EMI TEST REPORT

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FOR RIVERDI HB, IPS 5.0" LCD SERIES

Rev.1.1
2021-10-20

The EMI test report applies to below Riverdi HB, IPS 5.0” series:

PRODUCT NAME	DESCRIPTION
RVT50HQTNWC00-B	HB, IPS, 5.0”, 850cd/m², RGB, uxTouch, Optical bonding
RVT50HQTNWC00	HB, IPS, 5.0”, 800cd/m², RGB, uxTouch, Air bonding
RVT50HQTNWCA0	HB, IPS, 5.0”, 800cd/m², RGB, aTouch, Air bonding
RVT50HQTFWCA0	HB, IPS, 5.0”, 800cd/m², RGB, aTouch, Air bonding, Metal frame

1. REVISION RECORD

REV NO.	REV DATE	CONTENTS	REMARKS
1.0	2021-08-02	Initial Release	
1.1	2021-10-20	Update the test results after the second round EMI test in a laboratory	

2. CONTENTS

3. SUMMARY OF TEST RESULT

TEST ITEM	NORM APPLIED	Result
RADIATED EMISSION 30-1000 MHz	EN 55032 (CISPR32). Radiated emission 30-1000 MHz (EMI)	Pass

Date of Test: 18/10/2021

EMC Lab: RADMOR S.A., Gdynia.

4. GENERAL INFORMATION

4.1 Description of EUT

PRODUCT NAME	RVT50HQTNWC00
TEST VOLTAGE	Battery 6V

Note. All test was performed on RVT50HQTNWC00. But results applied for every module within this line: RVT50HQTNWC00-B, RVT50HQTNWCA0, RVT50HQTFWCA0, RVT50HQTNWC00.

4.2 Description of EUT peripheral

The 50BT817 (display controller board) and Revelation Board (host controller board) designed by Riverdi were used to drive RVT50HQTNWC00 during the EMI test.

50BT817, as the main board of Riverdi EVE4 IPS 5.0" series, applies Bridgetek's BT817Q chip, which is the most powerful and intelligent graphics controller.

It features a low EMI design, QSPI/SPI interface, RiBUS connector, built-in flash memory, and audio amplifier.

Learn more about EVE4 solutions here or browse the EVE4 IPS 5.0" series directly here.

The following EUT operation modes were tested:

Mode A:

The 50BT817 was assembled with RVT50HQTNWC00 and connected with the Revelation Board via RiBUS.

During the test, the Revelation Board keeps transferring data to 50BT817 via RiBUS with full SPI speed at 6 MHz.

Animated pictures were presented on the screen.

Mode B:

The images were generated by the Revelation Board.

During the test, the Revelation Board was disconnected to eliminate the radiated emission from it.

The RVT50HQTNWC00 connected with 50BT817 was powered via RiBUS, and a non-animated picture was presented from the internal BT817Q memory.

4.3 Measuring device and test settings

EQUIPMENT	MODEL	VERSION
EMI test receiver	Rohde & Schwarz ESW-44	1.72 SP1

Meas BW: 120000,000000 Hz	Filter Type: Quasipeak	Meas Time: 1,000000 s	Center Freq: 221100000,000000 Hz
Attenuation: 0,000000 dB	Auto Range: On	Auto Preamp: On	Preamp: On
Preselector: On	Filter Split: Off	Notch Filter 1: Off	Notch Filter 2: Off
Input: 1 DC			

