TEST REPORT # EMCC-170187B, 2018-11-06

EQUIPMENT UNDER TEST:

Device:	MLA100
Serial Number:	0090718
Application:	Amplifier
FCC ID:	2ACTR-MLA100
Manufacturer:	RM Costruzioni Elettroniche srl
Address:	Via IV Novembre, 42 - Ponte della Venturina 40046 Alto Reno Terme (Bo) ITALY
Phone:	+39 393 9158778
Fax:	-

RELEVANT STANDARD(S): 47 CFR §§ 97.307, 97.317

TEST REPORT PREPARED BY:

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EMCCons DR. RAŠEK GmbH & Co. KG
Boelwiese 8
91320 Ebermannstadt
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TEST PERSONNEL:

Wolfgang Kiss

HEAD OF COMMERCIAL EMC AND RADIO DEPT.:

Wolfgang Döring

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1 GENERAL INFORMATION

1.1 Purpose

The purpose of this report is to show compliance with the 47 CFR §97.307 and §97.317 requirements for the certification of external RF amplifiers operating in the amateur radio service.

1.2 Limits and Reservations

The test results in this report apply only to the particular equipment under test (EUT) as declared in this report. This test report shall not be reproduced except in full without the written permission of EMCCons DR. RAŠEK GmbH & Co. KG.

1.3 Test Location

Test Laboratory:	EMCCons DR. RAŠEK GmbH & Co. KG
Accreditation No.:	D-PL-12067-01-02
Address of Labs I, II, III and Head Office:	EMCCons DR. RAŠEK GmbH & Co. KG Boelwiese 8 91320 Ebermannstadt GERMANY
Address of Labs IV and V:	EMCCons DR. RAŠEK GmbH & Co. KG Stoernhofer Berg 15 91364 Unterleinleiter GERMANY
Phone:	+49 9194 7262-0
Fax:	+49 9194 7262-199
E-Mail:	emc.cons@emcc.de
Web:	www.emcc.de

1.4 Customer

Company Name:	RM Costruzioni Elettroniche srl
Street:	Via IV Novembre, 42 - Ponte della Venturina
City:	40046 Alto Reno Terme (Bo)
Country:	ITALY
Phone:	+39 393 9158778
E-Mail:	a.molinari@scc-info.it

1.5 Manufacturer

Company Name:	RM Costruzioni Elettroniche srl
Street:	Via IV Novembre, 42 - Ponte della Venturina
City:	40046 Alto Reno Terme (Bo)
Country:	ITALY

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1.6 Dates and Test Location

Date of Receipt of EUT: 2018-09-03
Test Date: 2018-09-14
Test Location: Lab IV

1.7 Ordering Information

Purchase Order: EMCC-170187B, dated 2018-08-31

1.8 Climatic Conditions

Date	Temperature [°C]	Relative Humidity [%]	Air Pressure [hPa]	Lab	Customer attended tests
2018-09-14	25	50	979	IV	no

2 PRODUCT DESCRIPTION

2.1 Equipment Under Test (EUT)

Trade name:	MLA100
Serial number:	0090718
FCC ID	2ACTR-MLA100
Control board firmware:	V.31
Control software version:	Not applicable
Control hardware revision:	Front_Rev.1. (MLA100)
Amplifier board firmware:	Not applicable
Amplifier software version:	Not applicable
Amplifier hardware revision:	MLA100_Rev.1
Application:	Amplifier
Power supply:	13.5 VDC
Highest internally generated or used frequency:	64 MHz (MCU clock)
Frequency bands as defined by the customer	1.800-2.000 MHz 3.500-4.000 MHz 7.000-7.300 MHz 10.100-10.150 MHz 14.000-14.350 MHz 18.068-18.168 MHz 21.000-21.450 MHz 24.890-24.990 MHz 28.000-29.700 MHz 50.000-54.000 MHz
Output power:	100 W
Ports:	ANT RTX PTT In DC In (see Annex 3 for detailed information)
Accessories delivered with EUT:	Exciter, Signal Generator, DC Power Supply, cable harness (see chapter 2.3)
Variants:	MLA100V
Remarks:	None

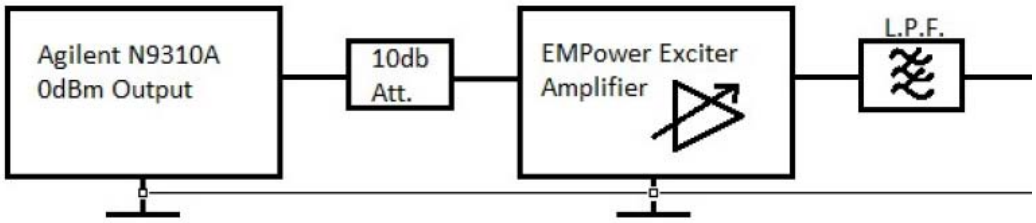
For further information concerning port description see Annex 3.

2.2 Intended Use

Amplifier for amateur radio service.

2.3 EUT Peripherals/Simulators

An Agilent N9310A signal generator together with a EMPower 2005-BBS0A3FKO Exciter Power Amplifier and special filters was used as exciter. The complete exciter set-up was provided by the customer.



For further information concerning set-up description see Annex 4. The information was submitted by the customer.

2.4 Mode of Operation during Testing and Test Setup

The EUT was supplied with 13.5 VDC and switched on. “ANT1” was connected to a dummy load. The output power was set to full output power (nominal power).

Terminal	Tested with
Power supply	13.5 VDC
RF input	“RTX”, for all frequencies
RF output	“ANT”, for all frequencies

2.5 Modifications Required for Compliance

None.

3 TEST RESULTS SUMMARY

Summary of test results for the following EUT:

Manufacturer: RM Costruzioni Elettroniche srl
Device: MLA100
Serial No: 0090718

Requirement	47 CFR Section	Report Section	Result
Spurious Emissions & Gain	97.307(d), 97.317(a)	4	Passed

The client has made the determination that EUT Condition, Characterization, and Mode of Operation are representative of production units and meet the requirements of the specifications referenced herein.
Consistent with Industry practice, measurement and test equipment not directly involved in obtaining measurement results but having an impact on measurements (such as cable loss, antenna factors, etc.) are factored into the "Correction Factor" documented in certain test results. Instrumentation employed for testing meets tolerances consistent with known Industry Standards and Regulations.
All requirements were found to be within the limits outlined in this report.
The test results in this report apply only to the particular equipment under test (EUT) as declared in this report.

