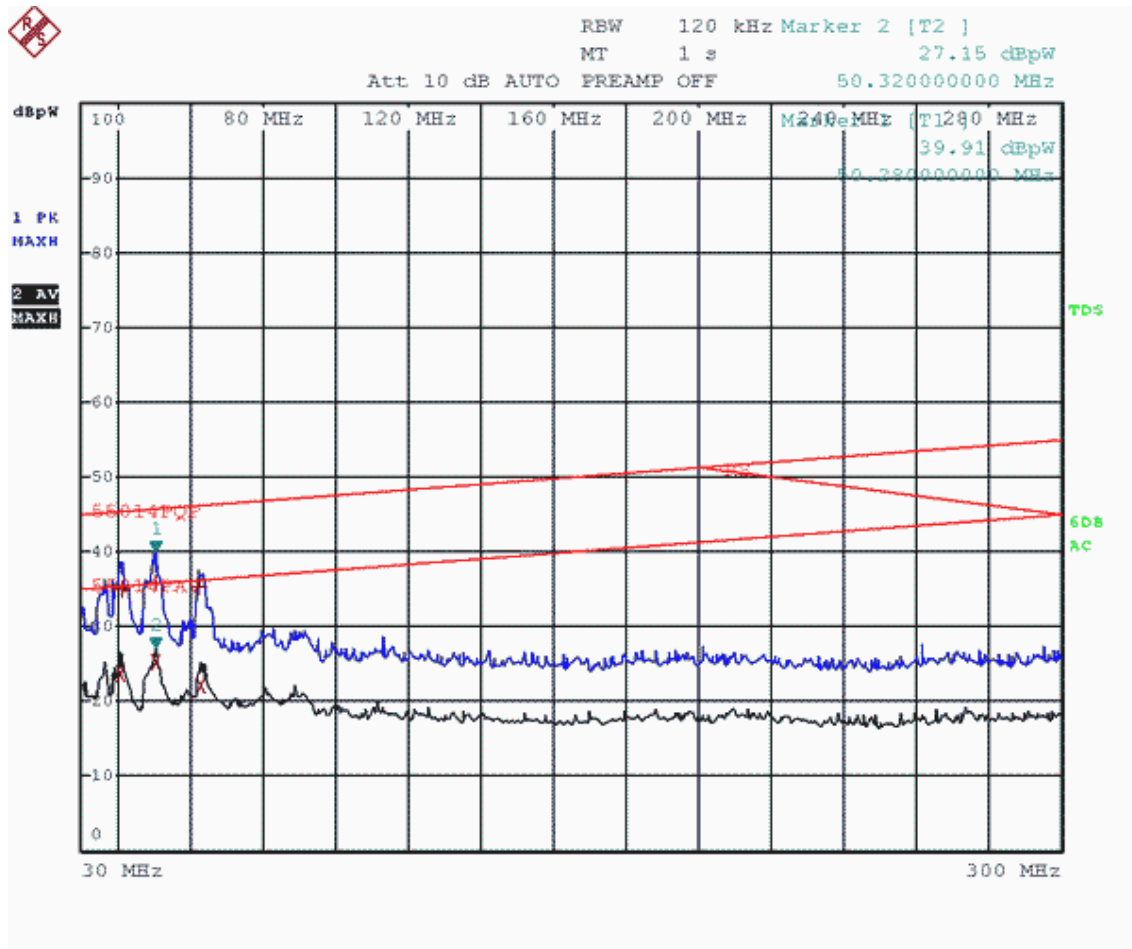
COOL-IN



TRACE	FREQUENCY	LEVEL dBpW	DELTA LIMIT dB
1 Quasi Peak	50.44 MHz	35.02	-10.73
1 Quasi Peak	43 MHz	34.41	-11.06
2 Average	41.8 MHz	23.73	-11.69
2 Average	50.68 MHz	23.65	-12.11

For MSAFCU-18HRFN8-QRD0GW

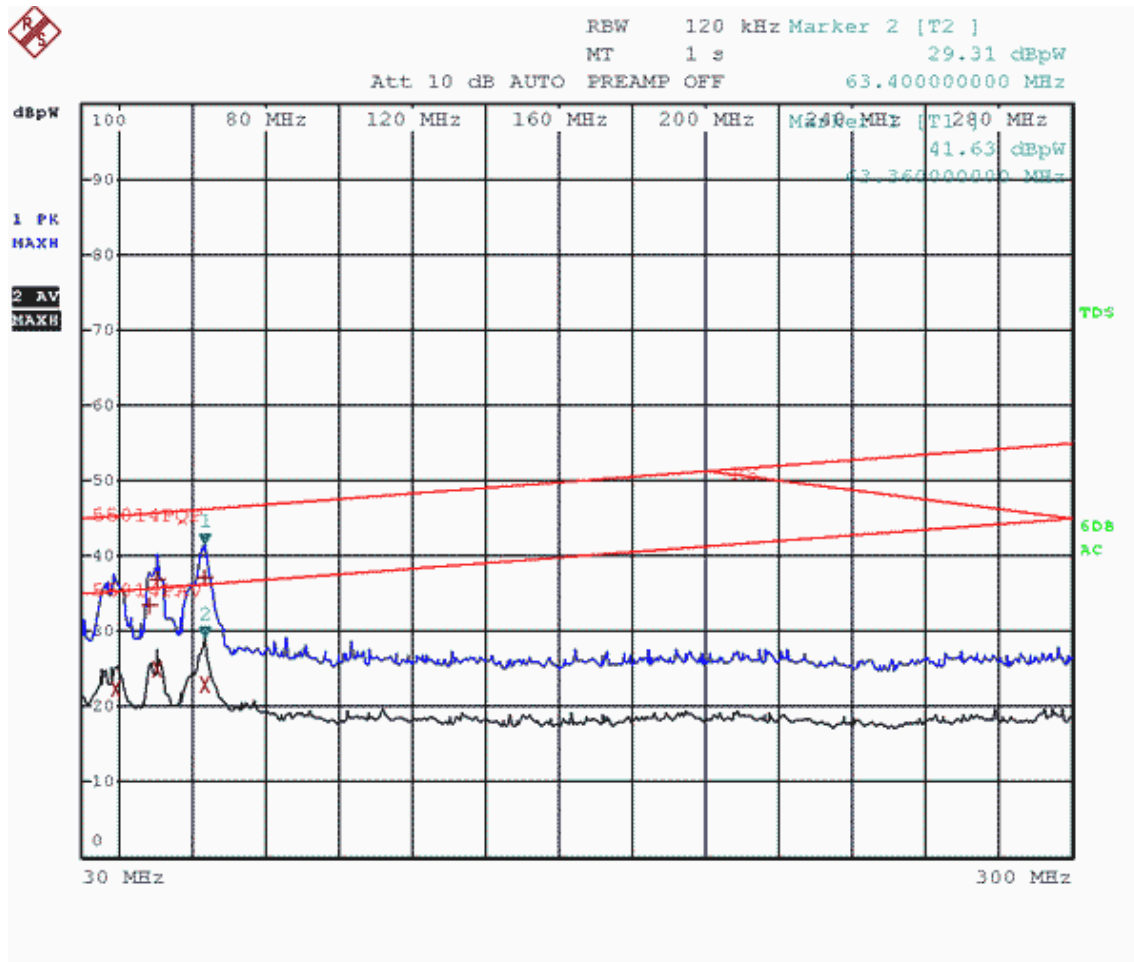
COOL-OUT



TRACE	FREQUENCY	LEVEL dBpW	DELTA LIMIT dB
1 Quasi Peak	50.28 MHz	35.82	-9.92
2 Average	50.32 MHz	25.37	-10.38
1 Quasi Peak	41.2 MHz	35.01	-10.40
1 Quasi Peak	62.6 MHz	35.18	-11.02
2 Average	40.72 MHz	23.63	-11.76
2 Average	62.72 MHz	22.20	-14.00

For MSAFBU-09HRDN8-QRD0GW

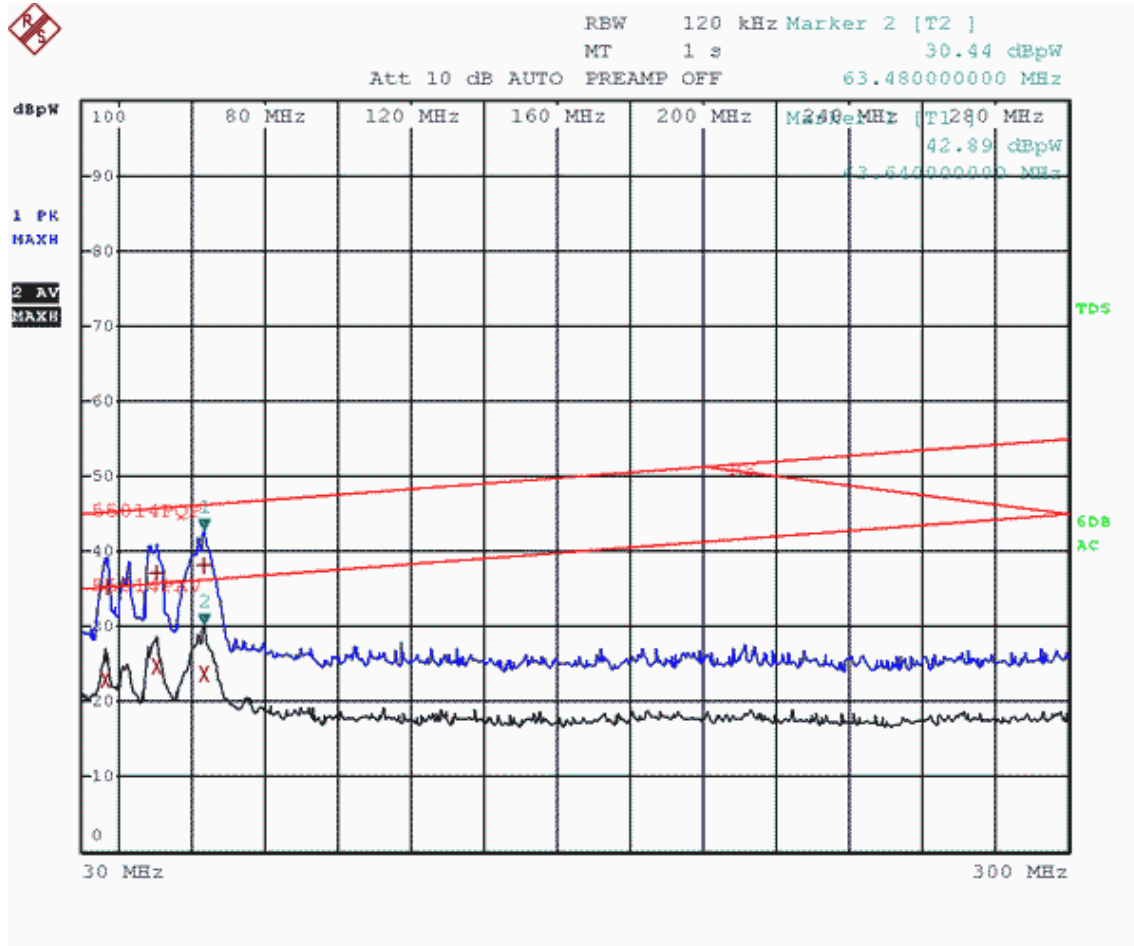
COOL-OUT



	TRACE	FREQUENCY	LEVEL dBpW	DELTA LIMIT dB
1	Quasi Peak	50.4 MHz	36.79	-8.96
1	Quasi Peak	63.36 MHz	37.05	-9.18
2	Average	50.6 MHz	25.07	-10.68
1	Quasi Peak	48.24 MHz	33.45	-12.21
2	Average	39.36 MHz	22.33	-13.01
2	Average	63.4 MHz	23.03	-13.20

For MSAFBU-12HRDN8-QRD0GW

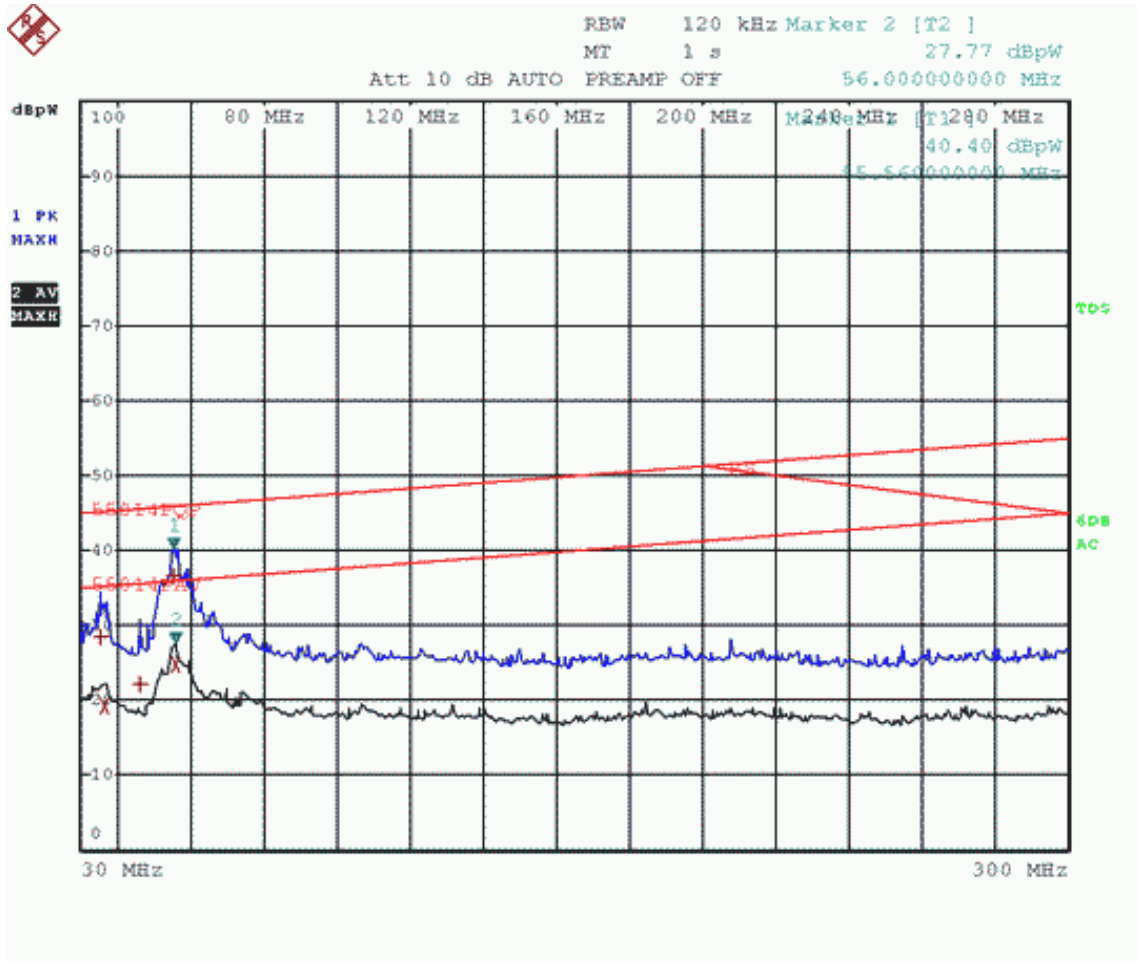
COOL-OUT



TRACE	FREQUENCY	LEVEL dBpW	DELTA LIMIT dB
1 Quasi Peak	63.64 MHz	38.25	-7.98
1 Quasi Peak	50.48 MHz	37.13	-8.62
1 Quasi Peak	36.96 MHz	35.23	-10.02
2 Average	50.48 MHz	24.83	-10.92
2 Average	36.64 MHz	23.02	-12.22
2 Average	63.48 MHz	23.73	-12.50

