

RF-EXPOSURE REPORT FCC 47 CFR Part 2.1093 RF-Exposure evaluation of portable equipment	
Report Reference No	G0M-2406-2604-TFC093PE-V03
Testing Laboratory	Eurofins Product Service GmbH
Address	Storkower Str. 38c 15526 Reichenwalde Germany
Accreditation	 A2LA Accredited Testing Laboratory, Certificate No.: 1983.01 FCC Test Firm Designation Number: DE0008 ISED Testing Laboratory site: 3470A
Applicant	Somnium Space LTD.
Address	159 High Street EN5 5SU Barnet England
Test Specification	According to FCC rules
Standard	FCC 47 CFR 2.1093
Non-Standard Test Method	None
Equipment under Test (EUT):	
Product Description	Head-Mounted Display / VR headset
Model(s)	VR1
Additional Model(s)	None
Brand Name(s)	Somnium
Hardware Version(s)	VR1
Software Version(s)	FW for radio chips: for nrf_fw_rev1 SHA256 hash for nrf_fw_rev1:F33AA5230BEDA4DA5F58087C1A13EEA29AB2300F8 58B75722C4571C297E7600A
FCC-ID	2BKF7-VR1BESTHMD
Test Result	PASSED

Possible test case verdicts:		
required by standard but not tested	N/T	
not required by standard	N/R	
test object does meet the requirement	P(PASS)	
test object does not meet the requirement	F(FAIL)	
Testing:		
Test Lab Temperature	20 °C - 30 °C	
Test Lab Humidity	25 % - 55 %	
Date of performance	2024-11-20	
Date of receipt of test item	See test sample identification table on page 7	
Report:		
Compiled by	Florian Voigt	
Tested by (+ signature) (Responsible for Test)	Florian Voigt	
Approved by (+ signature) (Senior Radio Expert)	Radwan Jaafar	
Date of Issue	2024-12-11	
Total number of pages	48	
General Remarks:		
The test results presented in this report relate only to the object tested. The results contained in this report reflect the results for this particular model and serial number. It is the responsibility of the manufacturer to ensure that all production models meet the intent of the requirements detailed within this report. This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory. The above equipment has been tested by Eurofins Product Service GmbH, and found compliance with the requirements of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's RF characteristics under the conditions specified in this report. Compliance of electromagnetic emission from electronic and electrical equipment with the basic restrictions usually is determined by measurements and, in some cases, calculation of the exposure level. If the electrical power used by or radiated by the equipment is sufficiently low, the electromagnetic fields emitted will be incapable of producing exposures that exceed the basic restrictions. Any relevant compliance assessment procedure which is consistent with the state of the art, reproducible and gives valid results can be used.		

For transmitters intended for use with more than one antenna configuration option, the combination of transmitter and antenna(s) which generates the highest available antenna power and/or average total radiated power shall be assessed.

Additional Comments:

RF-Exposure calculation is based on measurement results from reference documents.

VERSION HISTORY

Version History			
Version	Issue Date	Remarks	Revised By
01	2024-10-11	Initial Release	--
02	2024-10-29	Replaced document: G0M-2406-2604-TFC093PE-V01 Replaced by: G0M-2406-2604-TFC093PE-V02 Reason: - Update of reference document	St. Liebich
03	2024-12-11	Replaced document: G0M-2406-2604-TFC093PE-V02 Replaced by: G0M-2406-2604-TFC093PE01-V03 Reason: - Update of reference document - Add antenna information - Re-calculation	Florian Voigt

ABBREVIATIONS AND ACRONYMS

Acronyms	
Acronym	Description
EIRP	Equivalent Isotropic Radiated Power
ERP	Effective Radiated Power
EUT	Equipment Under Test
LPE	Low Power Exclusion

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1 Equipment (Test Item) Under Test

Description	Head-Mounted Display / VR headset			
Model	VR1			
Additional Model(s)	None			
Brand Name(s)	Somnium			
Sample Identification	EUT #	Sample-ID	Serial Number	Date of receipt
	EUT 1	49299	Prototype	2024-07-08
Hardware Version(s)	VR1			
Software Version(s)	FW for radio chips: for nrf_fw_rev1 SHA256 hash for nrf_fw_rev1:F33AA5230BEDA4DA5F58087C1A13 EEA29AB2300F858B75722C4571C297E7600A			
FCC ID	2BKF7-VR1BESTHMD			
Number of antenna ports	1			
Number of radios	2			
Radio SoC 1	Type	Multiprotocol Bluetooth 5.4 SoC		
	Model	NRF52840		
	Manufacturer	Nordic semiconductor		
	PCB position	U32		
Radio SoC 2	Type	Multiprotocol Bluetooth 5.4 SoC		
	Model	NRF52840		
	Manufacturer	Nordic semiconductor		
	PCB position	U31		
Antenna 1 (associated to radio 1)	Type	Integrated SMT antenna		
	Model	W3008		
	Manufacturer	Pulse Electronics		
	Gain	1.1 dBi (datasheet declaration)		
Antenna 2 (associated to radio 2)	Type	Integrated SMT antenna		
	Model	W3008		
	Manufacturer	Pulse Electronics		
	Gain	1.1 dBi (datasheet declaration)		
Supply Voltage	V _{NOM}	12 V DC via external AC/DC adaptor		
Dedicated AC/DC-Adaptor	Model	SDI36-12-DU		
	Vendor	CUI INC		
	Input	100-240 V / 50-60 Hz		
	Output	12 V DC		
Equipment type	End Product			
Environment	General public			
Use case	Body worn			