Test Personnel: Wolfgang Kiss
Issuance Date: 2018-11-06

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4 SPURIOUS EMISSIONS & GAIN

Test Requirement: FCC 47 CFR, § 97.307(d), § 97.307(e), § 97.317(a) & § 97.317(b)

4.1 Regulation

§ 97.307 Emission standards.

(d) For transmitters installed after January 1, 2003, the mean power of any spurious emission from a station transmitter or external RF power amplifier transmitting on a frequency below 30 MHz must be at least 43 dB below the mean power of the fundamental emission. For transmitters installed on or before January 1, 2003, the mean power of any spurious emission from a station transmitter or external RF power amplifier transmitting on a frequency below 30 MHz must not exceed 50 mW and must be at least 40 dB below the mean power of the fundamental emission. For a transmitter of mean power less than 5 W installed on or before January 1, 2003, the attenuation must be at least 30 dB. A transmitter built before April 15, 1977, or first marketed before January 1, 1978, is exempt from this requirement.

(e) The mean power of any spurious emission from a station transmitter or external RF power amplifier transmitting on a frequency between 30-225 MHz must be at least 60 dB below the mean power of the fundamental. For a transmitter having a mean power of 25 W or less, the mean power of any spurious emission supplied to the antenna transmission line must not exceed 25 µW and must be at least 40 dB below the mean power of the fundamental emission, but need not be reduced below the power of 10 µW. A transmitter built before April 15, 1977, or first marketed before January 1, 1978, is exempt from this requirement.

§ 97.317 Standards for certification of external RF power amplifiers.

(a) To receive a grant of certification, the amplifier must:
(1) Satisfy the spurious emission standards of §97.307 (d) or (e) of this part, as applicable, when the amplifier is operated at the lesser of 1.5 kW PEP or its full output power and when the amplifier is placed in the “standby” or “off” positions while connected to the transmitter.
(2) Not be capable of amplifying the input RF power (driving signal) by more than 15 dB gain. Gain is defined as the ratio of the input RF power to the output RF power of the amplifier where both power measurements are expressed in peak envelope power or mean power.
(3) Exhibit no amplification (0 dB gain) between 26 MHz and 28 MHz.

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4.2 Test Equipment

Instrument	Manufacturer	Type	EMCC Ident No.	Last Calibration	Next Calibration
2 W Termination	Pasternack	PE6154	133	2018-08	2020-08
RF Power Meter	Rohde & Schwarz	NRVD	233	2016-02	2019-02
10-V-Insertion Probe	Rohde & Schwarz	URV 5-Z2	545	2018-10	2020-10
150 W / 6 dB Attenuator/N	Weinschel	40-6-43	810	2018-07	2020-07
25W/20dB Attenuator	Weinschel	46-20-34	815	2018-05	2020-05
500 W/3dB Attenuator/N	Bird	500-WA-FFN-03	1473	2018-03	2020-03
N-Cable N/50	EMCC DR. RASEK	RG 214	2399	2018-03	2019-03
20 W Attenuator 20dB	Narda	766-20	2428	2018-07	2020-07
N-Cable N/50	EMCC DR. RASEK	RG 214	2646	2018-03	2019-03
N-Cable N/50	EMCC DR. RASEK	RG 214	2649	2018-03	2019-03
2 W Attenuator 10dB	bird	2-18A-MFN-10	2725	2017-06	2019-06
2 W Attenuator 20dB	bird	2-18A-MFN-20	2733	2017-06	2019-06
Vector Network Analyzer	Rohde & Schwarz	ZVL 6	2960	2017-06	2019-06
EMI Test Receiver	Rohde & Schwarz	ESU8	3846	2018-01	2019-01
Web-Thermo-Hygrobarograph	Wiesemann & Theis GmbH WUT	57613 Web-T/Rh/P	4717	2018-01	2020-01
N-Cable N/50	EMCC DR. RASEK	RG214	6353	2018-03	2019-03
N-Cable N/50	EMCC DR. RASEK	RG214	6357	2018-03	2019-03

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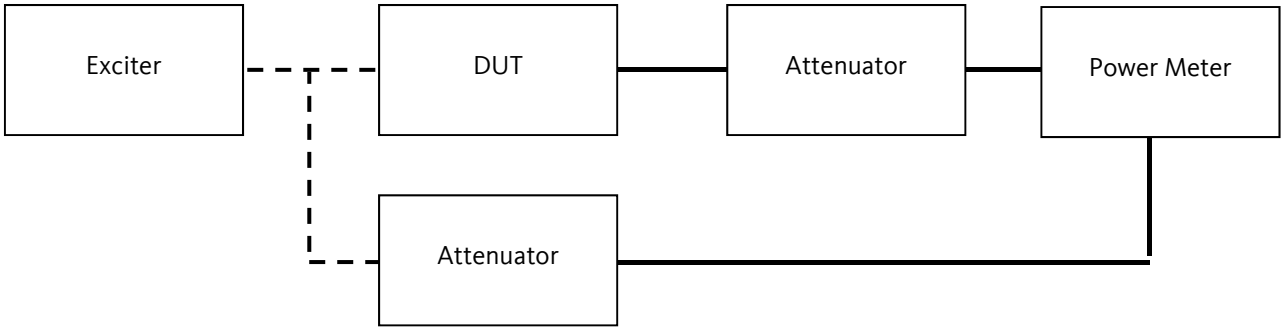
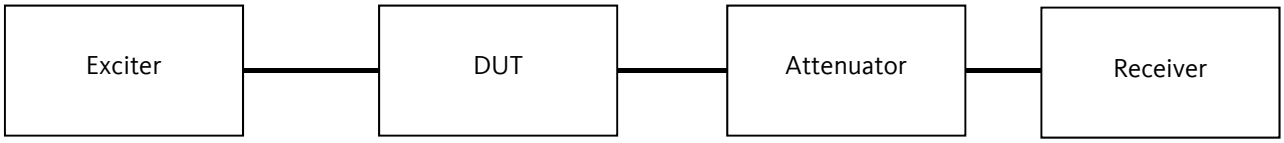
4.3 Test Setups

Schematic test setup for gain measurement:



Schematic test setup for spurious emissions measurement:



4.4 Test Result

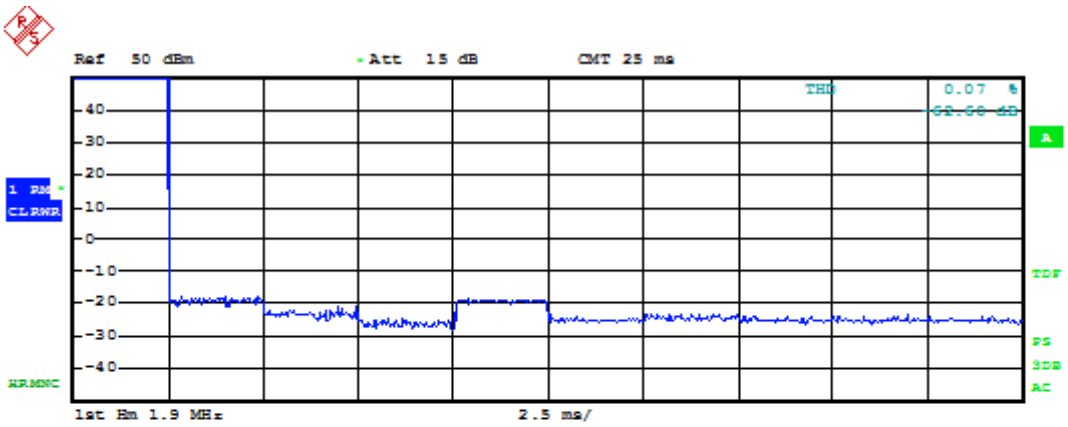
Amplifier Gain § 97.317				Spurious Emissions § 97.307(d), § 97.307(e)			
Frequency f1	Input Power	Output Power	Amplifier Gain	2 * f1	3 * f1	4 * f1	5-10 * f1
[MHz]	[dBm]	[dBm]	[dB]	[dBc]	[dBc]	[dBc]	[dBc]
1.9	36.6	49.2	12.6	-68.43	-72.50	-75.54	≤ -68.70
3.65	36.7	49.9	13.2	-69.49	-74.10	-77.93	≤ -64.66
7.1	36.5	49.8	13.3	-72.76	-68.90	-75.76	≤ -70.07
10.125	36.5	49.2	12.7	-52.43	-64.65	-75.68	≤ -71.47
14.175	36.5	49.6	13.1	-73.74	-69.57	-74.20	≤ -66.36
18.118	36.5	50.5	14.0	-64.60	-70.00	-76.33	≤ -72.79
21.225	36.5	49.0	12.5	-67.87	-70.48	-73.94	≤ -72.28
24.945	36.6	48.5	11.9	-47.56	-57.44	-71.64	≤ -70.32
28.85	36.7	48.8	12.1	-64.77	-72.67	-74.46	≤ -71.06
52	36.7	48.3	11.6	-69.04	-71.97	-73.71	≤ -69.42

Manufacturer: RM Costruzioni Elettroniche srl
Device: MLA100
Serial No: 0090718
Test Date: 2018-09-14

The EUT meets the requirements of this section.

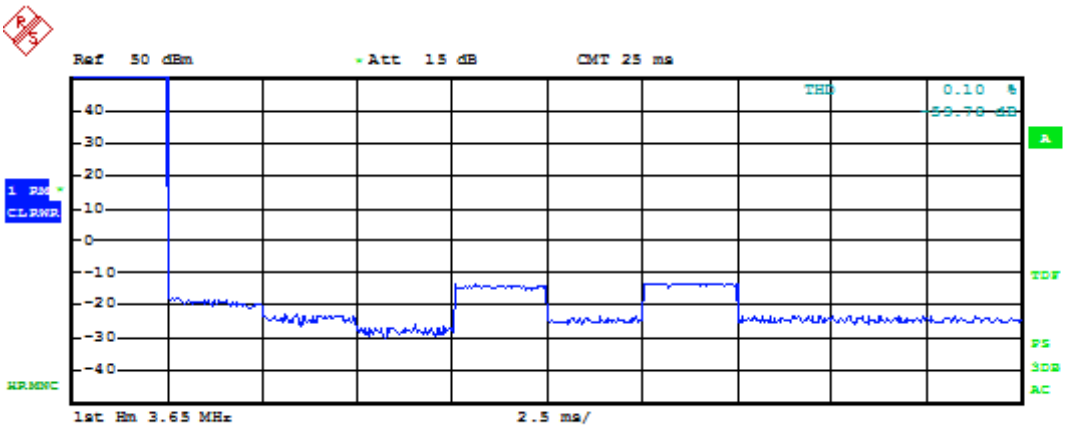
4.5 Measurement Plots

The R&S ESU8 implemented function “harmonic distortion” was used to proof compliance.



No	Frequency	RBW	Power
1	1.90 MHz	100 kHz	49.07 dBm
2	3.80 MHz	200 kHz	-68.43 dBc
3	5.70 MHz	300 kHz	-72.50 dBc
4	7.60 MHz	500 kHz	-75.54 dBc
5	9.50 MHz	500 kHz	-68.70 dBc
6	11.40 MHz	1 MHz	-74.47 dBc
7	13.30 MHz	1 MHz	-73.62 dBc
8	15.20 MHz	1 MHz	-74.43 dBc
9	17.10 MHz	1 MHz	-74.41 dBc
10	19.00 MHz	1 MHz	-74.58 dBc

$f_{carrier}$ = 1.9 MHz



No	Frequency	RBW	Power
1	3.65 MHz	100 kHz	49.89 dBm
2	7.30 MHz	200 kHz	-69.49 dBc
3	10.95 MHz	300 kHz	-74.10 dBc
4	14.60 MHz	500 kHz	-77.93 dBc
5	18.25 MHz	500 kHz	-64.66 dBc
6	21.90 MHz	1 MHz	-74.98 dBc
7	25.55 MHz	1 MHz	-63.90 dBc
8	29.20 MHz	1 MHz	-74.51 dBc
9	32.85 MHz	1 MHz	-74.64 dBc
10	36.50 MHz	1 MHz	-74.71 dBc