For Collocation 2

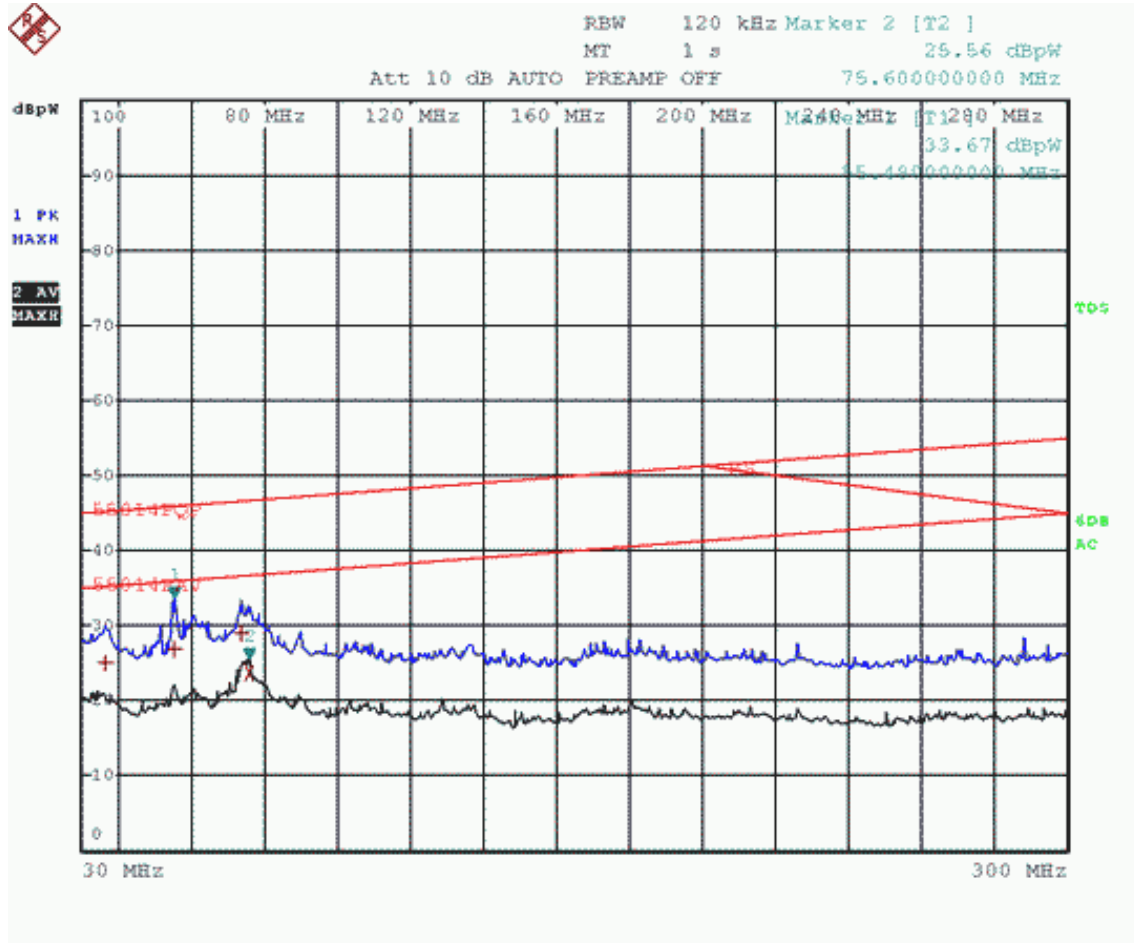
COOL-POWER



TRACE	FREQUENCY	LEVEL dBpW	DELTA LIMIT dB
1 Quasi Peak	55.56 MHz	36.59	-9.35
2 Average	56 MHz	24.72	-11.23
2 Average	36.68 MHz	19.33	-15.91
1 Quasi Peak	35.6 MHz	28.45	-16.74
1 Quasi Peak	46.08 MHz	22.26	-23.32

For MSAFDU-24HRFN8-QRD0GW

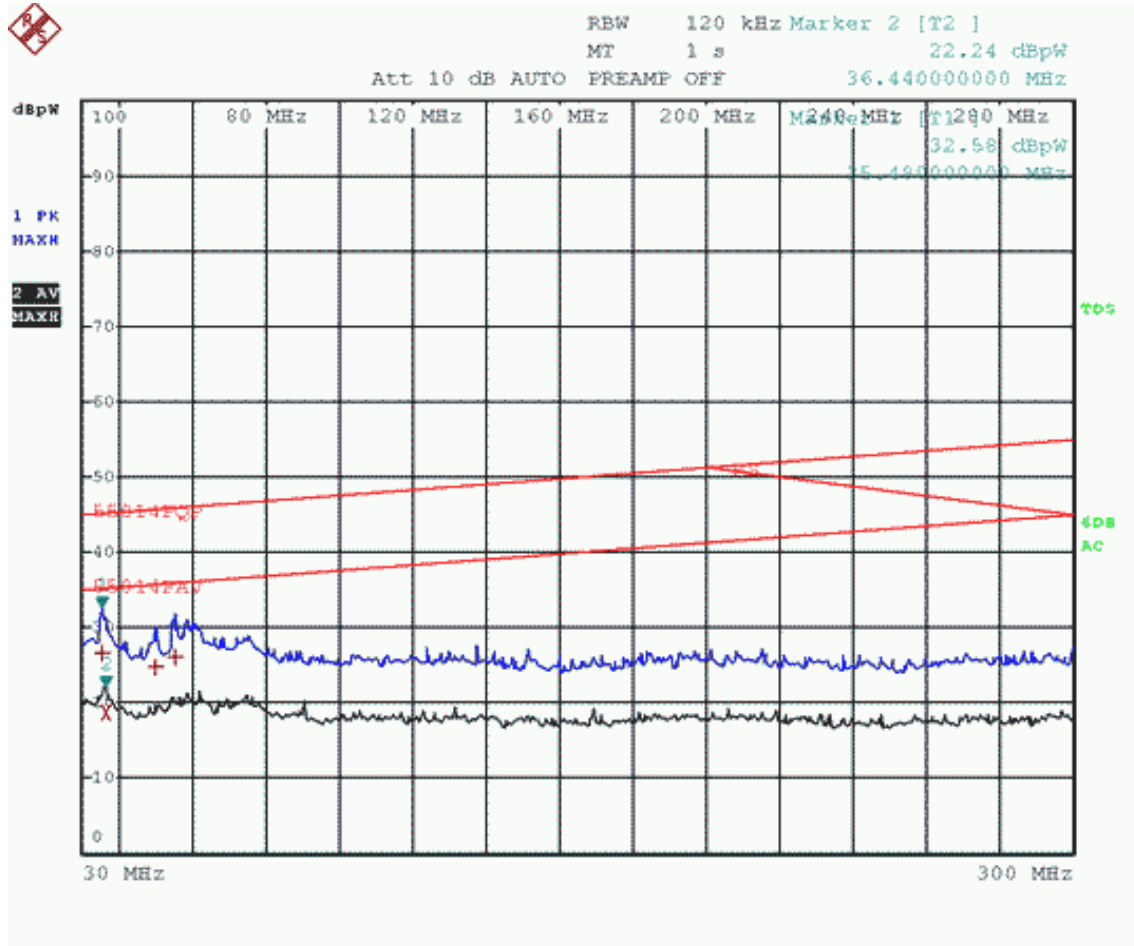
COOL-IN



TRACE	FREQUENCY	LEVEL dBpW	DELTA LIMIT dB
2 Average	75.6 MHz	23.64	-13.04
1 Quasi Peak	73.96 MHz	28.98	-17.63
1 Quasi Peak	55.48 MHz	26.83	-19.10
1 Quasi Peak	36.52 MHz	25.06	-20.17

For MSAFBU-09HRDN8-QRD0GW

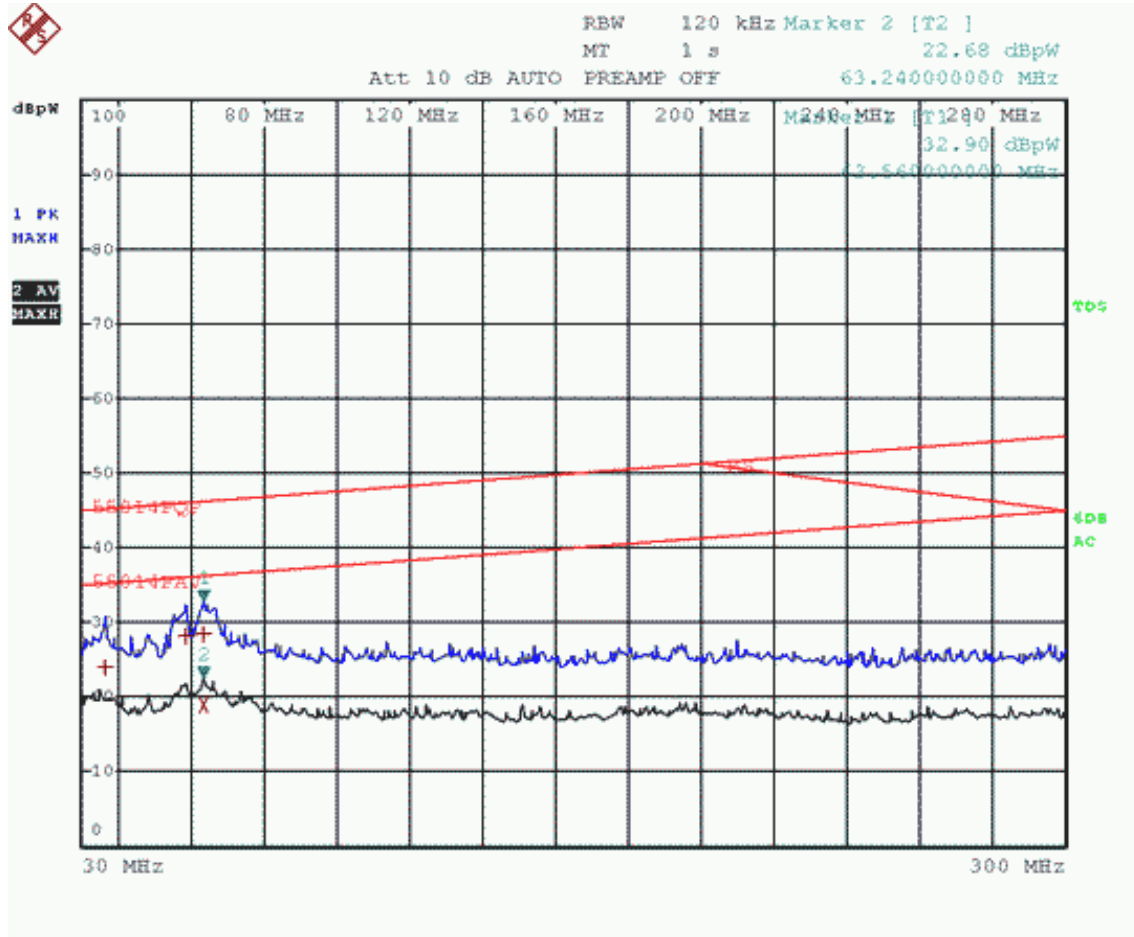
COOL-IN



TRACE	FREQUENCY	LEVEL dBpW	DELTA LIMIT dB
2 Average	36.44 MHz	18.73	-16.50
1 Quasi Peak	35.48 MHz	26.52	-18.68
1 Quasi Peak	55.48 MHz	26.17	-19.76
1 Quasi Peak	50.04 MHz	24.72	-21.01

For MSAFBU-12HRDN8-QRD0GW

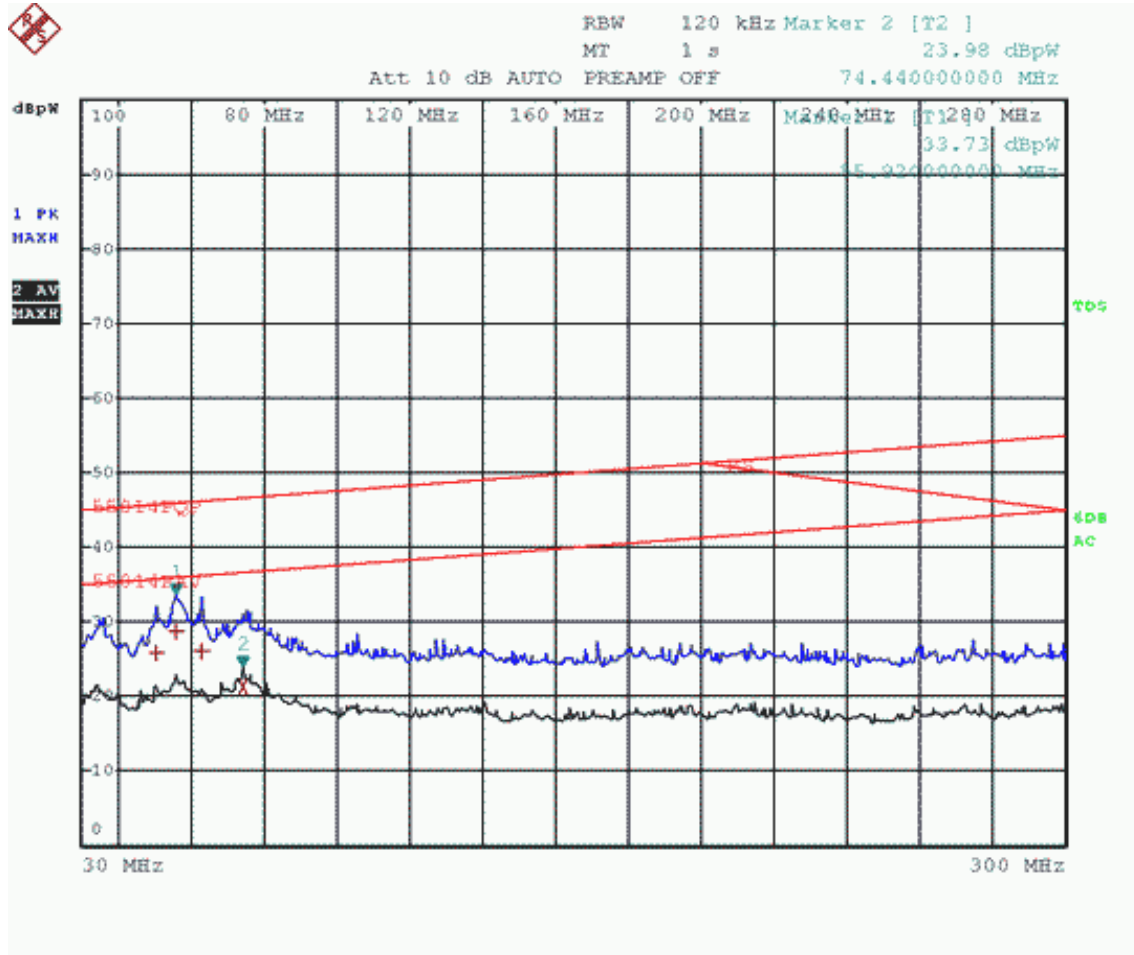
COOL-IN



TRACE	FREQUENCY	LEVEL dBpW	DELTA LIMIT dB
2 Average	63.24 MHz	19.13	-17.09
1 Quasi Peak	63.56 MHz	28.45	-17.78
1 Quasi Peak	58.72 MHz	28.17	-17.89
1 Quasi Peak	36.32 MHz	24.02	-21.20