1.1 Photos – Equipment External



Front side view



Back side view



Right side view



Left side view

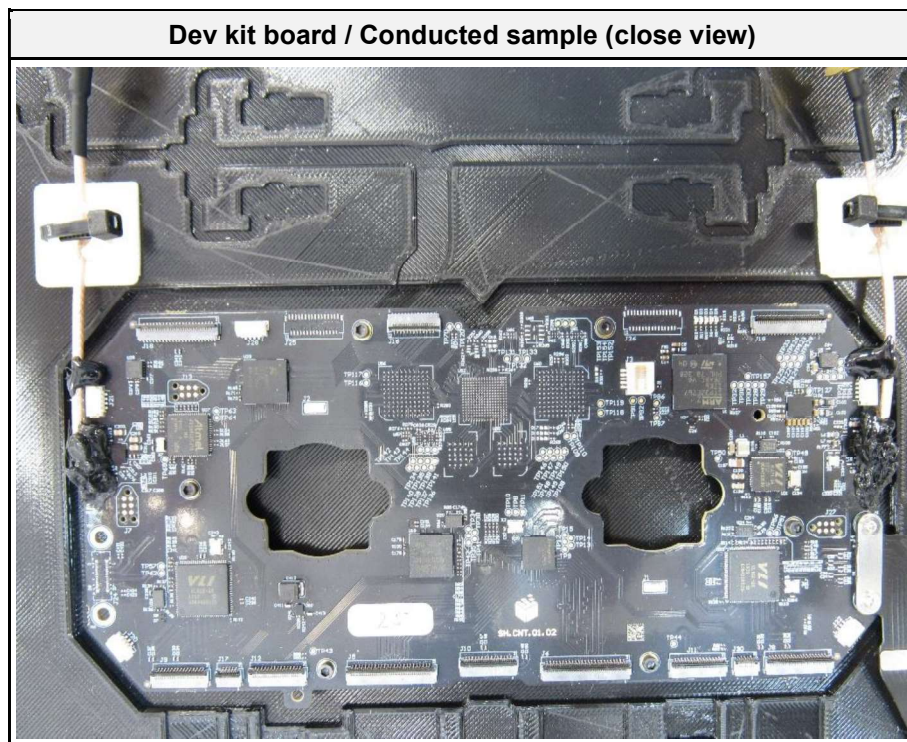
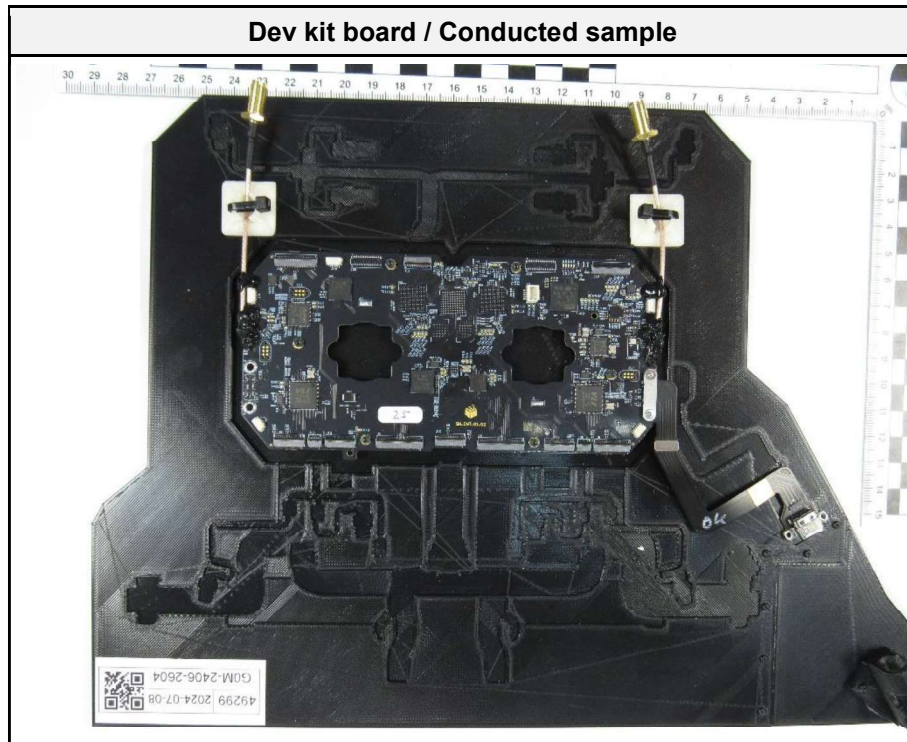