$f_{carrier}$ = 3.65 MHz

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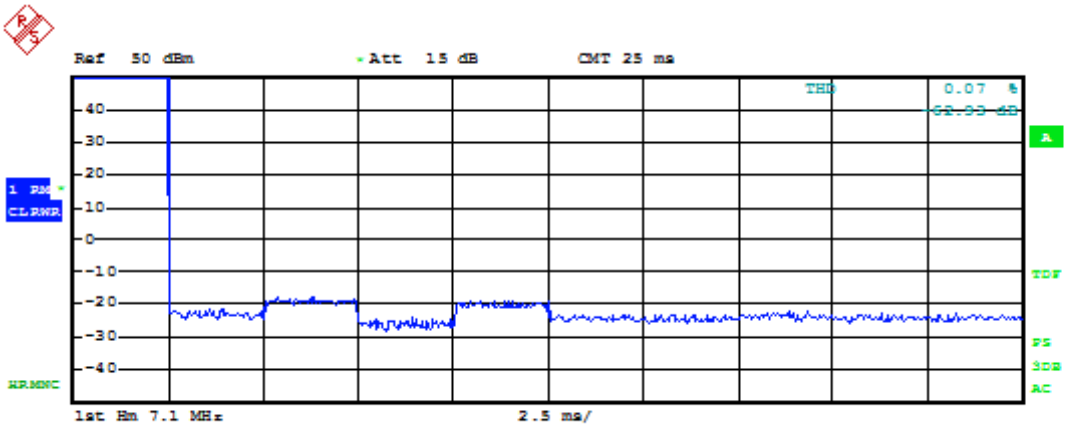
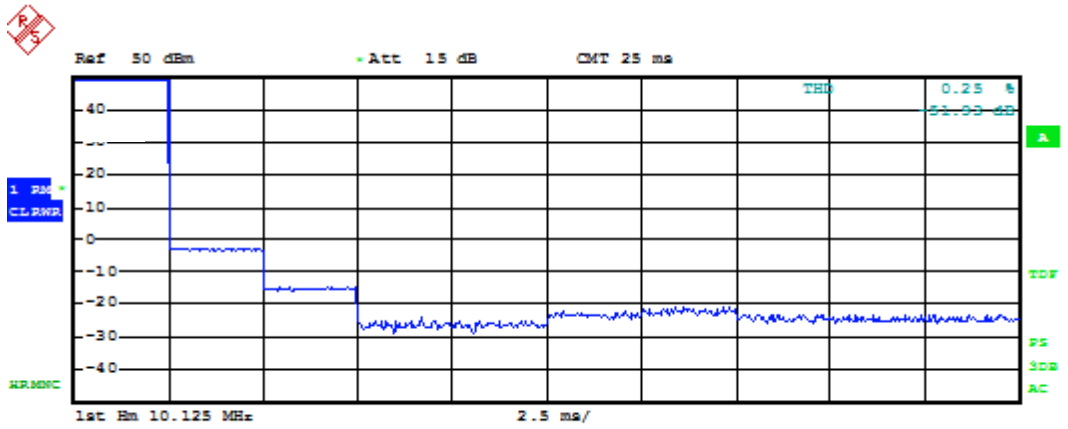


No	Frequency	RBW	Power
1	7.10 MHz	100 kHz	49.45 dBm
2	14.20 MHz	200 kHz	-72.76 dBc
3	21.30 MHz	300 kHz	-68.90 dBc
4	28.40 MHz	500 kHz	-75.76 dBc
5	35.50 MHz	500 kHz	-70.07 dBc
6	42.60 MHz	1 MHz	-74.07 dBc
7	49.70 MHz	1 MHz	-74.27 dBc
8	56.80 MHz	1 MHz	-73.48 dBc
9	63.90 MHz	1 MHz	-73.97 dBc
10	71.00 MHz	1 MHz	-73.97 dBc

$f_{carrier}$ = 7.1 MHz



No	Frequency	RBW	Power
1	10.13 MHz	100 kHz	48.99 dBm
2	20.25 MHz	200 kHz	-52.43 dBc
3	30.38 MHz	300 kHz	-64.65 dBc
4	40.50 MHz	500 kHz	-75.68 dBc
5	50.63 MHz	500 kHz	-75.53 dBc
6	60.75 MHz	1 MHz	-72.62 dBc
7	70.88 MHz	1 MHz	-71.47 dBc
8	81.00 MHz	1 MHz	-73.51 dBc
9	91.13 MHz	1 MHz	-73.82 dBc
10	101.25 MHz	1 MHz	-73.83 dBc

$f_{carrier}$ = 10.125 MHz

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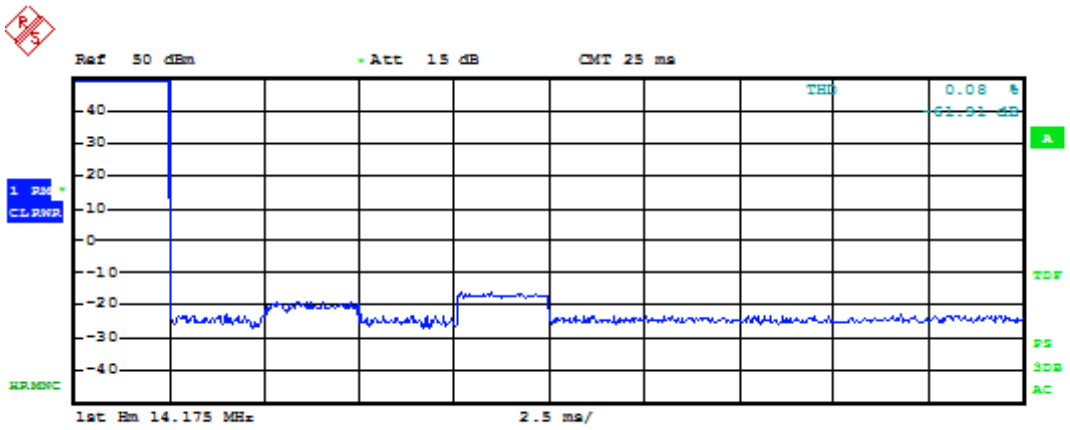
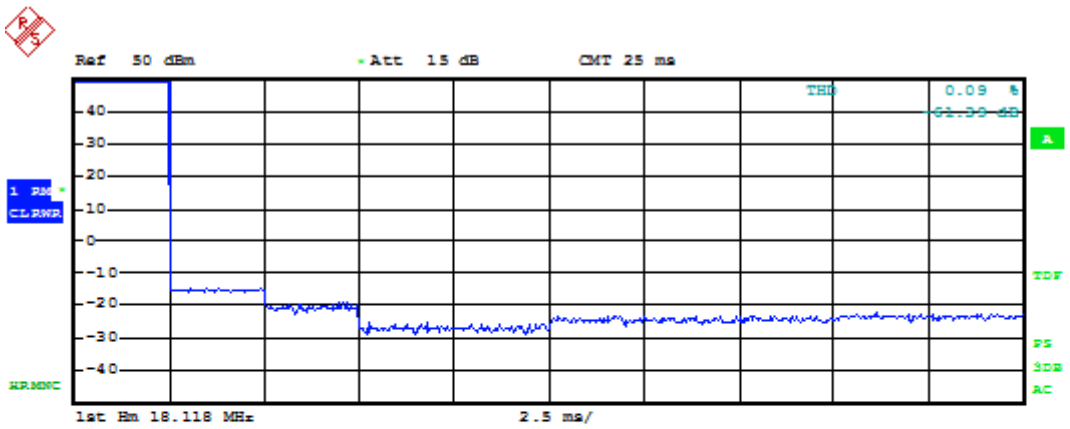