For MSAFDU-24HRFN8-QRD0GW

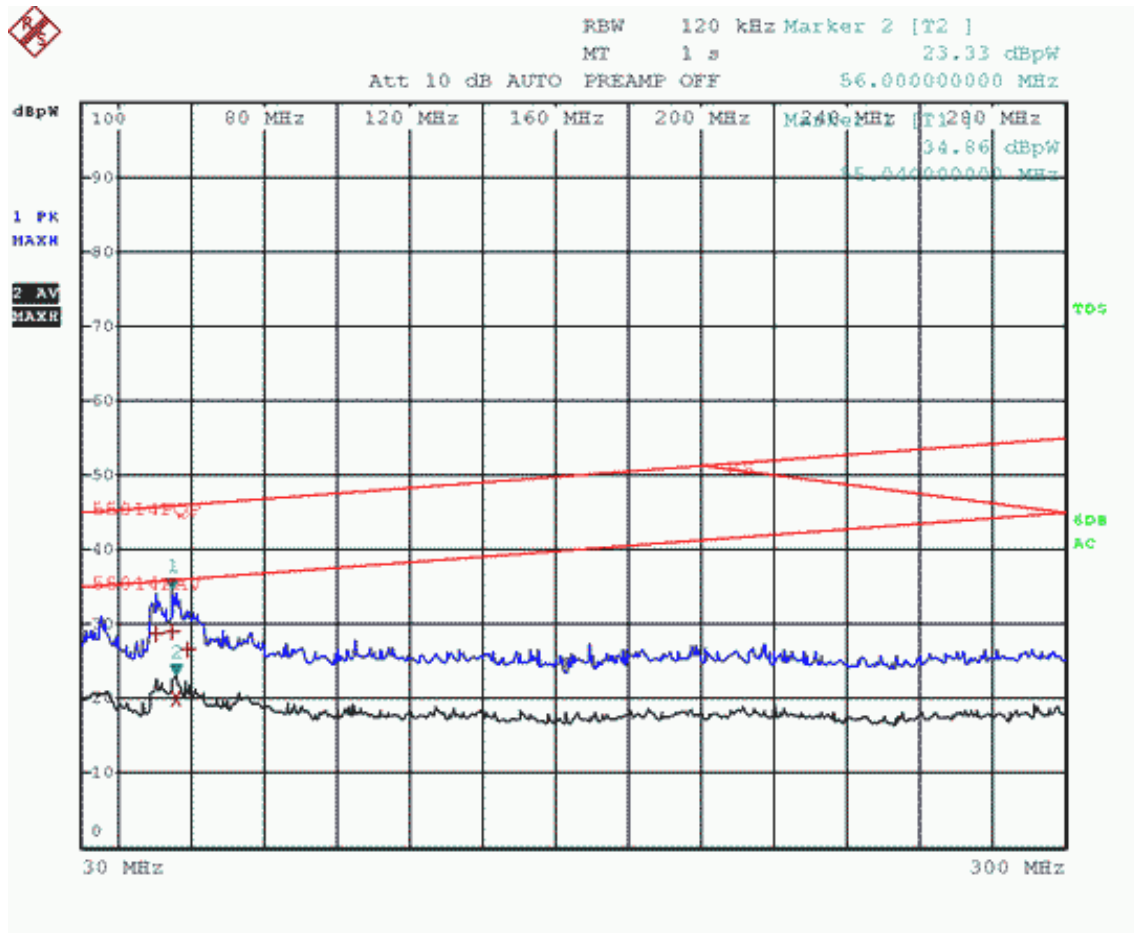
COOL-OUT



TRACE	FREQUENCY	LEVEL dBpW	DELTA LIMIT dB
2 Average	74.44 MHz	21.29	-15.34
1 Quasi Peak	55.92 MHz	28.70	-17.25
1 Quasi Peak	50.6 MHz	25.98	-19.78
1 Quasi Peak	62.72 MHz	26.04	-20.16

For MSAFBU-09HRDN8-QRD0GW

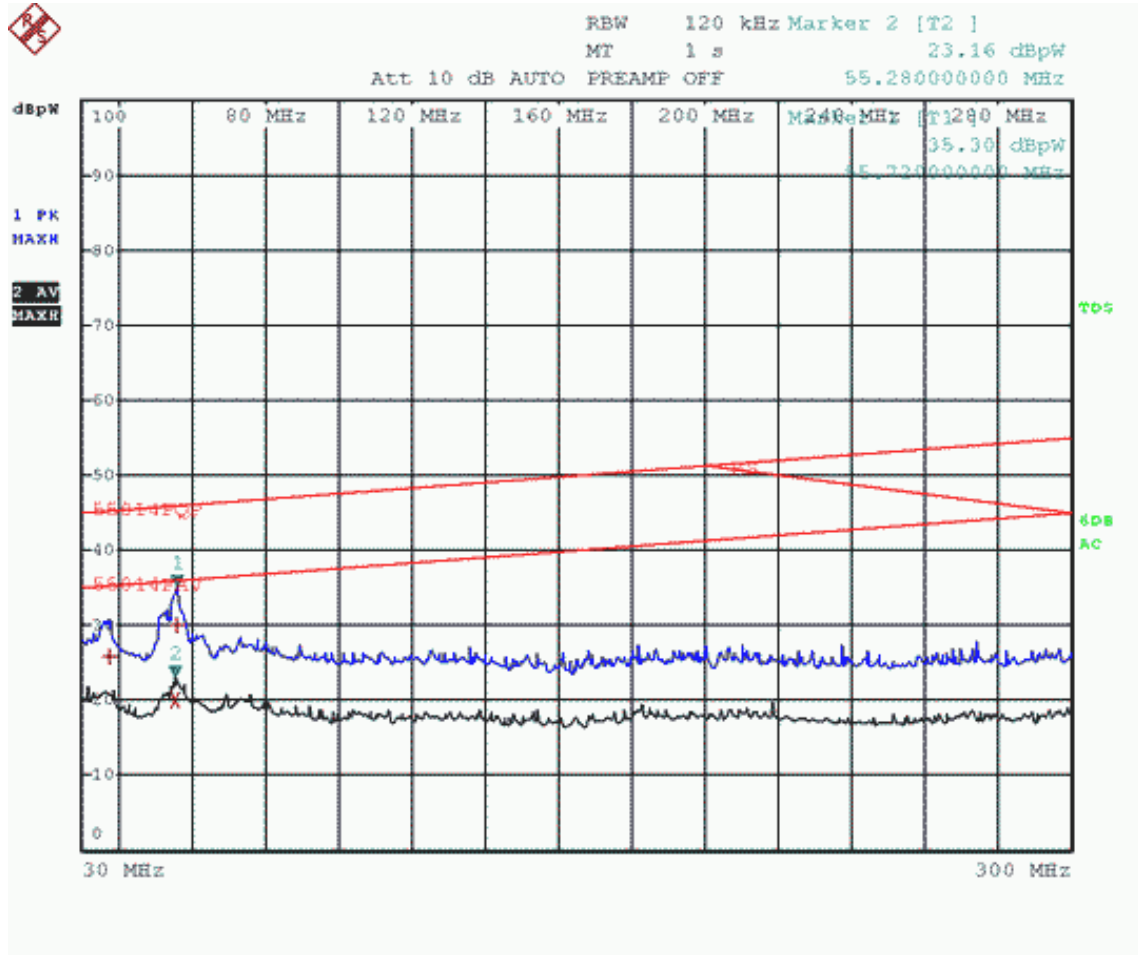
COOL-OUT



TRACE	FREQUENCY	LEVEL dBpW	DELTA LIMIT dB
2 Average	56 MHz	20.00	-15.95
1 Quasi Peak	55.04 MHz	29.03	-16.88
1 Quasi Peak	50.68 MHz	28.68	-17.08
1 Quasi Peak	59 MHz	26.62	-19.44

For MSAFBU-12HRDN8-QRD0GW

COOL-OUT



TRACE	FREQUENCY	LEVEL dBpW	DELTA LIMIT dB
1 Quasi Peak	55.72 MHz	30.16	-15.79
2 Average	55.28 MHz	20.06	-15.86
1 Quasi Peak	37.36 MHz	25.93	-19.33

6.4 Discontinuous Disturbance (150kHz-30MHz)

Test Requirement: EN 55014-1:2017

Test Method: EN 55014-1:2017

Frequency Range: 150kHz to 30MHz

Limit:

Provision	Click Rate (N)		
1	All clicks < 20 ms	90 % click < 10 ms	$N \leq 5$
2	$N \leq 0,2$	$L_q^b = L^a + 44$	Clicks ^c $\leq 25\%$ exceed L_q^b
3	$30 \geq N > 0,2$	$L_q^b = L^a + 20 \lg(30/N)$	Clicks ^c $\leq 25\%$ exceed L_q^b

^a The limits L of Conducted Emissions apply also to discontinuous disturbances from all equipment which produce:
 1) disturbances other than clicks, or
 2) clicks with a click rate N equal to or greater than 30

^b The relevant limit L_q for continuous disturbance, as given in 4.1.1 for the measurement with the quasi-peak detector, increased by a certain value determined from the click rate N (see also 4.2.2.2) The click limit applies to the disturbance assessed according to the upper quartile method

^c a quarter of the number of the clicks registered during the observation time T is allowed to exceed the click limit L_q

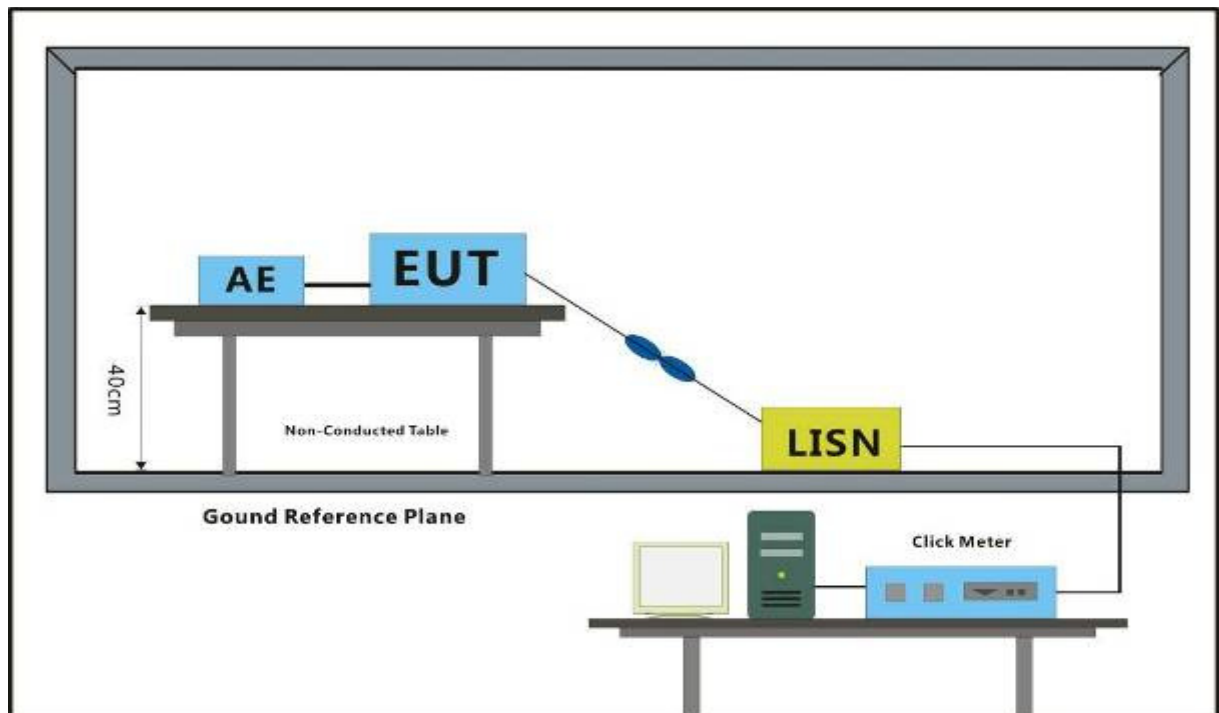
6.4.1 E.U.T. Operation

Operating Environment:

Temperature: 25 °C Humidity: 50 % RH Atmospheric Pressure: 1005 mbar

Test Mode: c: Test in dehumidification mode.

6.4.2 Test Setup Diagram



6.4.3 Measurement Data

For Collocation 1

	150 kHz	500 kHz	1.4 MHz	30 MHz
First Run				
Short	0	0	0	0
Long	0	0	0	0
Long (10< t ≤20 ms)	0	0	0	0
Tot. Clicks Corr	0	0	0	0
Events	0	0	0	0
Time(s)	0.00	0.00	0.00	0.00
Sw.Op.	0	0	0	0
4.2.3.4 events	0	0	0	0
Limit dBuV	66	56	56	60
N	0.00	0.00	0.00	0.00
	PASS	PASS	PASS	PASS

For Collocation 2

	150 kHz	500 kHz	1.4 MHz	30 MHz
First Run				
Short	0	0	0	0
Long	0	0	0	0
Long (10< t ≤20 ms)	0	0	0	0
Tot. Clicks Corr	0	0	0	0
Events	0	0	0	0
Time(s)	0.00	0.00	0.00	0.00
Sw.Op.	0	0	0	0
4.2.3.4 events	0	0	0	0
Limit dBuV	66	56	56	60
N	0.00	0.00	0.00	0.00
	PASS	PASS	PASS	PASS

6.5 Harmonic Current Emission

Test Requirement: EN 61000-3-12:2011
 Test Method: EN 61000-3-12:2011
 Frequency Range: 100Hz to 2kHz

6.5.1 E.U.T. Operation

Operating Environment:

Temperature: 25 °C Humidity: 51 % RH Atmospheric Pressure: 1005 mbar

a: Test in cooling mode, keep swinging at high speed, and adjust the EUT temperature at the lowest temperature position.