5. TEST RESULTS

5.1 The test result of Mode A:

Test condition

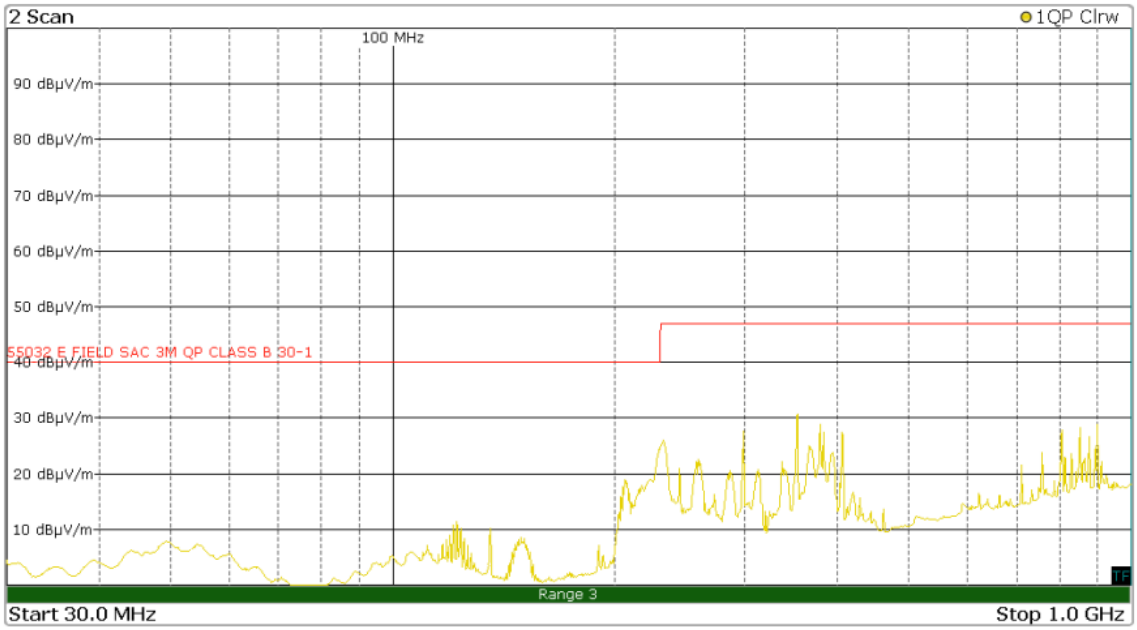
Power supply: Battery 6 V

External oscillator: 12.00MHz

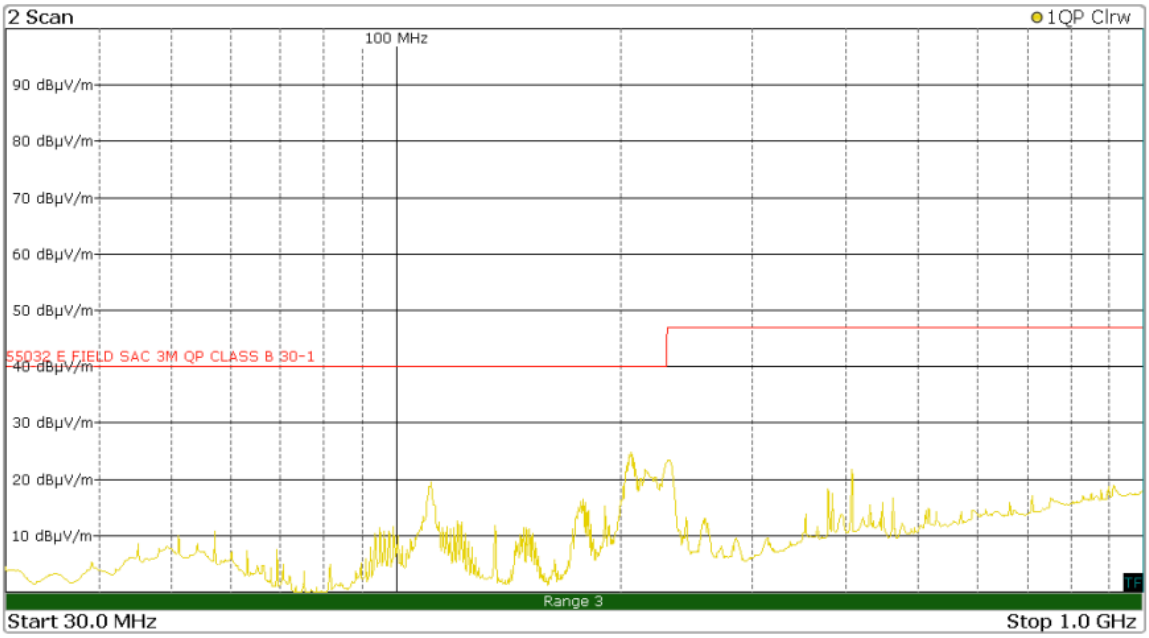
PCLK: 25.0MHz

Device and test settings: Same settings as subchapter 4.3 presented.