No	Frequency	RBW	Power
1	14.18 MHz	100 kHz	48.99 dBm
2	28.35 MHz	200 kHz	-73.74 dBc
3	42.52 MHz	300 kHz	-69.57 dBc
4	56.70 MHz	500 kHz	-74.20 dBc
5	70.88 MHz	500 kHz	-66.36 dBc
6	85.05 MHz	1 MHz	-73.84 dBc
7	99.22 MHz	1 MHz	-73.74 dBc
8	113.40 MHz	1 MHz	-73.88 dBc
9	127.58 MHz	1 MHz	-73.83 dBc
10	141.75 MHz	1 MHz	-73.45 dBc

$f_{carrier}$ = 14.175 MHz



No	Frequency	RBW	Power
1	18.12 MHz	100 kHz	48.97 dBm
2	36.24 MHz	200 kHz	-64.60 dBc
3	54.35 MHz	300 kHz	-70.00 dBc
4	72.47 MHz	500 kHz	-76.33 dBc
5	90.59 MHz	500 kHz	-76.43 dBc
6	108.71 MHz	1 MHz	-73.69 dBc
7	126.83 MHz	1 MHz	-73.81 dBc
8	144.94 MHz	1 MHz	-73.52 dBc
9	163.06 MHz	1 MHz	-72.79 dBc
10	181.18 MHz	1 MHz	-72.84 dBc

$f_{carrier}$ = 18.118 MHz

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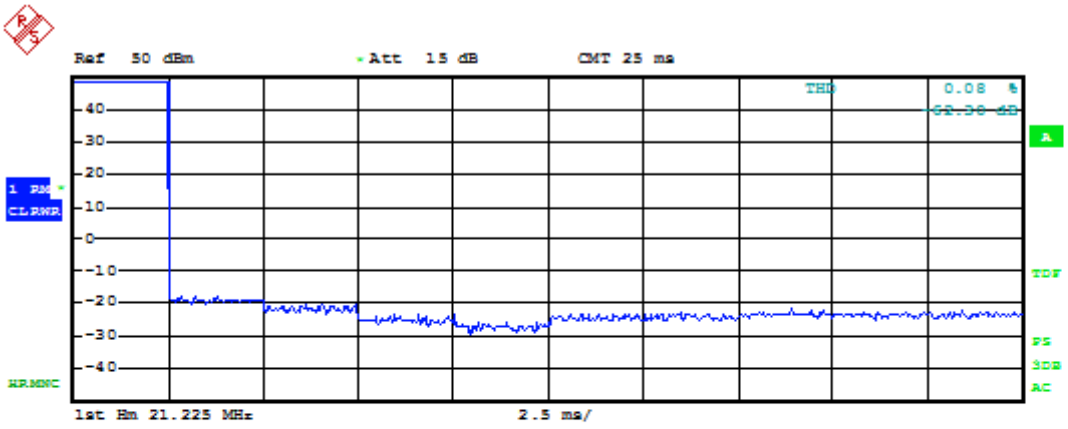
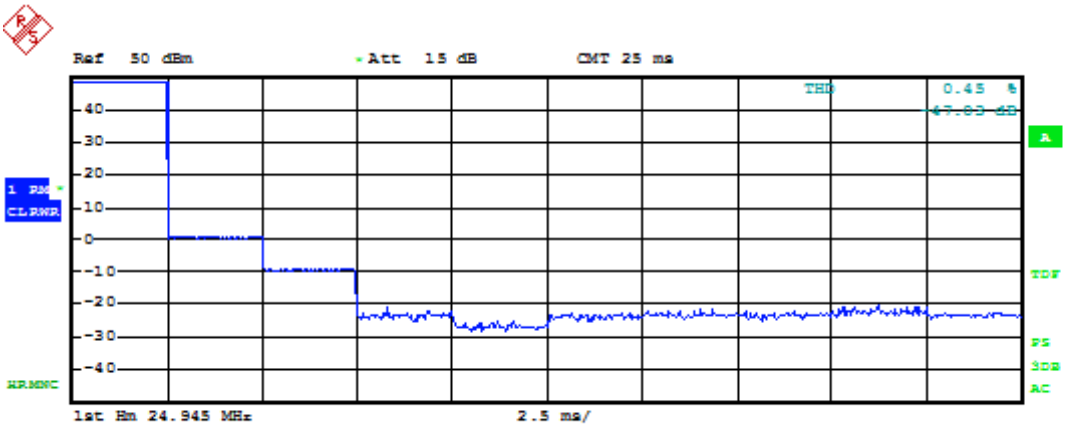


No	Frequency	RBW	Power
1	21.23 MHz	100 kHz	48.52 dBm
2	42.45 MHz	200 kHz	-67.87 dBc
3	63.67 MHz	300 kHz	-70.48 dBc
4	84.90 MHz	500 kHz	-73.94 dBc
5	106.13 MHz	500 kHz	-76.03 dBc
6	127.35 MHz	1 MHz	-73.29 dBc
7	148.57 MHz	1 MHz	-72.99 dBc
8	169.80 MHz	1 MHz	-72.28 dBc
9	191.03 MHz	1 MHz	-72.38 dBc
10	212.25 MHz	1 MHz	-72.38 dBc