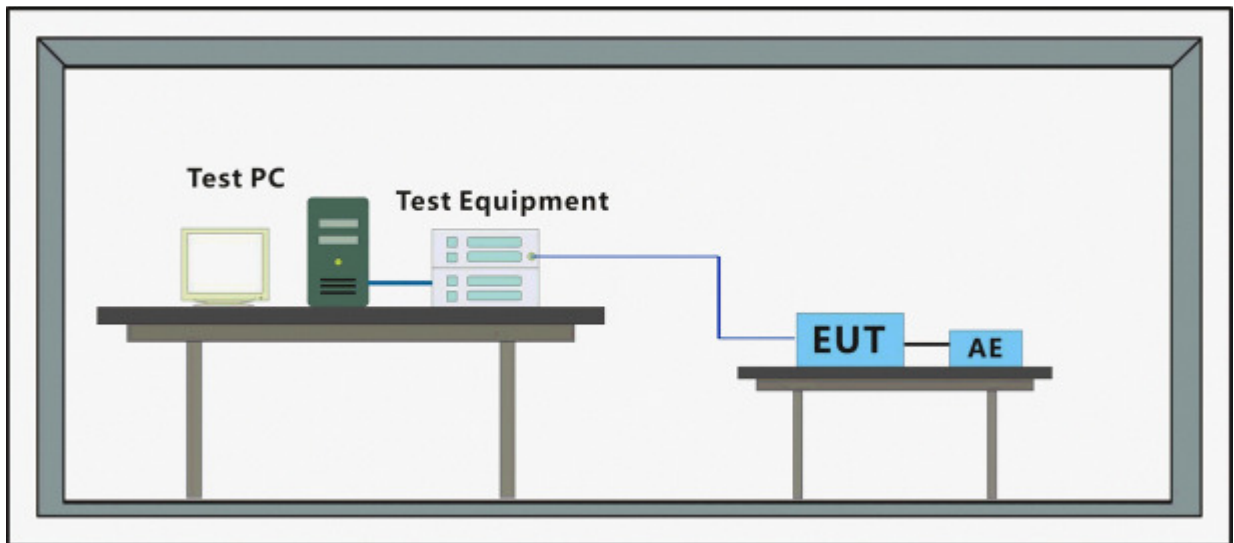
b: Test in heating mode, keep swinging at high speed, and adjust the EUT temperature at the highest temperature position.

c: Test in dehumidification mode.

d: Test in fan mode, keep swinging at high speed.

The worst case for final test: a: Test in cooling mode, keep swinging at high speed, and adjust the EUT temperature at the lowest temperature position.

6.5.2 Test Setup



6.5.3 Measurement Data

For Collocation 1

Harmonic current results - DS: 65

Hn	I _{eff} [A]	I _{eff} [%]	Limit [%]	Result
1	17.272	100.192		
2	15.846E-3	0.092	8.00	PASS
3	405.668E-3	2.353	21.60	PASS
4	4.562E-3	0.026	4.00	PASS
5	109.766E-3	0.637	10.70	PASS
6	1.609E-3	0.009	2.67	PASS
7	143.253E-3	0.831	7.20	PASS
8	2.211E-3	0.013	2.00	PASS
9	56.012E-3	0.325	3.80	PASS
10	1.795E-3	0.010	1.60	PASS
11	90.018E-3	0.522	3.10	PASS
12	1.435E-3	0.008	1.33	PASS
13	11.703E-3	0.068	2.00	PASS
14	2.537E-3	0.015		PASS
15	66.181E-3	0.384		PASS
16	2.156E-3	0.013		PASS
17	20.045E-3	0.116		PASS
18	1.729E-3	0.010		PASS
19	44.844E-3	0.260		PASS
20	1.535E-3	0.009		PASS
21	31.044E-3	0.180		PASS
22	1.256E-3	0.007		PASS
23	24.524E-3	0.142		PASS
24	1.490E-3	0.009		PASS
25	35.018E-3	0.203		PASS
26	1.343E-3	0.008		PASS
27	28.698E-3	0.166		PASS
28	1.206E-3	0.007		PASS
29	38.968E-3	0.226		PASS
30	1.587E-3	0.009		PASS
31	35.693E-3	0.207		PASS
32	2.463E-3	0.014		PASS
33	38.204E-3	0.222		PASS
34	1.679E-3	0.010		PASS
35	36.456E-3	0.211		PASS
36	1.608E-3	0.009		PASS
37	33.625E-3	0.195		PASS
38	1.371E-3	0.008		PASS
39	33.129E-3	0.192		PASS
40	1.527E-3	0.009		PASS

Power and THD results - DS: 65

True power P:	3.977kW	Apparent power S:	3.987kVA
Reactive power Q:	276var	Power factor:	0.998
THD (U):	0.001	THD (I):	0.028
Crest Factor (U):	1.414	Crest Factor (I):	1.479

For Collocation 2

Harmonic current results - DS: 95

Hn	I _{eff} [A]	I _{eff} [%]	Limit [%]	Result
1	18.062	98.629		
2	17.170E-3	0.094	8.00	PASS
3	709.825E-3	3.876	21.60	PASS
4	4.534E-3	0.025	4.00	PASS
5	50.070E-3	0.273	10.70	PASS
6	2.352E-3	0.013	2.67	PASS
7	276.771E-3	1.511	7.20	PASS
8	2.994E-3	0.016	2.00	PASS
9	81.461E-3	0.445	3.80	PASS
10	2.292E-3	0.013	1.60	PASS
11	153.847E-3	0.840	3.10	PASS
12	1.791E-3	0.010	1.33	PASS
13	55.725E-3	0.304	2.00	PASS
14	2.193E-3	0.012		PASS
15	77.833E-3	0.425		PASS
16	2.189E-3	0.012		PASS
17	46.666E-3	0.255		PASS
18	2.046E-3	0.011		PASS
19	36.314E-3	0.198		PASS
20	1.799E-3	0.010		PASS
21	36.937E-3	0.202		PASS
22	1.496E-3	0.008		PASS
23	24.840E-3	0.136		PASS
24	1.819E-3	0.010		PASS
25	24.046E-3	0.131		PASS
26	1.693E-3	0.009		PASS
27	34.774E-3	0.190		PASS
28	1.531E-3	0.008		PASS
29	16.142E-3	0.088		PASS
30	1.638E-3	0.009		PASS
31	34.462E-3	0.188		PASS
32	2.266E-3	0.012		PASS
33	18.782E-3	0.103		PASS
34	1.837E-3	0.010		PASS
35	23.248E-3	0.127		PASS
36	1.408E-3	0.008		PASS
37	19.303E-3	0.105		PASS
38	1.621E-3	0.009		PASS
39	13.884E-3	0.076		PASS
40	1.510E-3	0.008		PASS

Power and THD results - DS: 95

True power P:	4.165kW	Apparent power S:	4.176kVA
Reactive power Q:	299.8var	Power factor:	0.997
THD (U):	0.001	THD (I):	0.044
Crest Factor (U):	1.414	Crest Factor (I):	1.51

6.6 Voltage Fluctuations and Flicker

Test Requirement: EN 61000-3-11:2000

Test Method: EN 61000-3-11:2000

6.6.1 E.U.T. Operation

Operating Environment:

Temperature: 25 °C Humidity: 50 % RH Atmospheric Pressure: 1005 mbar

Pretest these modes to find the worst case:

a: Test in cooling mode, keep swinging at high speed, and adjust the EUT temperature at the lowest temperature position.

b: Test in heating mode, keep swinging at high speed, and adjust the EUT temperature at the highest temperature position.

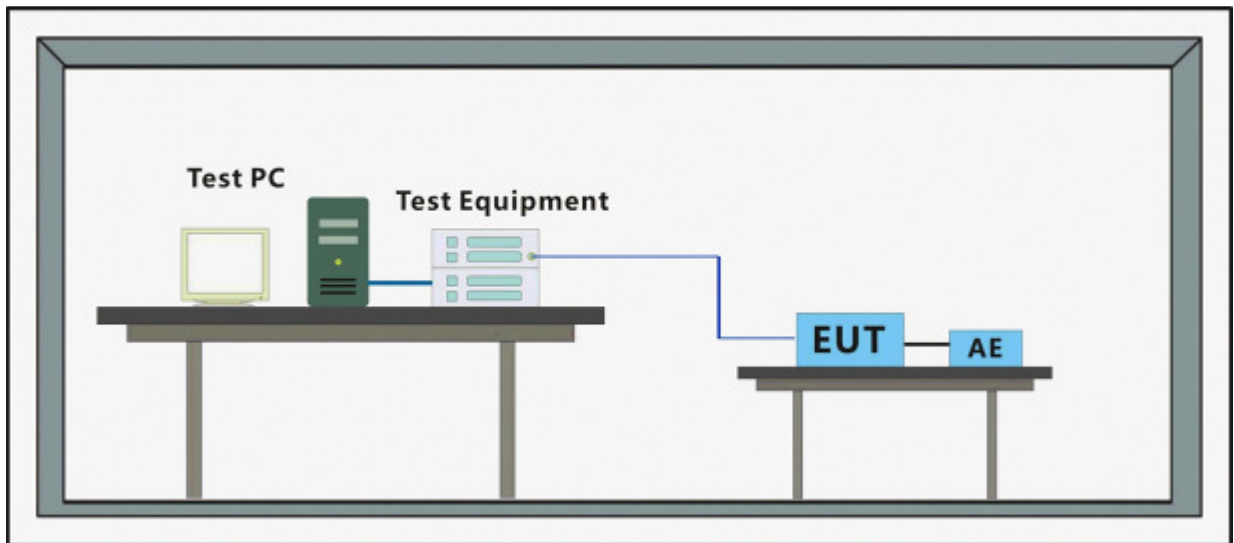
c: Test in dehumidification mode.

d: Test in fan mode, keep swinging at high speed.

The worst case for final test:

a: Test in cooling mode, keep swinging at high speed, and adjust the EUT temperature at the lowest temperature position.

6.6.2 Test Setup Diagram



6.6.3 Measurement Data

For Collocation 1

Report title:	Collocation 1
Standard used:	EN 61000-3-3 Ed.3 Flicker
Short time (Pst):	10 min
Observation time:	10 min (1 Flicker measurement)
Flickermeter:	230V / 50Hz according IEC 61000-4-15 Ed.2
Flicker Impedance:	Zref (IEC 60725)

Test Result	PASS
-------------	------

Maximum Flicker results

	EUT values	Limit	Result
Pst	0.028	1.00	PASS
Plt	0.028	0.65	PASS
dc [%]	0.047	3.30	PASS
dmax [%]	0.083	4.00	PASS
Tmax [s]	0.000	0.50	PASS

For Collocation 2

Report title:	Collocation 2
Standard used:	EN 61000-3-11 Ed.1 Flicker
Short time (Pst):	10 min
Observation time:	10 min (1 Flicker measurement)
Flickermeter:	230V / 50Hz according IEC 61000-4-15 Ed.2
Flicker Impedance:	Zref (IEC 60725)

Test Result	PASS
-------------	------

Maximum Flicker results

	EUT values	Limit	Result
Pst	0.276	1.00	PASS
Plt	0.276	0.65	PASS
dc [%]	1.583	3.30	PASS
dmax [%]	1.714	6.00	PASS
Tmax [s]	0.000	0.50	PASS

7 Immunity Test Results

7.1 Performance Criteria Description in EN 55014-2:2015

- Criterion A** The apparatus shall continue to operate as intended during the test. No degradation of performance or loss of function is allowed below a performance level (or permissible loss of performance) specified by the manufacturer, when the apparatus is used as intended. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and from what the user may reasonably expect from the apparatus if used as intended.
- Criterion B** The apparatus shall continue to operate as intended after the test. No degradation of performance or loss of function is allowed below a performance level (or permissible loss of performance) specified by the manufacturer, when the apparatus is used as intended. During the test, degradation of performance is allowed, however. No change of actual operating state or stored data is allowed. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be derived from the product description and documentation and from what the user may reasonably expect from the apparatus if used as intended.
- Criterion C** Temporary loss of function is allowed, provided the function is self recoverable or can be restored by the operation of the controls, or by any operation specified in the instructions for use.

7.2 Electrostatic Discharge

Test Requirement:	EN 55014-2:2015
Test Method:	EN 61000-4-2:2009
Performance Criterion:	B
Discharge Impedance:	330Ω/150pF
Number of Discharge:	Minimum 10 times at each test point
Discharge Mode:	Single Discharge
Discharge Period:	1 second minimum

7.2.1 E.U.T. Operation

Operating Environment:

Temperature: 25 °C Humidity: 50 % RH Atmospheric Pressure: 1005 mbar

a: Test in cooling mode, keep swinging at high speed, and adjust the EUT temperature at the lowest temperature position.

b: Test in heating mode, keep swinging at high speed, and adjust the EUT temperature at the highest temperature position.

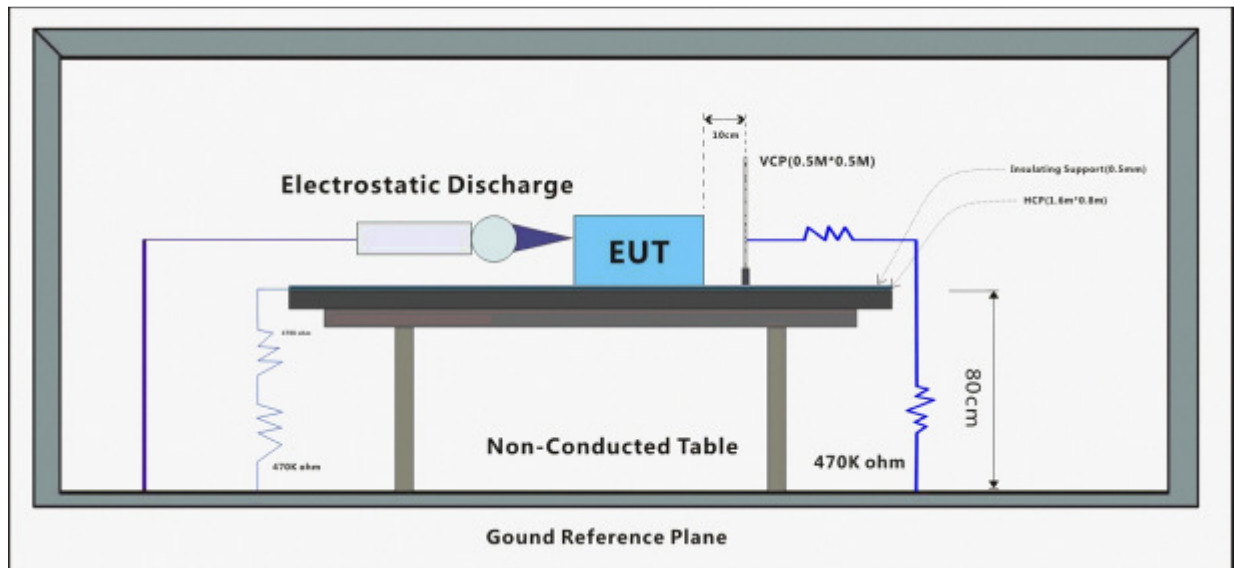
Test Mode:

c: Test in dehumidification mode.

d: Test in fan mode, keep swinging at high speed.

e: Test in idle mode.

7.2.2 Test Setup Diagram



7.2.3 Test Results:

For both models:

Observations: Test Point:

1. All insulated enclosure and seams.
2. All accessible metal parts of the enclosure.
3. All side

Discharge type	Level (kV)	Polarity	Test Point	Result / Observations
Air Discharge	8	+	1	A
Air Discharge	8	-	1	A
Contact Discharge	4	+	2	A
Contact Discharge	4	-	2	A
Horizontal Coupling	4	+	3	N/A
Horizontal Coupling	4	-	3	N/A
Vertical Coupling	4	+	3	A
Vertical Coupling	4	-	3	A

Results:

A: No degradation in the performance of the EUT was observed.

