

RF EXPOSURE EVALUATION

FCC ID: 2AADR-SN08HD1B

Report No. : SSP25010190-5E

Applicant : HannStar Display Corp.

Product Name : Lumo7.8 inch Paper Tablet

Model Name : SN08HD1B
FCC 47 CFR §1.1310
FCC 47 CFR §2.1093

Test Standard : KDB 447498 D01 General RF Exposure Guidance v06

Date of Issue : 2025-01-16




Shenzhen CCUT Quality Technology Co., Ltd.

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This test report is limited to the above client company and the product model only. It may not be duplicated without prior permitted by Shenzhen CCUT Quality Technology Co., Ltd.

Test Report Basic Information

Applicant:	HannStar Display Corp.
Address of Applicant:	4F., No.15, Ln. 168, Xingshan Rd., Neihu Dist., Taipei City 11469, Taiwan
Manufacturer:	HannStar Display Corp.
Address of Manufacturer:	4F., No.15, Ln. 168, Xingshan Rd., Neihu Dist., Taipei City 11469, Taiwan
Product Name:	Lumo7.8 inch Paper Tablet
Brand Name:	HANNspree
Main Model:	SN08HD1B
Series Models:	-
Test Standard:	FCC 47 CFR §1.1310 FCC 47 CFR §2.1093 KDB 447498 D01 General RF Exposure Guidance v06
Date of Test	2025.01.10-2025.01.16
Test Result:	PASS
Tested By	<u>Lorzix Luo</u> (Lorzix Luo)
Reviewed By:	<u>Lieber Ouyang</u> (Lieber Ouyang)
Authorized Signatory:	<u>Lahm Peng</u> (Lahm Peng)



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Revision History

Revision	Issue Date	Description	Revised By
V1.0	2025.01.16	Initial Release	Lahm Peng

1. General Information

1.1 Product Information

Product Name:	Lumo7.8 inch Paper Tablet
Trade Name:	HANNSpree
Main Model:	SN08HD1B
Series Models:	-
Rated Voltage:	DC 5V/2.0A
Power Adapter:	N/A
Battery:	3.85V/3000mA
Hardware Version:	WT-G78-Y-6789-BED-UMCP-MB-V1.0-20240729
Software Version:	1B101F_Pro_V1.0_20241102
Note 1: The test data is gathered from a production sample, provided by the manufacturer.	

Wireless Specification	
Wireless Standard:	Bluetooth BR/EDR
Operating Frequency:	2402MHz ~ 2480MHz
RF Output Power:	0.42dBm
Number of Channel:	79
Channel Separation:	1MHz
Modulation:	GFSK, Pi/4 DQPSK, 8DPSK
Antenna Gain:	-0.82dBi
Type of Antenna:	Integral Antenna
Wireless Standard:	Bluetooth BLE
Operating Frequency:	2402MHz ~ 2480MHz
RF Output Power:	2.07dBm
Number of Channel:	40
Channel Separation:	2MHz
Modulation:	GFSK
Antenna Gain:	-0.82dBi
Type of Antenna:	Integral Antenna
Wireless Standard:	802.11b/g/n
Operating Frequency:	2412MHz ~ 2462MHz for 802.11b/g/n(HT20) 2422MHz ~ 2452MHz for 802.11n(HT40)
RF Output Power:	12.99dBm
Number of Channel:	11
Channel Separation:	5MHz

Modulation:	CCK, OFDM, QPSK, BPSK, 16QAM, 64QAM
Antenna Gain:	-0.82dBi
Type of Antenna:	Integral Antenna
Wireless Standard:	802.11a(HT20) 802.11n(HT20/HT40) 802.11ac(VHT20/VHT40/VHT80)
Operating Frequency:	802.11a/n/ac(HT/VHT20): U-NII Band 1: 5180MHz to 5240MHz U-NII Band 3: 5745MHz to 5825MHz 802.11n/ac(HT/VHT40): U-NII Band 1: 5190MHz to 5230MHz U-NII Band 3: 5755MHz to 5795MHz 802.11ac(HT/VHT80): U-NII Band 1: 5210MHz U-NII Band 3: 5775MHz
Number of Channel:	802.11a/n/ac(HT/VHT20): 4 for Band 1, 5 for Band 4 802.11n/ac(HT/VHT40): 2 for Band 1, 2 for Band 4 802.11ac(VHT80): 1 for Band 1, 1 for Band 4
Modulation:	OFDM(BPSK, QPSK, BPSK, 16QAM, 64QAM, 256QAM)
Antenna Gain:	0.74dBi
Type of Antenna:	Integral Antenna
Type of Device:	<input checked="" type="checkbox"/> Portable Device <input type="checkbox"/> Mobile Device <input type="checkbox"/> Modular Device