$f_{carrier}$ = 21.225 MHz



No	Frequency	RBW	Power
1	24.95 MHz	100 kHz	47.85 dBm
2	49.89 MHz	200 kHz	-47.56 dBc
3	74.83 MHz	300 kHz	-57.44 dBc
4	99.78 MHz	500 kHz	-71.64 dBc
5	124.72 MHz	500 kHz	-75.02 dBc
6	149.67 MHz	1 MHz	-71.95 dBc
7	174.62 MHz	1 MHz	-71.29 dBc
8	199.56 MHz	1 MHz	-71.57 dBc
9	224.51 MHz	1 MHz	-70.32 dBc
10	249.45 MHz	1 MHz	-71.52 dBc

$f_{carrier}$ = 24.945 MHz

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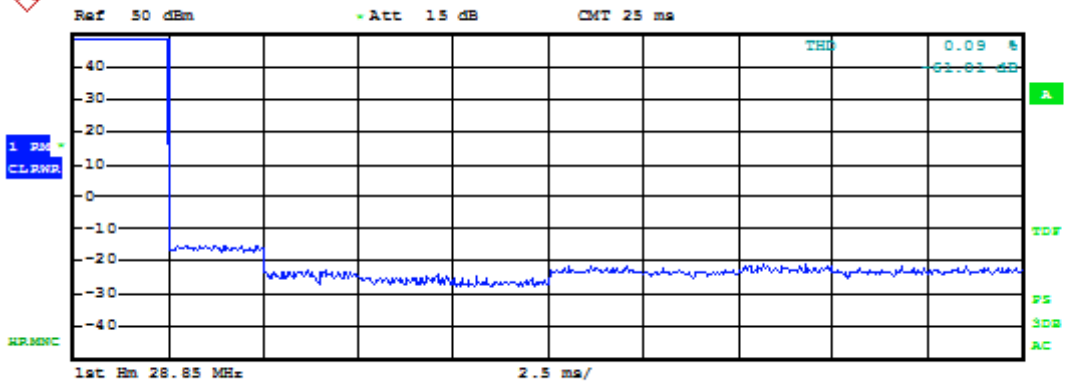
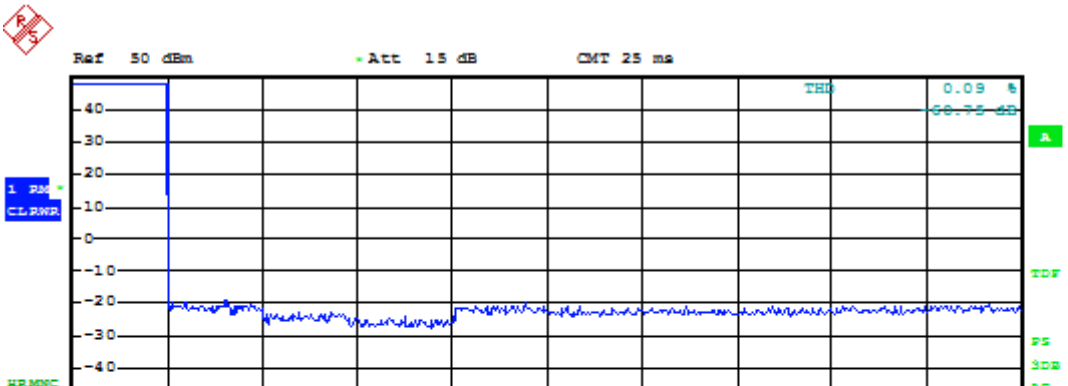


No	Frequency	RBW	Power
1	28.85 MHz	100 kHz	48.37 dBm
2	57.70 MHz	200 kHz	-64.77 dBc
3	86.55 MHz	300 kHz	-72.67 dBc
4	115.40 MHz	500 kHz	-74.46 dBc
5	144.25 MHz	500 kHz	-75.39 dBc
6	173.10 MHz	1 MHz	-71.51 dBc
7	201.95 MHz	1 MHz	-72.17 dBc
8	230.80 MHz	1 MHz	-71.06 dBc
9	259.65 MHz	1 MHz	-71.96 dBc
10	288.50 MHz	1 MHz	-71.66 dBc

$f_{carrier}$ = 28.85 MHz



No	Frequency	RBW	Power
1	52.00 MHz	100 kHz	47.36 dBm
2	104.00 MHz	200 kHz	-69.04 dBc
3	156.00 MHz	300 kHz	-71.97 dBc
4	208.00 MHz	500 kHz	-73.71 dBc
5	260.00 MHz	500 kHz	-69.56 dBc
6	312.00 MHz	1 MHz	-70.41 dBc
7	364.00 MHz	1 MHz	-70.24 dBc
8	416.00 MHz	1 MHz	-70.14 dBc
9	468.00 MHz	1 MHz	-69.87 dBc
10	520.00 MHz	1 MHz	-69.42 dBc

$f_{carrier}$ = 52.0 MHz

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5 LIST OF ANNEXES

Following annexes are separated parts from this test report.

Description	Pages
Annex 1: Photographs of test set-up	2
Annex 2: Photographs of equipment under test (EUT)	3
Annex 3: Description of equipment under test (EUT), ports	1
Annex 4: Description of exciter set-up provided by the customer	5

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Annex 1 to Test Report # EMCC-170187B, 2018-11-06

PHOTOGRAPHS OF TEST SET-UP

EQUIPMENT UNDER TEST:

Device:	MLA100
Serial Number:	0090718
Application:	Amplifier
FCC ID:	2ACTR-MLA100
Manufacturer:	RM Costruzioni Elettroniche srl
Address:	Via IV Novembre, 42 - Ponte della Venturina 40046 Alto Reno Terme (Bo) ITALY
Phone:	+39 393 9158778
Fax:	-

RELEVANT STANDARD(S): 47 CFR §§ 97.307, 97.317

Photo A1-1: Conducted amplifier gain measurement

Photo A1-2: Conducted spurious emissions measurement

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Annex 2 to Test Report # EMCC-170187B, 2018-11-06

PHOTOGRAPHS OF EQUIPMENT UNDER TEST (EUT)

EQUIPMENT UNDER TEST:

Device:	MLA100
Serial Number:	0090718
Application:	Amplifier
FCC ID:	2ACTR-MLA100
Manufacturer:	RM Costruzioni Elettroniche srl
Address:	Via IV Novembre, 42 - Ponte della Venturina 40046 Alto Reno Terme (Bo) ITALY
Phone:	+39 393 9158778
Fax:	-

RELEVANT STANDARD(S): 47 CFR §§ 97.307, 97.317

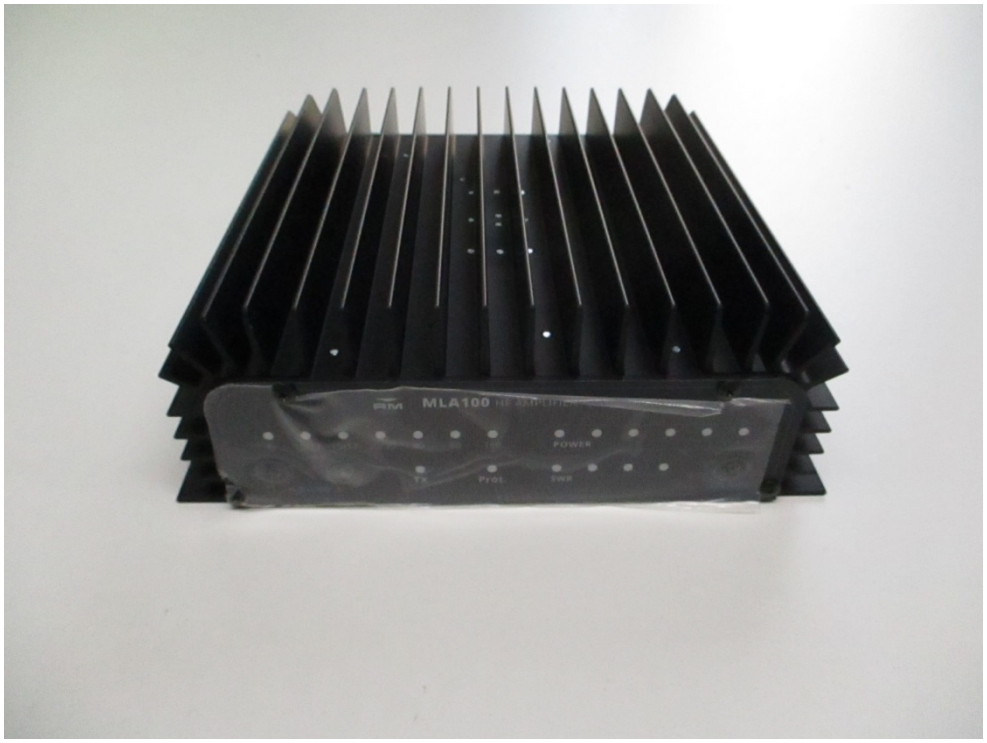

Photo A2-1: EUT, front


Photo A2-2: EUT, back

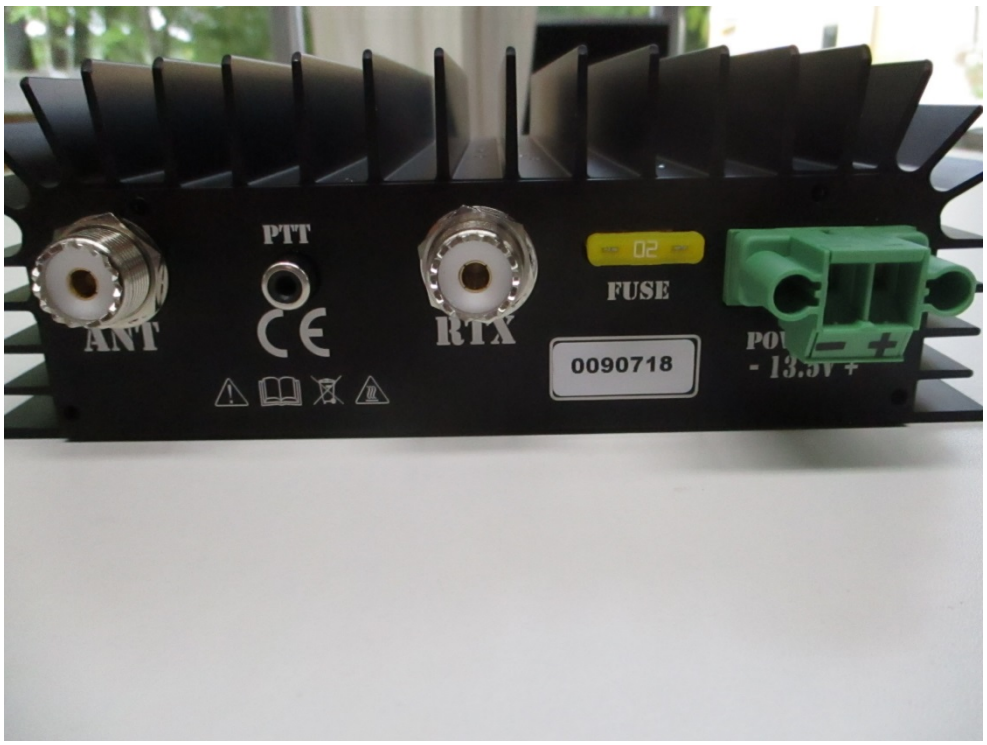

Photo A2-3: EUT, back, detail view

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Annex 3 to Test Report # EMCC-170187B, 2018-11-06

DESCRIPTION OF EQUIPMENT UNDER TEST (EUT), PORTS

EQUIPMENT UNDER TEST:

Device:	MLA100
Serial Number:	0090718
Application:	Amplifier
FCC ID:	2ACTR-MLA100
Manufacturer:	RM Costruzioni Elettroniche srl
Address:	Via IV Novembre, 42 - Ponte della Venturina 40046 Alto Reno Terme (Bo) ITALY
Phone:	+39 393 9158778
Fax:	-

RELEVANT STANDARD(S): 47 CFR §§ 97.307, 97.317

The following information was delivered by the customer:

ANT	50 Ω impedance Antenna Port (Antenna load on SOT239 connector)
RTX	50 Ω impedance RF input ports from exciter (on SOT239 connector)
Power IN	Vdc power input port by polarized connector
PTT signal	external enabling transmission (enabled from low trigger signal)

Annex 4 to Test Report # EMCC-170187B, 2018-11-06

DESCRIPTION OF EXCITER SETUP PROVIDED BY THE CUSTOMER

EQUIPMENT UNDER TEST:

Device:	MLA100
Serial Number:	0090718
Application:	Amplifier
FCC ID:	2ACTR-MLA100
Manufacturer:	RM Costruzioni Elettroniche srl
Address:	Via IV Novembre, 42 - Ponte della Venturina 40046 Alto Reno Terme (Bo) ITALY
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Fax:	-

RELEVANT STANDARD(S): 47 CFR §§ 97.307, 97.317

The following information was delivered by the customer:

MLA100 Test Configuration.