N/A: Not Applicable (not required by Standard).

7.3 Electrical Fast Transients/Burst at Power Port

Test Requirement:	EN 55014-2:2015
Test Method:	EN 61000-4-4:2012
Performance Criterion:	B
Repetition Frequency:	5kHz
Burst Period:	300ms
Test Duration:	2 minute per level & polarity

7.3.1 E.U.T. Operation

Operating Environment:

Temperature: 26 °C Humidity: 50 % RH Atmospheric Pressure: 1005 mbar

a: Test in cooling mode, keep swinging at high speed, and adjust the EUT temperature at the lowest temperature position.

b: Test in heating mode, keep swinging at high speed, and adjust the EUT temperature at the highest temperature position.

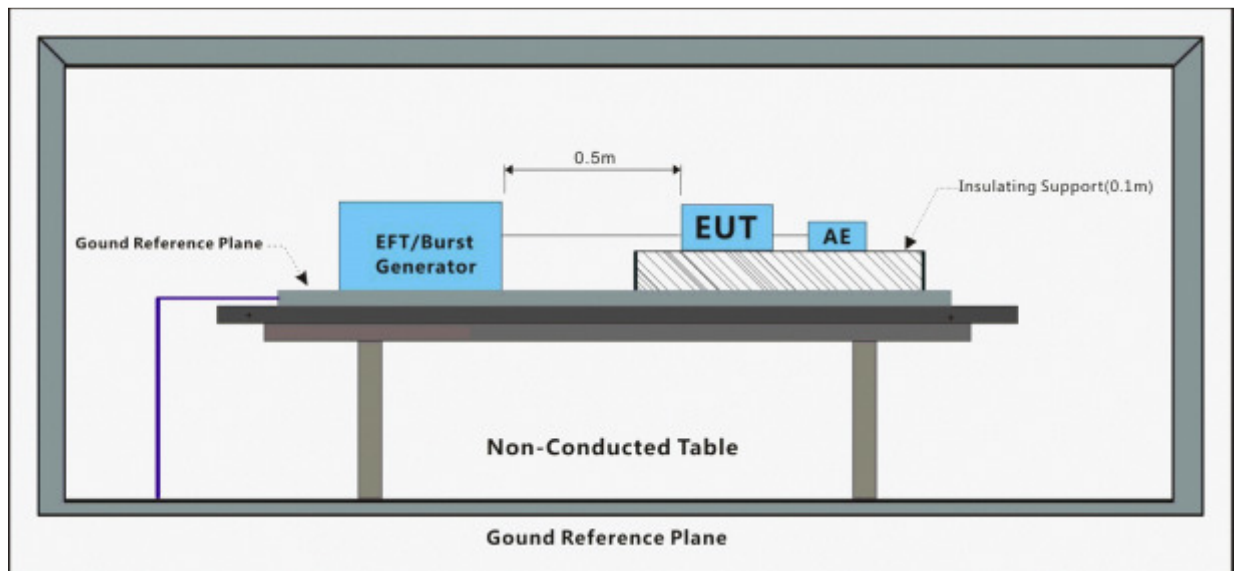
Test Mode:

c: Test in dehumidification mode.

d: Test in fan mode, keep swinging at high speed.

e: Test in idle mode.

7.3.2 Test Setup Diagram



7.3.3 Test Results:

For both models:

Test Line	Level (kV)	Polarity	Direct/Coupling	Result / Observations
AC power port	1	+	Direct	A
AC power port	1	-	Direct	A
Singal lines	0.5	+	Coupling	A
Singal lines	0.5	-	Coupling	A

Results:

A: No degradation in the performance of the EUT was observed.

7.4 Surge at Power Port

Test Requirement:	EN 55014-2:2015
Test Method:	EN 61000-4-5:2014
Performance Criterion:	B
Interval:	60s between each surge
No. of surges:	5 positive at 90°, 5 negative at 270°.

7.4.1 E.U.T. Operation

Operating Environment:

Temperature: 25 °C Humidity: 50 % RH Atmospheric Pressure: 1005 mbar

a: Test in cooling mode, keep swinging at high speed, and adjust the EUT temperature at the lowest temperature position.

b: Test in heating mode, keep swinging at high speed, and adjust the EUT temperature at the highest temperature position.

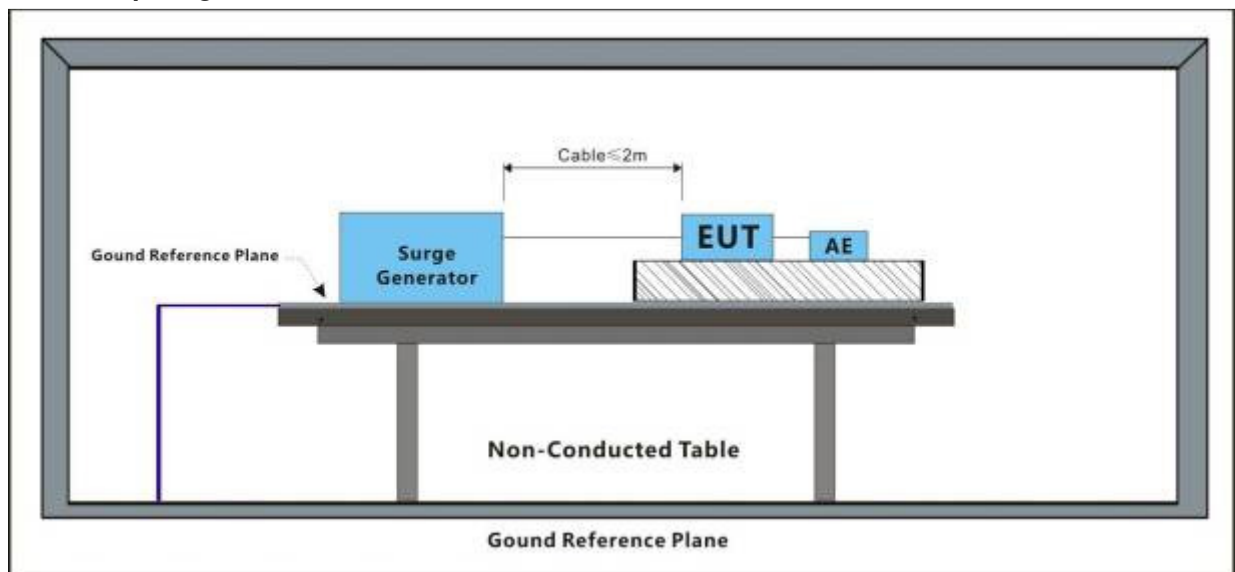
Test Mode:

c: Test in dehumidification mode.

d: Test in fan mode, keep swinging at high speed.

e: Test in idle mode.

7.4.2 Test Setup Diagram



7.4.3 Test Results:

For both models:

Test Line	Level (kV)	Polarity	Phase (deg)	Result / Observations
L-N	1	+	90°	A
L-N	1	-	270°	A
L-PE	2	+	90°	A
L-PE	2	-	270°	A
PE-N	2	+	90°	A
PE-N	2	-	270°	A

Results:

A: No degradation in the performance of the EUT was observed.

7.5 Conducted Immunity at Power Port (150kHz-230MHz)

Test Requirement:	EN 55014-2:2015
Test Method:	EN 61000-4-6:2014
Performance Criterion:	A
Frequency Range:	0.15MHz to 230MHz
Modulation:	80%, 1kHz Amplitude Modulation
Step Size	1%

7.5.1 E.U.T. Operation

Operating Environment:

Temperature: 25 °C Humidity: 50 % RH Atmospheric Pressure: 1005 mbar

a: Test in cooling mode, keep swinging at high speed, and adjust the EUT temperature at the lowest temperature position.

b: Test in heating mode, keep swinging at high speed, and adjust the EUT temperature at the highest temperature position.

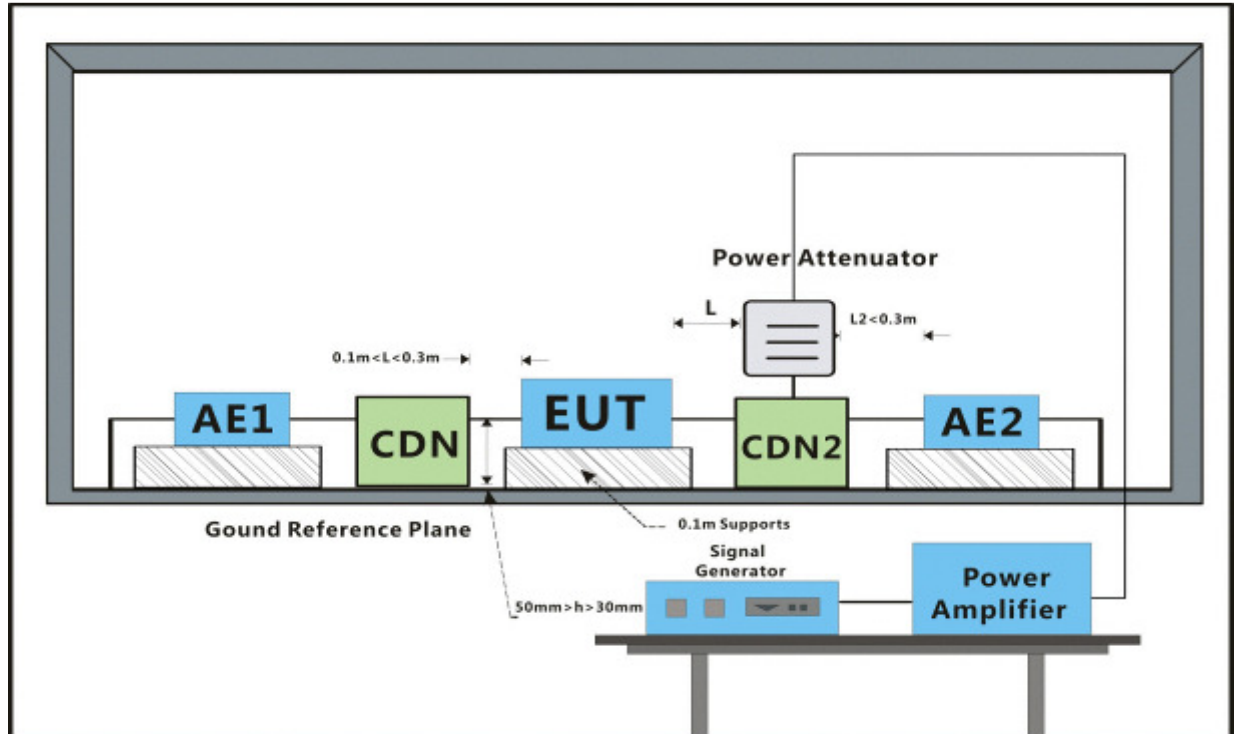
Test Mode:

c: Test in dehumidification mode.

d: Test in fan mode, keep swinging at high speed.

e: Test in idle mode.

7.5.2 Test Setup Diagram



7.5.3 Test Results:

For both models:

Cable port	Level (Vrms)	Direct/Coupling	Dwell time	Result / Observations
AC power port	3	Direct	2s	A
Singal Lines	1	Coupling	2s	A

Results:

A: No degradation in the performance of the EUT was observed.

7.6 Voltage Dips and Interruptions

Test Requirement: EN 55014-2:2015
 Test Method: EN 61000-4-11:2004
 Performance Criterion:
 For 50Hz 0% of UT (Supply Voltage) for 0.5 Periods: C;
 40% of UT for 10 Periods: C;
 70% of UT for 25 Periods: C
 No. of Dips / Interruptions: 3 per Level
 Time between dropout 10s

7.6.1 E.U.T. Operation

Operating Environment:

Temperature: 25 °C Humidity: 50 % RH Atmospheric Pressure: 1005 mbar

a: Test in cooling mode, keep swinging at high speed, and adjust the EUT temperature at the lowest temperature position.

b: Test in heating mode, keep swinging at high speed, and adjust the EUT temperature at the highest temperature position.

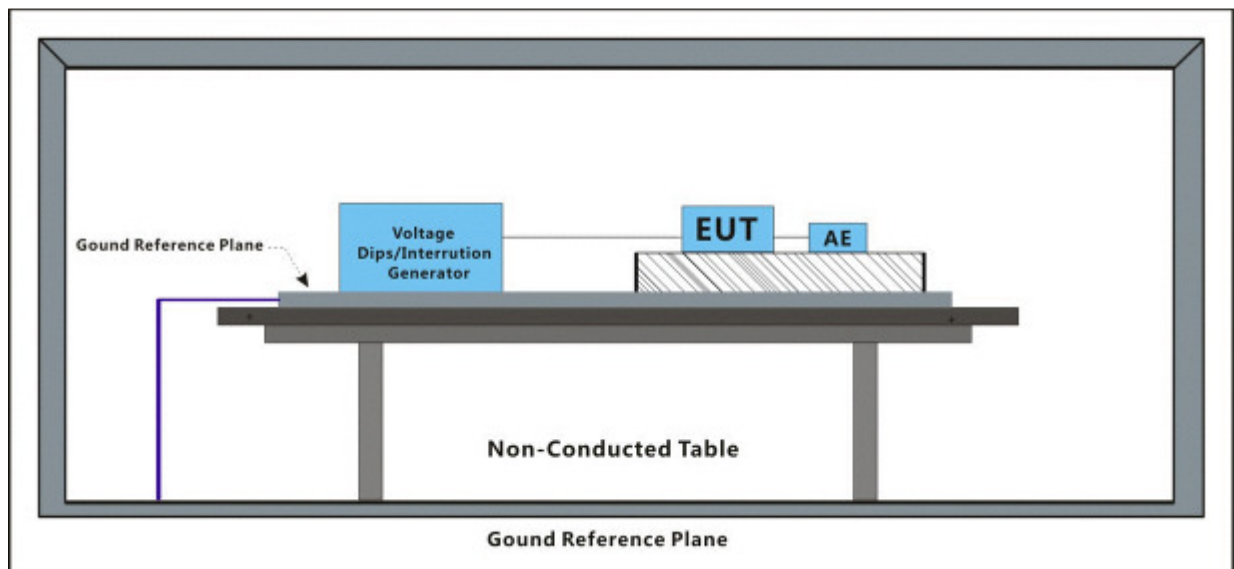
Test Mode:

c: Test in dehumidification mode.

d: Test in fan mode, keep swinging at high speed.

e: Test in idle mode.

7.6.2 Test Setup Diagram



7.6.3 Test Results:

For Collocation 1

For 50Hz

Level % UT	Phase (deg)	Duration	No. of Dips / Interruptions	Result / Observations
0	0°	0.5 Periods	3	A
0	180°	0.5 Periods	3	A
40	0°	10 Periods	3	B
40	180°	10 Periods	3	B
70	0°	25 Periods	3	A
70	180°	25 Periods	3	A

Results:

A: No degradation in the performance of the EUT was observed.

B: During test the outdoor unit was stopping working, it could recover automatically after test.

For Collocation 2

For 50Hz

Level % UT	Phase (deg)	Duration	No. of Dips / Interruptions	Result / Observations
0	0°	0.5 Periods	3	A
0	180°	0.5 Periods	3	A
40	0°	10 Periods	3	A
40	180°	10 Periods	3	A
70	0°	25 Periods	3	A
70	180°	25 Periods	3	A

Results:

A: No degradation in the performance of the EUT was observed.