1.2 Compliance Standards

Compliance Standards	
FCC CFR 47 part1 1.1310	Radio frequency radiation exposure limits.
FCC CFR 47 part2 2.1093	Radio frequency radiation exposure evaluation: portable devices
FCC KDB 447498 D01 General RF Exposure Guidance v06	Mobile and Portable Device, RF Exposure, Equipment Authorization Procedures.

1.3 Test Facilities

Laboratory Name:	Shenzhen CCUT Quality Technology Co., Ltd. 1F, Building 35, Changxing Technology Industrial Park, Yutang Street, Guangming District, Shenzhen, Guangdong, China
CNAS Laboratory No.:	L18863
A2LA Certificate No.:	6893.01
FCC Registration No:	583813
ISED Registration No.:	CN0164
All measurement facilities used to collect the measurement data are located at 1F, Building 35, Changxing Technology Industrial Park, Yutang Street, Guangming District, Shenzhen, Guangdong, China.	

2. RF EXPOSURE EVALUATION

2.1 Limit

According to KDB447498 D01 General RF Exposure Guidance v06 Section 4.3.1 Standalone SAR test exclusion considerations: “Unless specifically required by the published RF exposure KDB procedures, standalone 1-g head or body and 10-g extremity SAR evaluation for general population exposure conditions, by measurement or numerical simulation, is not required when the corresponding SAR Test Exclusion Threshold condition, listed below, is satisfied. These test exclusion conditions are based on source-based time-averaged maximum conducted output power of the RF channel requiring evaluation, adjusted for tune-up tolerance, and the minimum test separation distance required for the exposure conditions.²² The minimum test separation distance is determined by the smallest distance from the antenna and radiating structures or outer surface of the device, according to the host form factor, exposure conditions and platform requirements, to any part of the body or extremity of a user or bystander (see 5) of section 4.1). To qualify for SAR test exclusion, the test separation distances applied must be fully explained and justified by the operating configurations and exposure conditions of the transmitter and applicable host platform requirements, typically in the SAR measurement or SAR analysis report, according to the required published RF exposure KDB procedures. When no other RF exposure testing or reporting is required, a statement of justification and compliance must be included in the equipment approval, in lieu of the SAR report, to qualify for the SAR test exclusion. When required, the device specific conditions described in the other published RF exposure KDB procedures must be satisfied before applying these SAR test exclusion provisions; for example, handheld PTT two-way radios, handsets, laptops & tablets etc.²³ “

$$\left[\frac{\text{max. power of channel, including tune-up tolerance, mW}}{\text{min. test separation distance, mm}} \right] \cdot \left[\sqrt{f \text{ (GHz)}} \right] \leq 3.0 \text{ for 1-g SAR and } \leq 7.5 \text{ for 10-g extremity SAR, where:}$$

- f (GHz) is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation
- The result is rounded to one decimal place for comparison
- 3.0 and 7.5 are referred to as the numeric thresholds in the step 2 below

The test exclusions are applicable only when the minimum test separation distance is ≤ 50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm according to 5) in section 4.1 is applied to determine SAR test exclusion.

2.2 Evaluation Result

Band/Mode	f(GHz)	Evaluation Distance (mm)	RF Output Power (dBm)	Tolerance (dBm)	Max. Tune-up Power(dBm)	Calc. thresholds	SAR Test Exclusion Threshold
BR+EDR	2.440	5	-0.40	0(± 1)	1	0.3933009	3.0
BLE	2.440	5	1.25	1(± 1)	2	0.4951365	3.0
2.4G WIFI	2.412	5	7.56	7(± 1)	8	1.9598311	3.0
5.1G WIFI	5190	5	6.14	6(± 1)	7	2.2835666	3.0
5.8G WIFI	5.775	5	6.99	6(± 1)	7	2.4088291	3.0

Remark: The BT and WIFI can not transmit at the same time. No need consider simultaneous transmission.

2.3 Conclusion

The measurement results comply with the FCC Limit per 47 CFR 2.1093 for the uncontrolled RF Exposure and SAR Exclusion Threshold per KDB 447498 D01 v06. No SAR test is required.

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