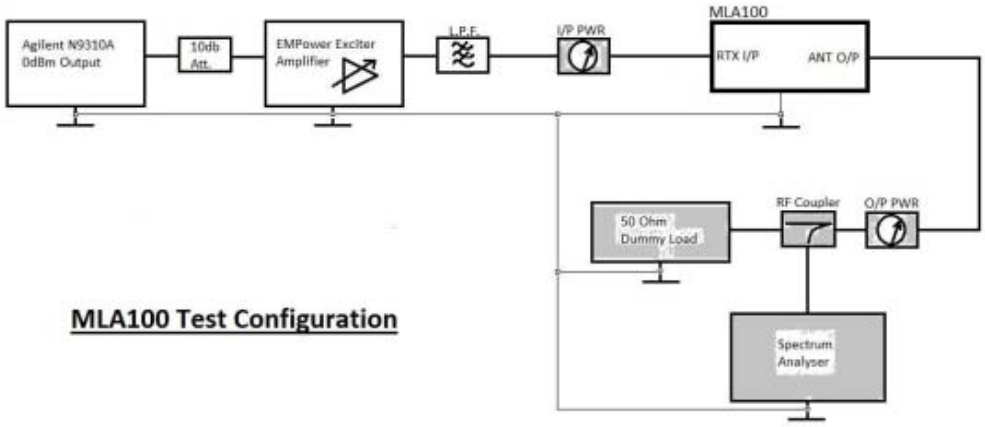
Packing List:

Aluminium Test platform
Agilent N9310A Signal Generator
10dB Attenuator (Input to Exciter Amplifier)
EMPower 2005-BBS0A3FKO Exciter Power Amplifier
10 Low Pass Filters for Output of Exciter for:
- 160m (1.900 MHZ Test Freq.)
- 80m (3.650 MHz Test Freq.)
- 40m (7.100 MHz Test Freq.)
- 30m (10.125 MHz Test Freq.)
- 20m (14.175 MHz Test Freq.)
- 17m (18.168 MHz Test Freq.)
- 15m (21.225 MHz Test Freq)
- 12m (24.945 MHz Test Freq.)
- 10m (28.850 MHz Test Freq.)
- 6m (52.000 MHz Test Freq.)

1x coaxial cable RG142 34cm N-N Signal Generator O/P to 10dB Attenuator
1x coaxial cable RG142 51cm N-N Output of Exciter amplifier to input external LP Filter
1x coaxial cable RG142 53cm N-PL259 Filter O/P to Amplifier RTX Input
1x coaxial cable RG223 94cm N-PL259 Amplifier O/P ANT 1 to Dummy Load
2x PL259 to N Female Adaptor
2x spare coaxial cable RG223 N-Type 34.5cm
1x spare coaxial cable RG142 N-Type 53cm
MLA100 Amplifier Without Fan s/n: 0090718
MLA100 Amplifier With Fan s/n: 0170718
RM SPS1050 50A 13.6V DC power supply
MLA100 DC Power lead 75cm

Note:
It was understood that the power measurement instruments, directional coupler and dummy load / High Power attenuator will be provided by the test house. The typical set up is shown below in the photographs together with a simple block diagram.

Fig.1



MLA100 Test Configuration

Photo 1.

Front Panel Connections

Photo 2.

Rear view

The Agilent N9310A signal generator set to 0dBm output, no modulation, at the chosen test frequency.

The Empower 2005-BBS0A3FKO should be set to minimum gain. It should also have a 10dB attenuator fitted to the input for protection against excessive input power. Connections are shown in Photo 1.

Depending on the test frequency the corresponding Low Pass Filter should be selected, they are all clearly labelled, one for each of the corresponding amateur radio bands, they have an IN and OUT port. IN connected to the output of the exciter amplifier and OUT connected to RTX input of the MLA100 amplifier under test.

Output exciter power is regulated by the gain adjustment on the front panel. The MLA100 requires 5W of input drive on all bands. The output of the signal generator should remain at 0dBm.

The MLA100 amplifier under test should be connected as shown in the block diagram, Fig 1. RF Drive input from the output of the corresponding external low pass filter from the exciter amplifier to the RTX input of the MLA100. The output connector ANT connected to output power

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measurement device, directional coupler etc. (50 Ohm impedance for all RF connections). A suitable Power supply and DC cable has been provided. (RM SPS1050)

When the MLA100 is connected in circuit, and switched off, it will just bypass any incoming signal from the RTX input connector to the ANT output connector.

The MLA100 does not require a PTT input control from the exciter in order to amplify the incoming signal, so the PTT input connector may be ignored. (It is used only to reduce RF switching times with certain types of modulation such as CW and SSB).

The amplifier under test (MLA100) should be switched on from the front panel 'ON/OFF' switch. By pressing and holding the 'On/Off' button for about 1 second. A short self test ensues after which time the amplifier will be in ready condition. As soon as RF Appears on the RTX input the amplifier will amplify the input signal. Band selection is automatic so it is not required to manually select the correct filter, however if desired this can be done by using the Band left '<' and right '>' keys on the front panel.

The amplifier can remain in TX for a reasonable amount of time in order to make power reading / spectrum plots however it is not a full duty cycle amplifier so should not be left in transmission at full output for long periods of time if not required. The signal generator 'RF' ON and OFF button can be used to switch the RF output power on and off.

When a new frequency / band test is made it is only necessary to change the frequency of the generator and exchange the external filter for the exciter output. The MLA100 can be simply switched off if any input power adjustment is necessary. Press the ON / OFF button for about 2 seconds to switch off.

The user manual of the MLA100 amplifier has been included for any additional information required and for explanation of any error condition from incorrect operation.

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