8 Photographs

8.1 Conducted Disturbance at Mains Terminals (150kHz-30MHz) Test Setup

For Collocation 1



For Collocation 2



8.2 Conducted Disturbance at Load Terminals and Additional Terminals Test Setup

For Collocation 1

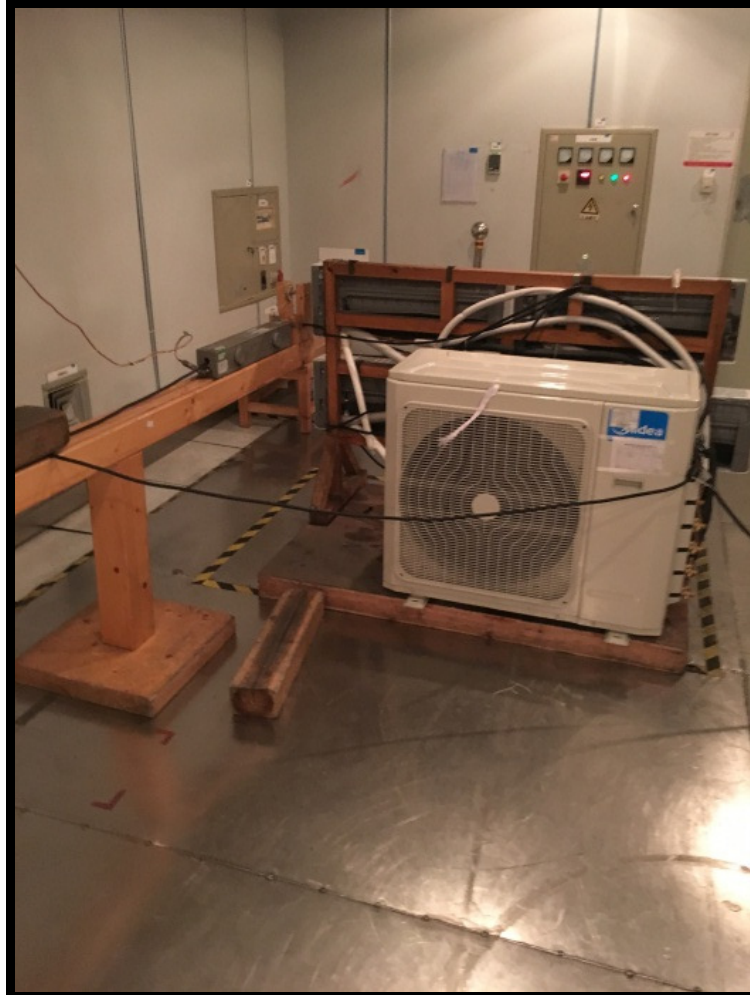


For Collocation 2



8.3 Disturbance Power Test Setup

For Collocation 1



For Collocation 2



8.4 Discontinuous Disturbance (150kHz-30MHz) Test Setup

For Collocation 1



For Collocation 2



8.5 Harmonic Current Emission Test Setup

For Collocation 1



For Collocation 2



8.6 Voltage Fluctuations and Flicker Test Setup

For Collocation 1



For Collocation 2



8.7 Electrostatic Discharge Test Setup

For Collocation 1



For Collocation 2



8.8 Electrical Fast Transients/Burst at Power Port Test Setup

For Collocation 1

Power port:



Signal lines



For Collocation 2

Power port:



Signal lines

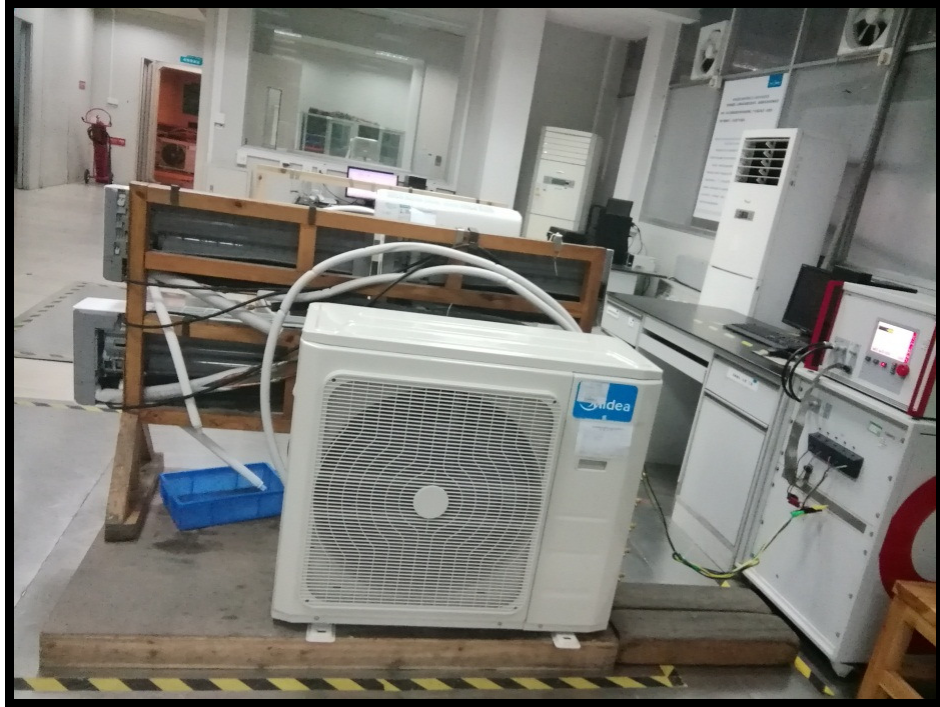


8.9 Surge at Power Port Test Setup

For Collocation 1



For Collocation 2



8.10 Conducted Immunity at Power Port (150kHz-230MHz) Test Setup

For Collocation 1

Power port:



Signal lines



For Collocation 2

Power port:



Signal lines



8.11 Voltage Dips and Interruptions Test Setup

For Collocation 1

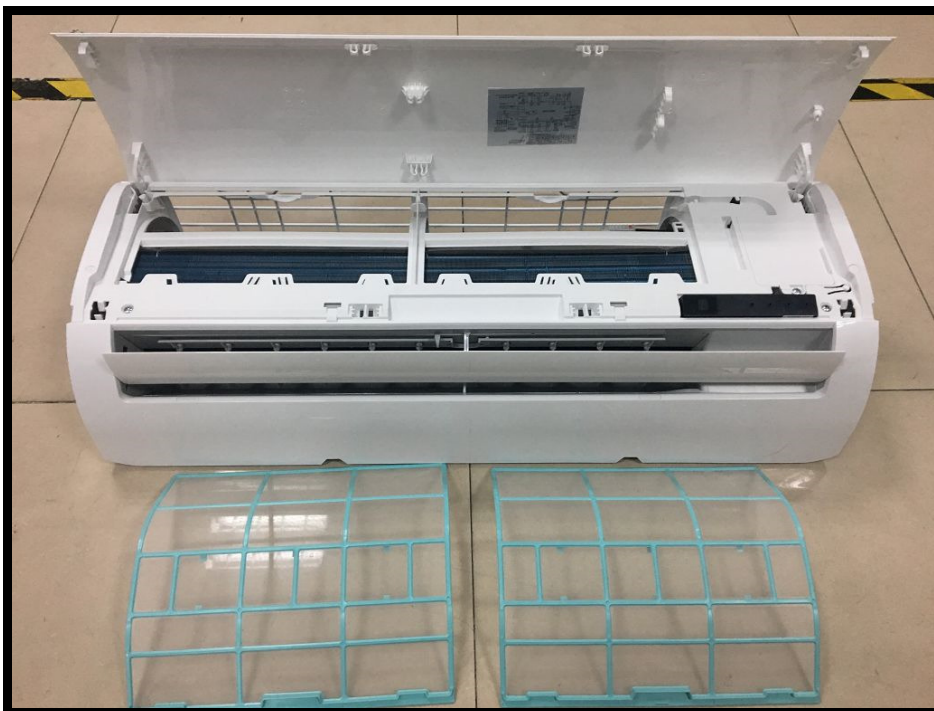


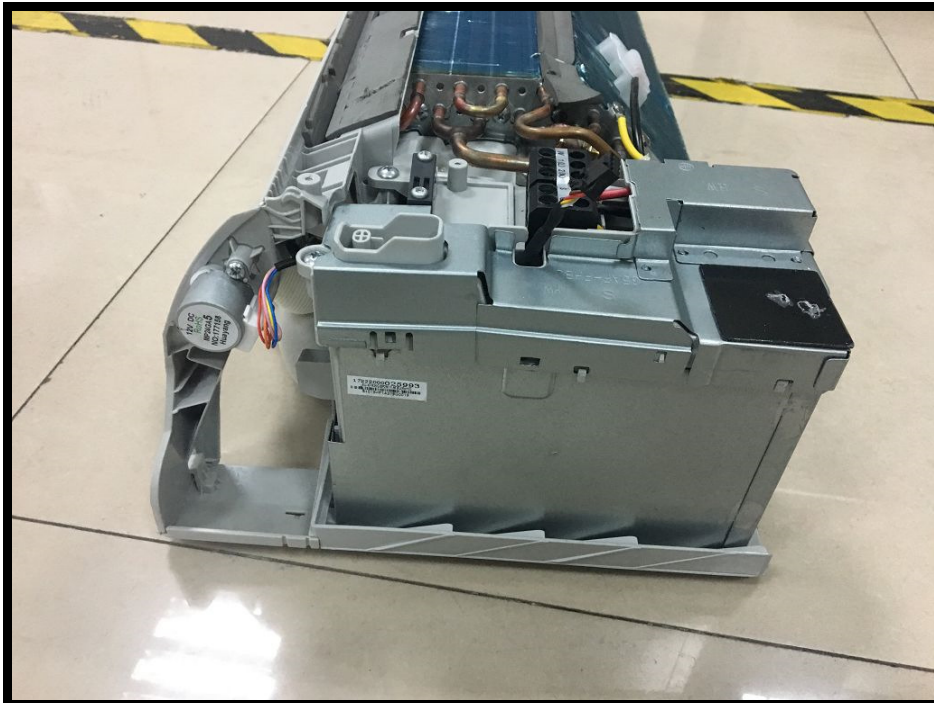
For Collocation 2

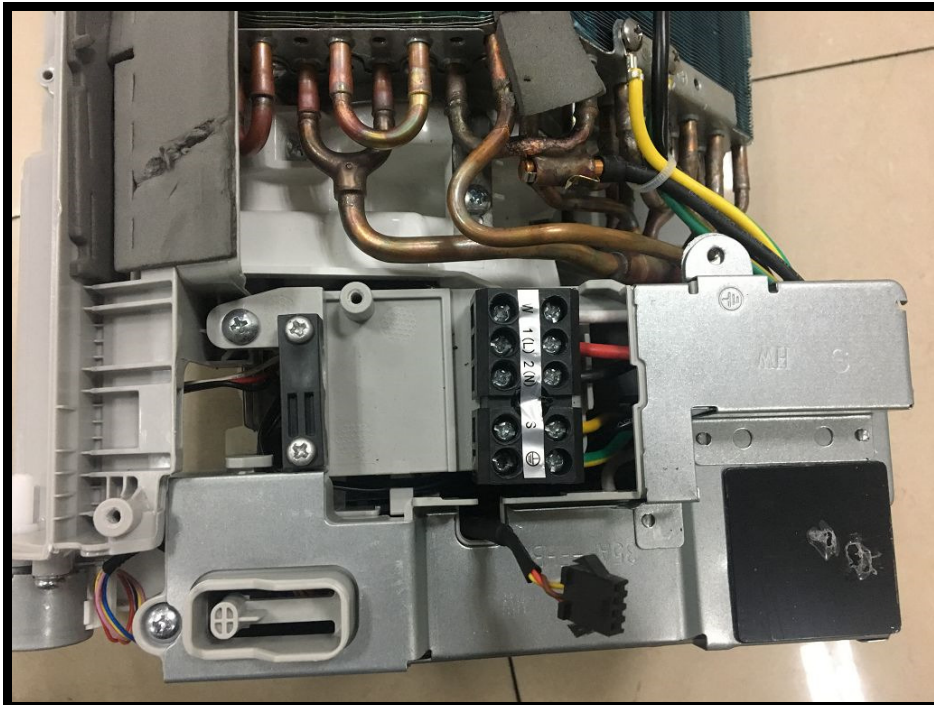
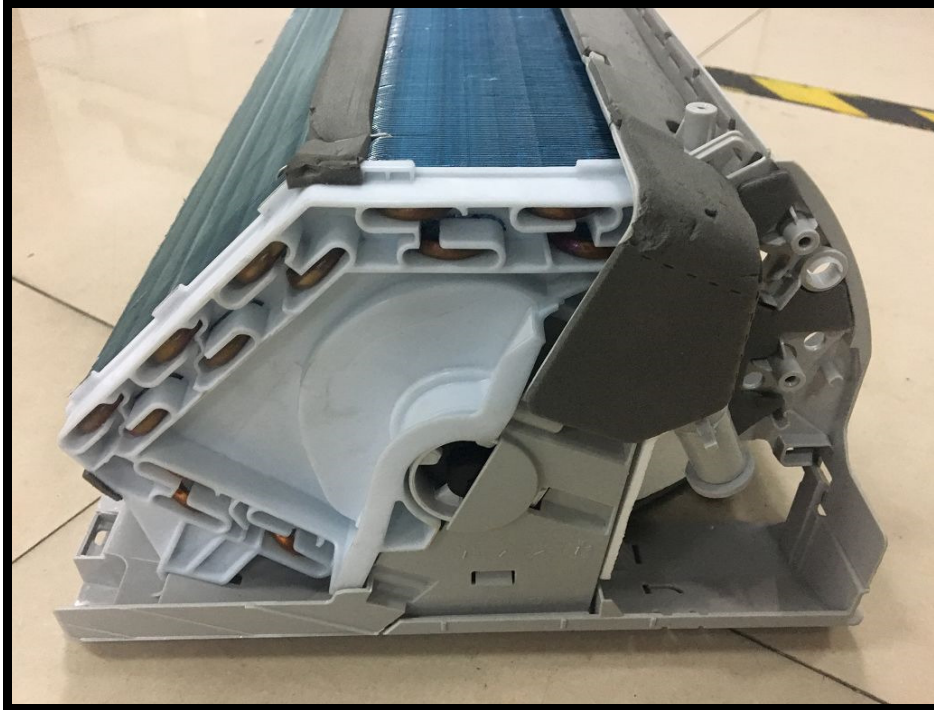