Horizontal:



Vertical:



5.2 The test result of Mode B:

Test condition

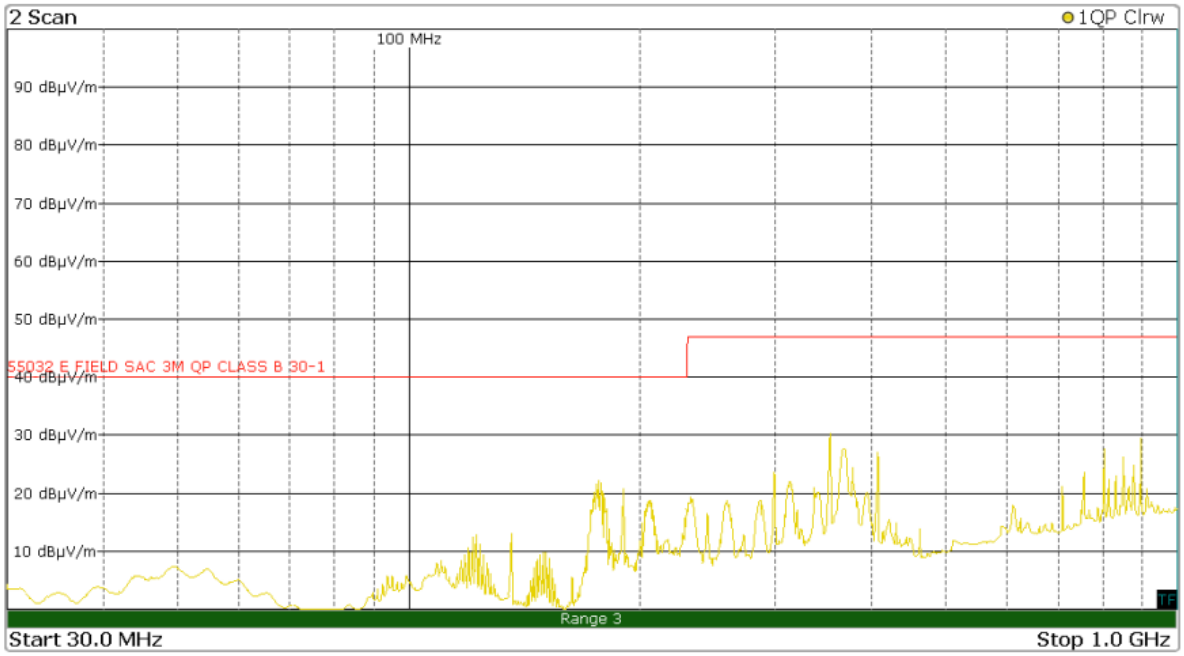
Power supply: Battery 6 V

External oscillator: 12.00MHz

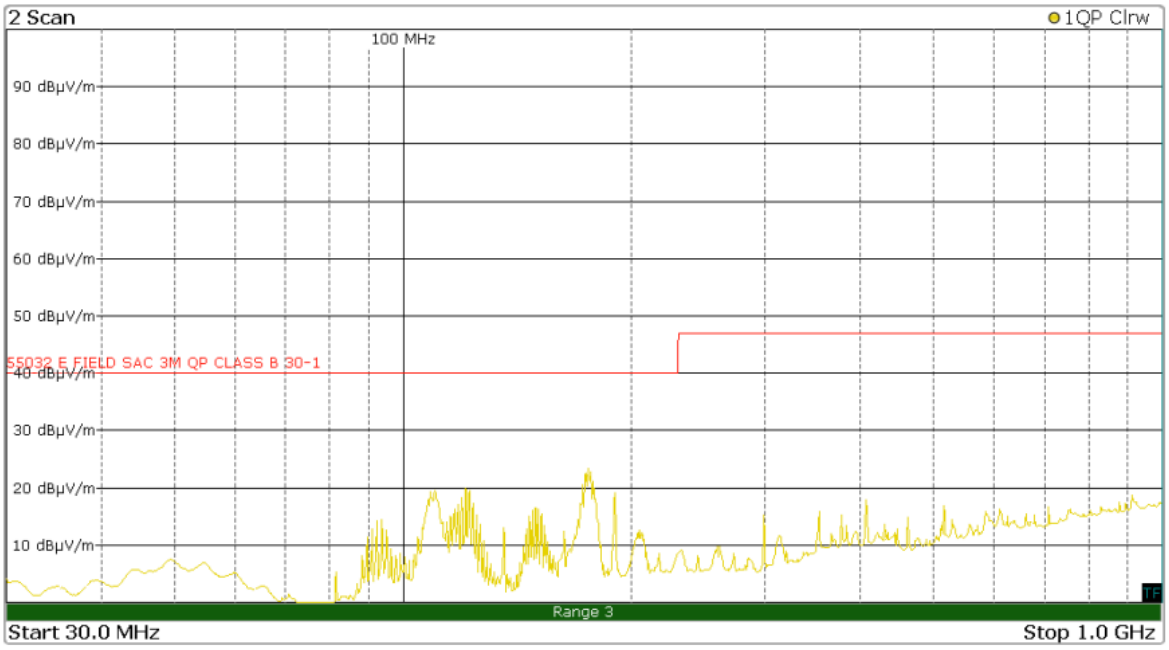
PCLK: 25.0MHz

Device and test settings: Same settings as subchapter 4.3 presented.

Horizontal:



Vertical:



6. Photos

Figure 1. Radiation Emission 30-1000MHz Test Back View

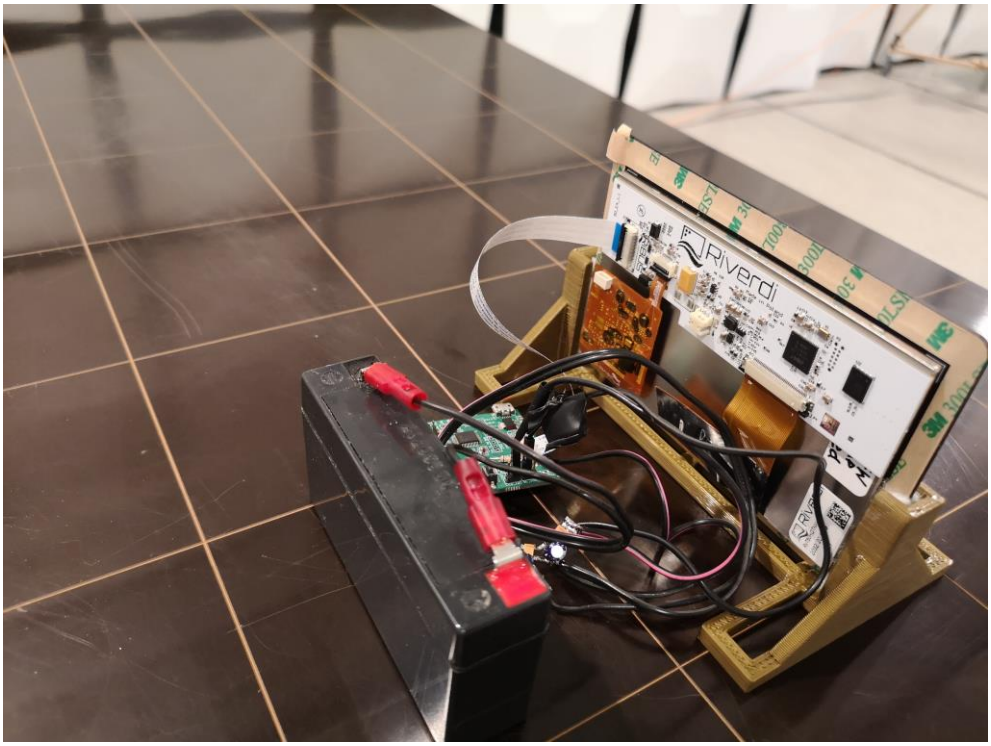


Figure 2. Radiation Emission 30-1000MHz Test Front View

7. Summary

The test results confirmed the low electromagnetic emissions of Riverdi HB, IPS 5.0” displays, even when displaying dynamic pictures.

Riverdi HB, IPS 5.0” displays have undergone EMI compliance self-tests and performed well at specified EMI limits.

In consequence, Riverdi HB, IPS 5.0” displays will not impact the environment due to the very low emission levels measured.