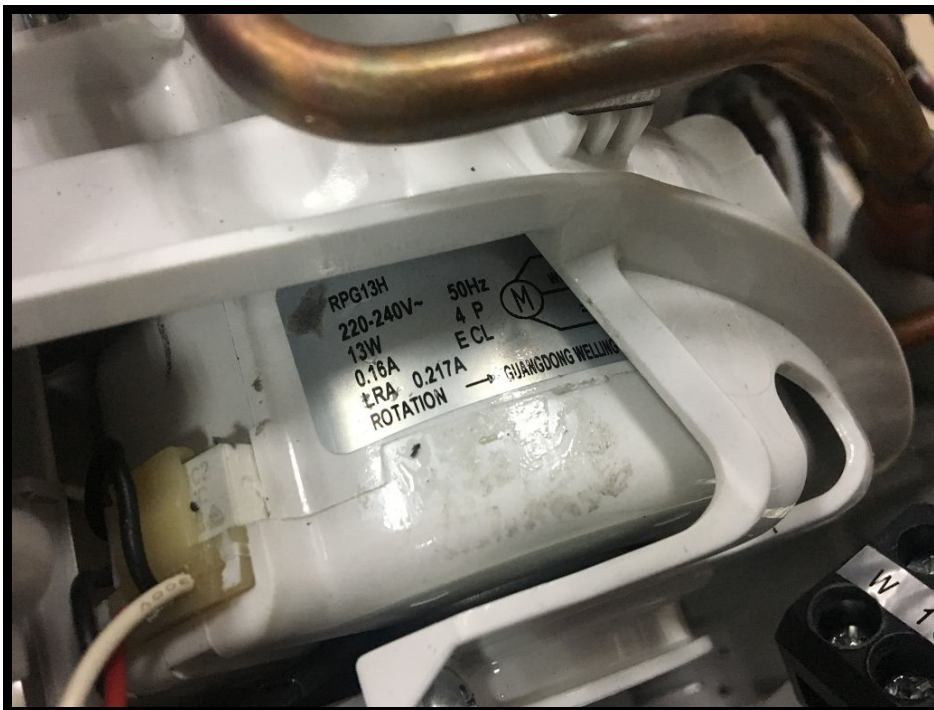
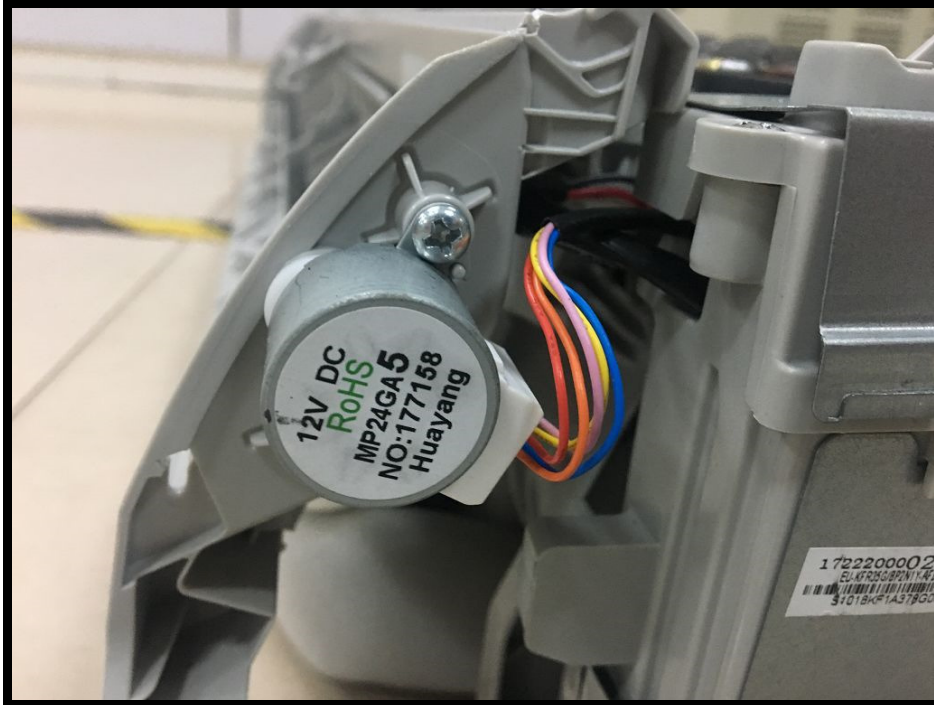
8.12 EUT Constructional Details

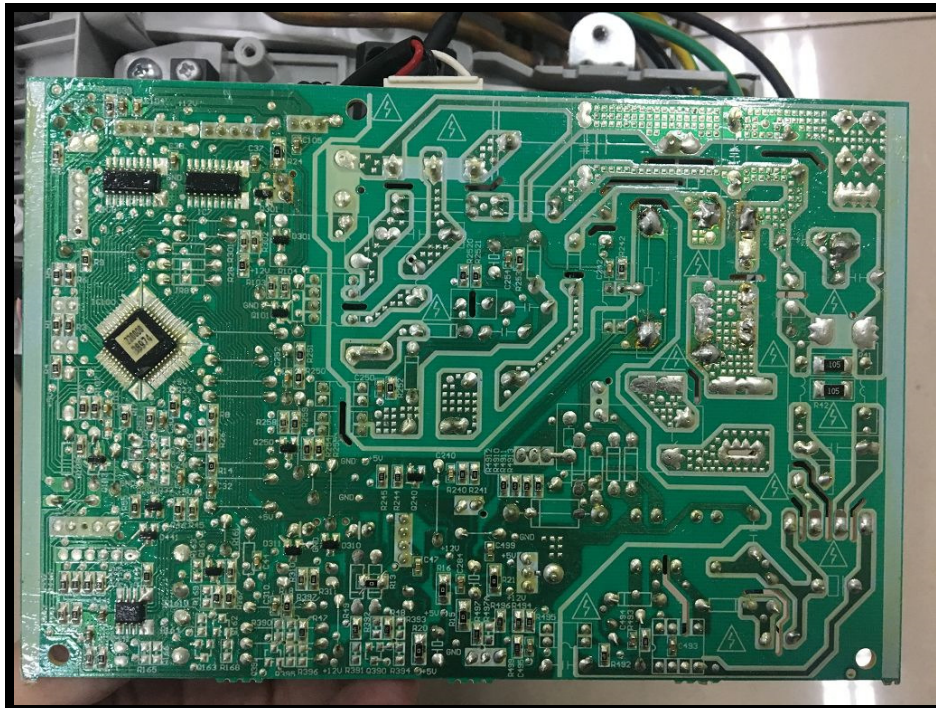
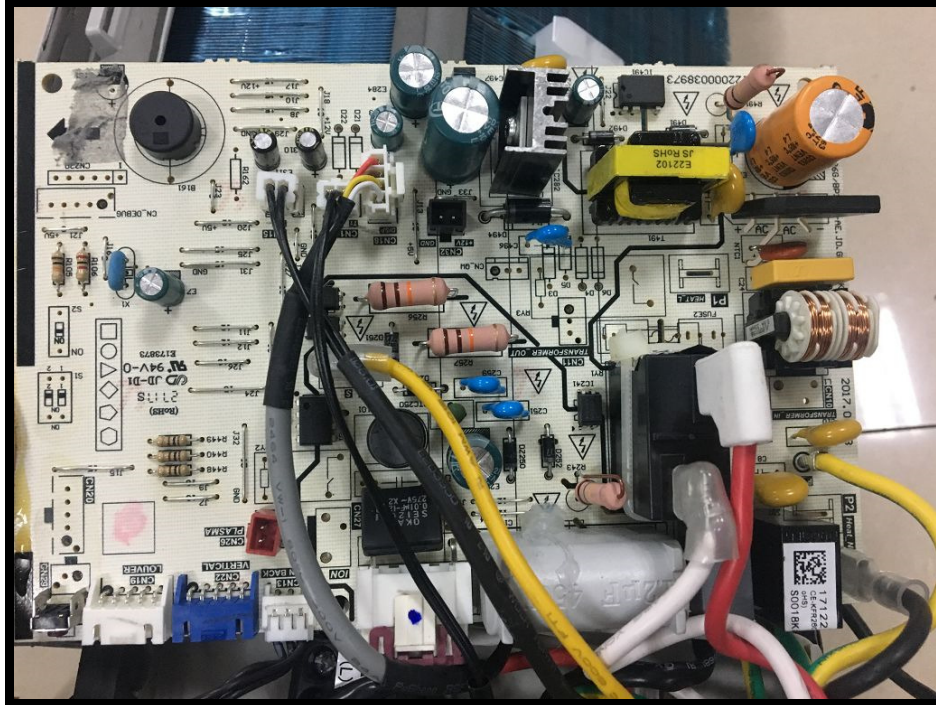
For indoor units MSAFBU-09HRDN8-QRD0GW & MSAFBU-12HRDN8-QRD0GW

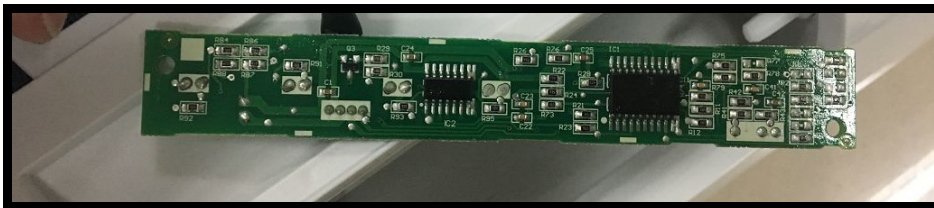
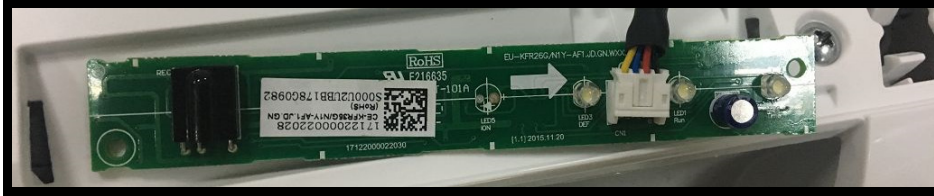




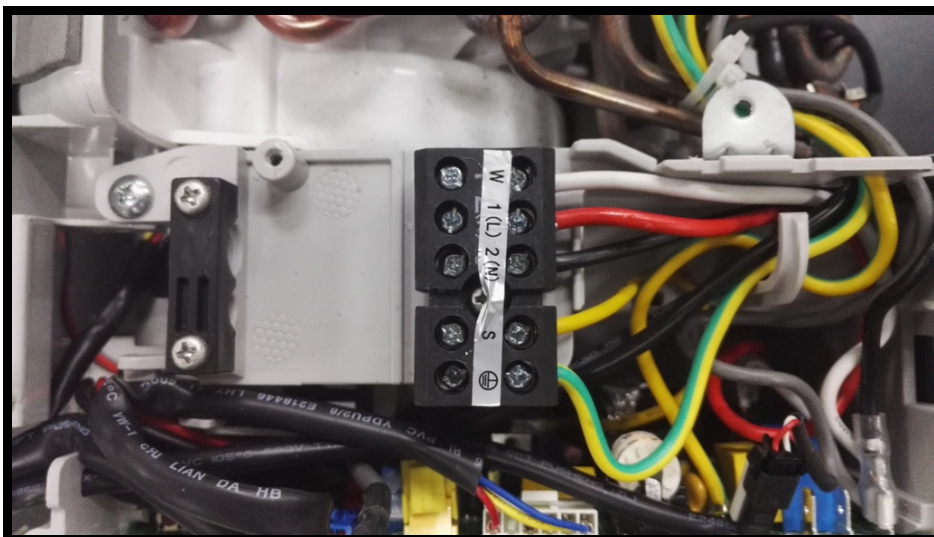
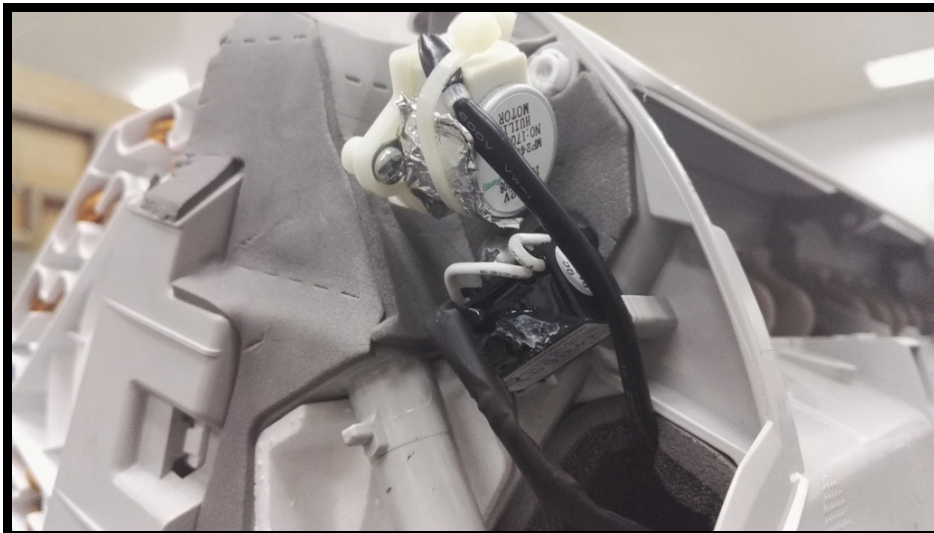




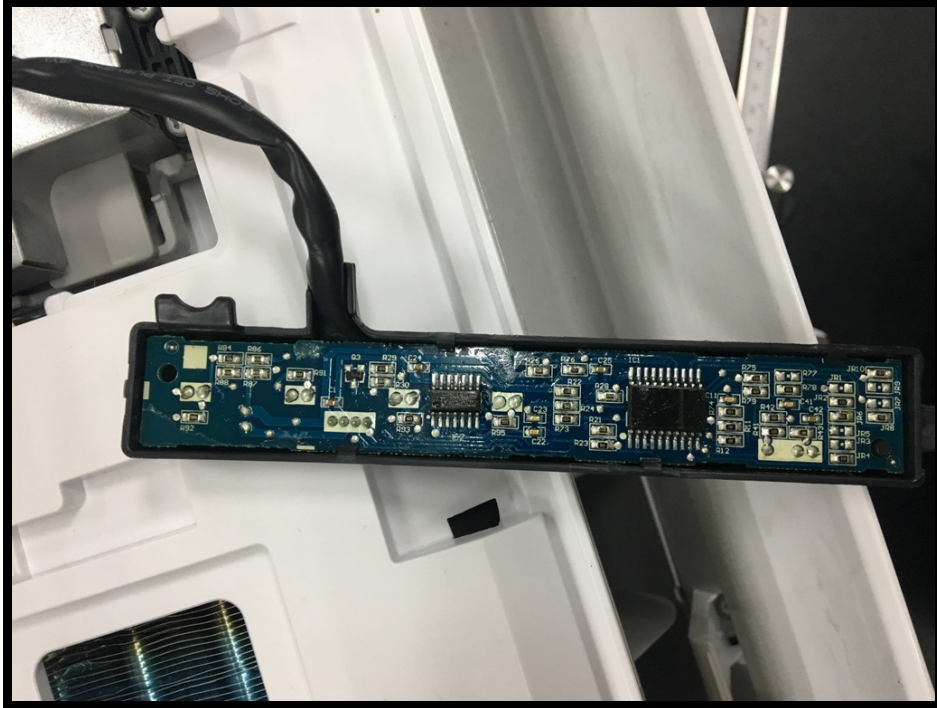




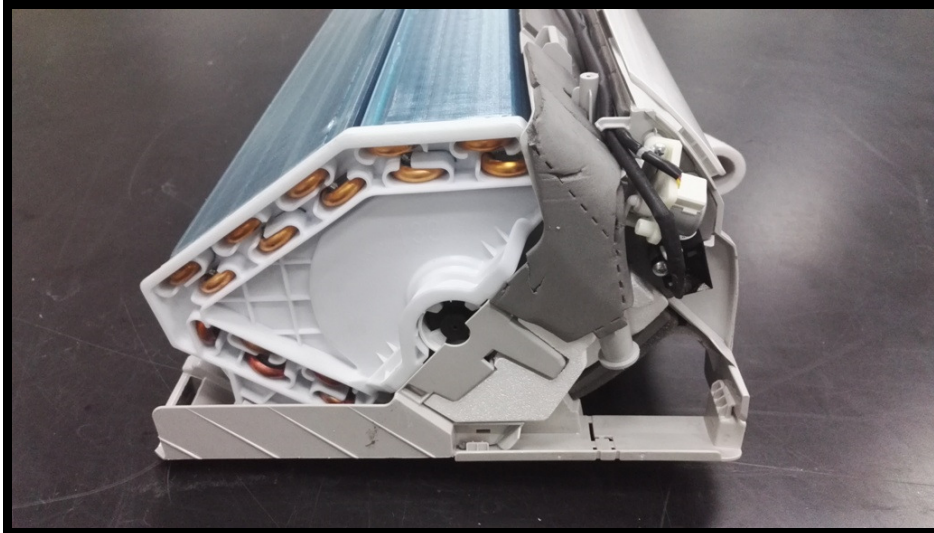
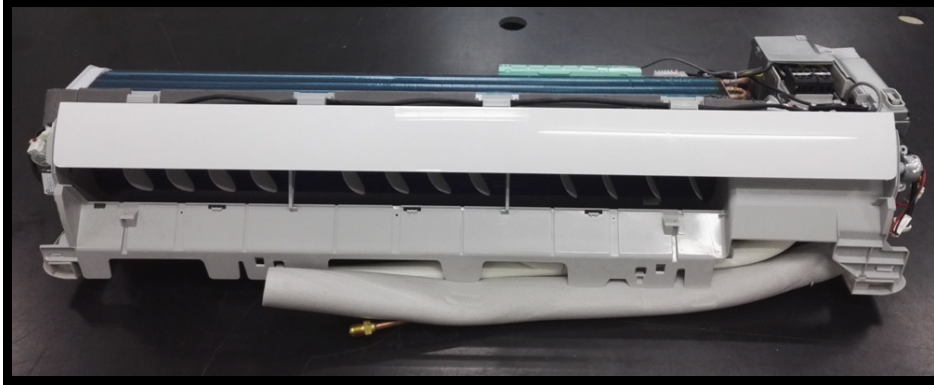
For indoor unit MSAFCU-18HRFN8-QRD0GW

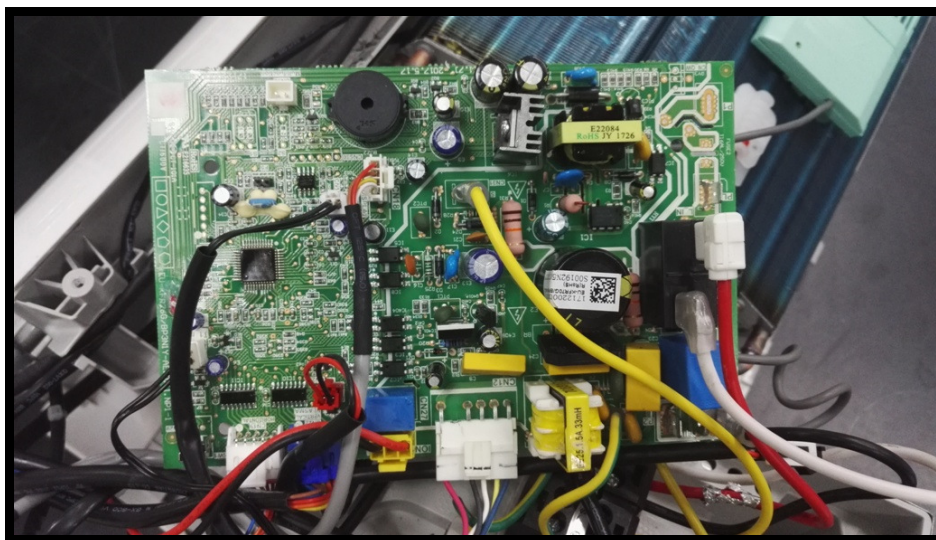
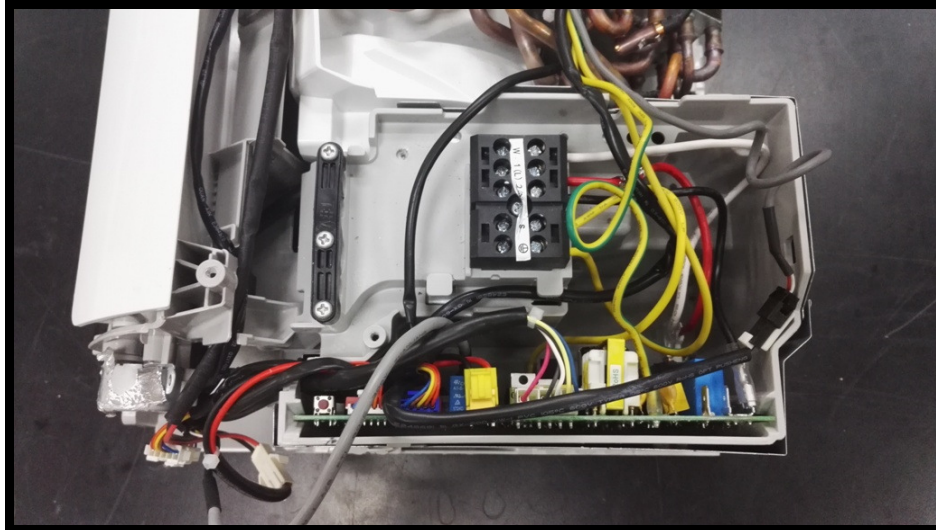


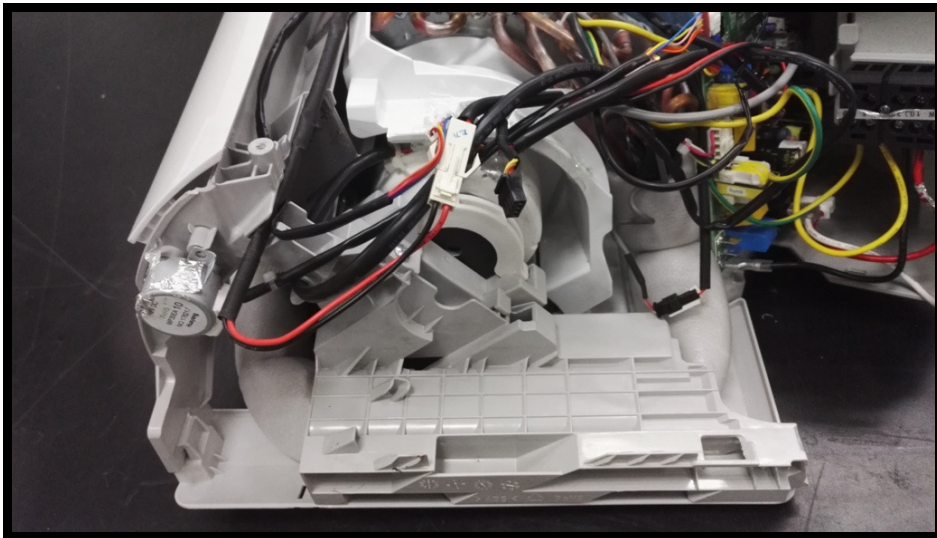
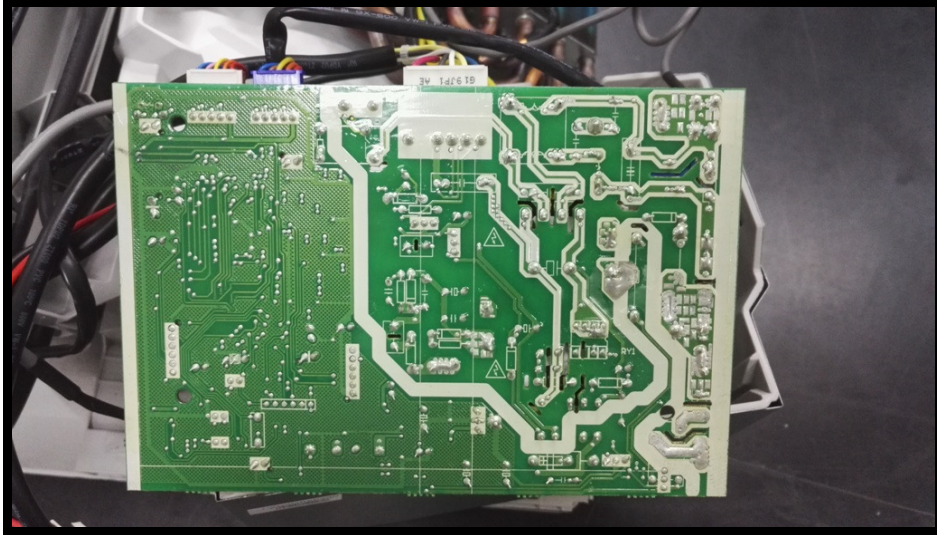


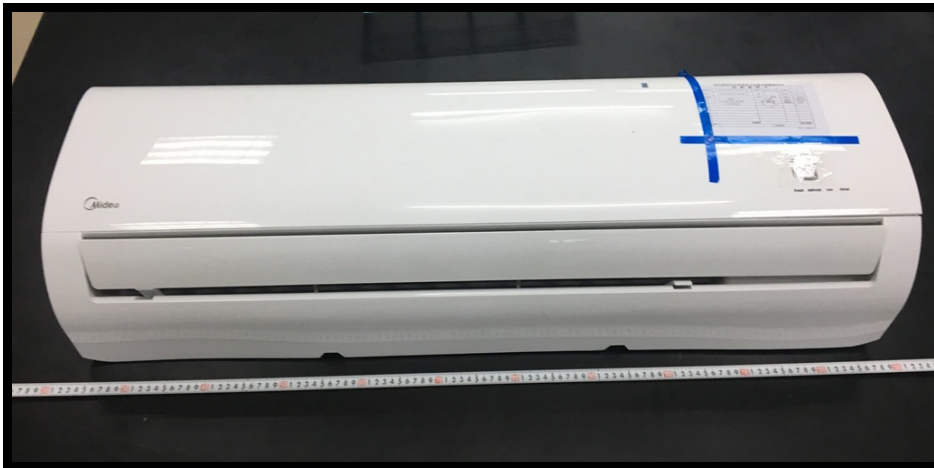


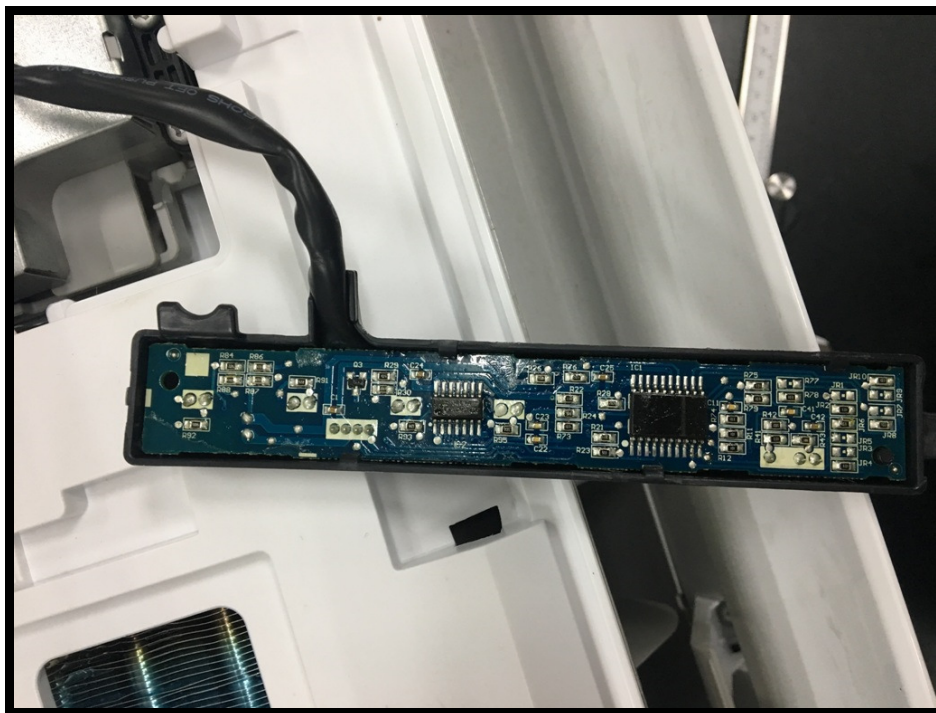
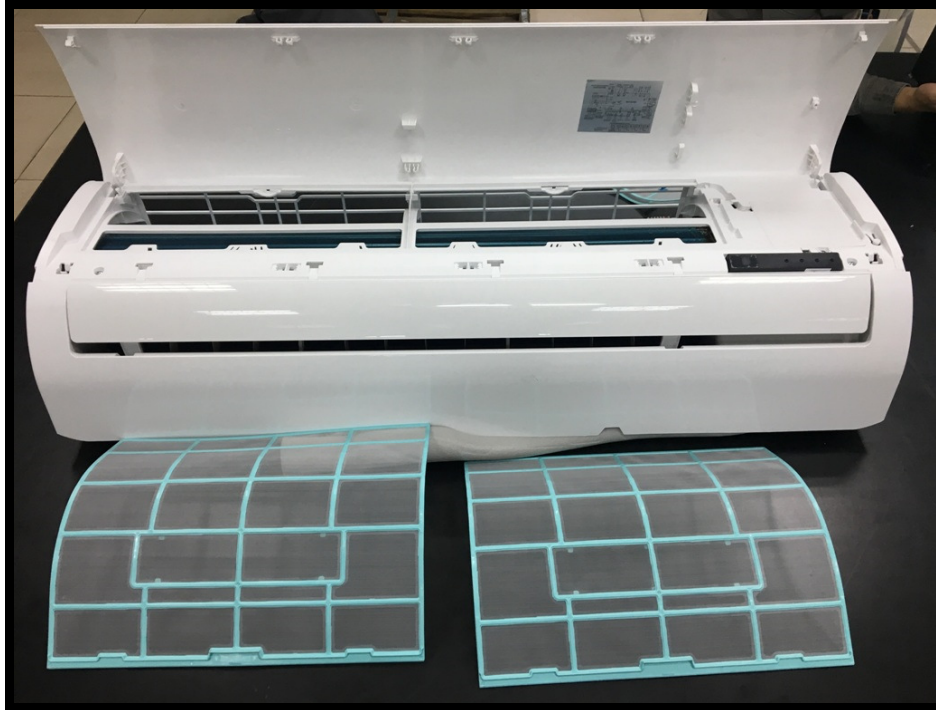
For indoor unit MSAFDU-24HRFN8-QRD0GW













--End of Report--