Perspective front side view



Perspective back side view





AC/DC Adaptor



AC/DC Adaptor label



VR1 cable A



VR1 cable B

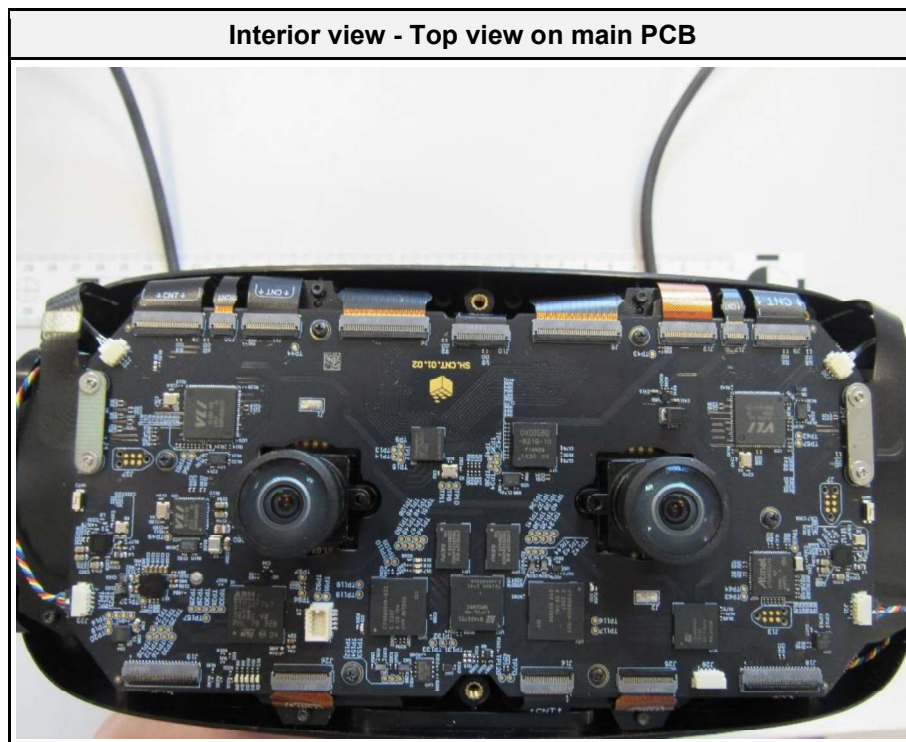
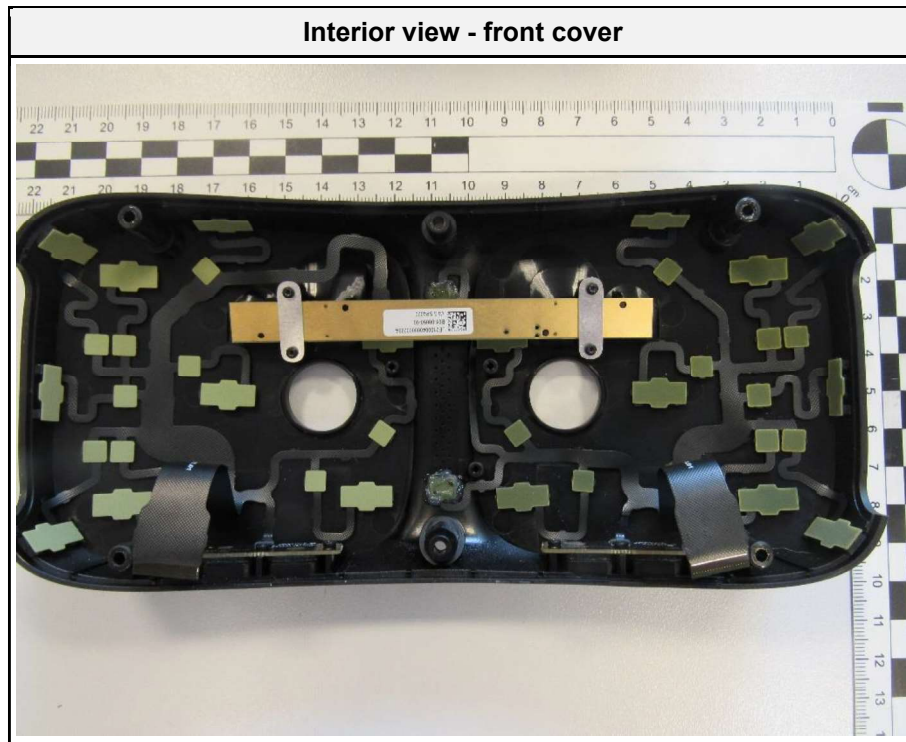


EUT with support equipment

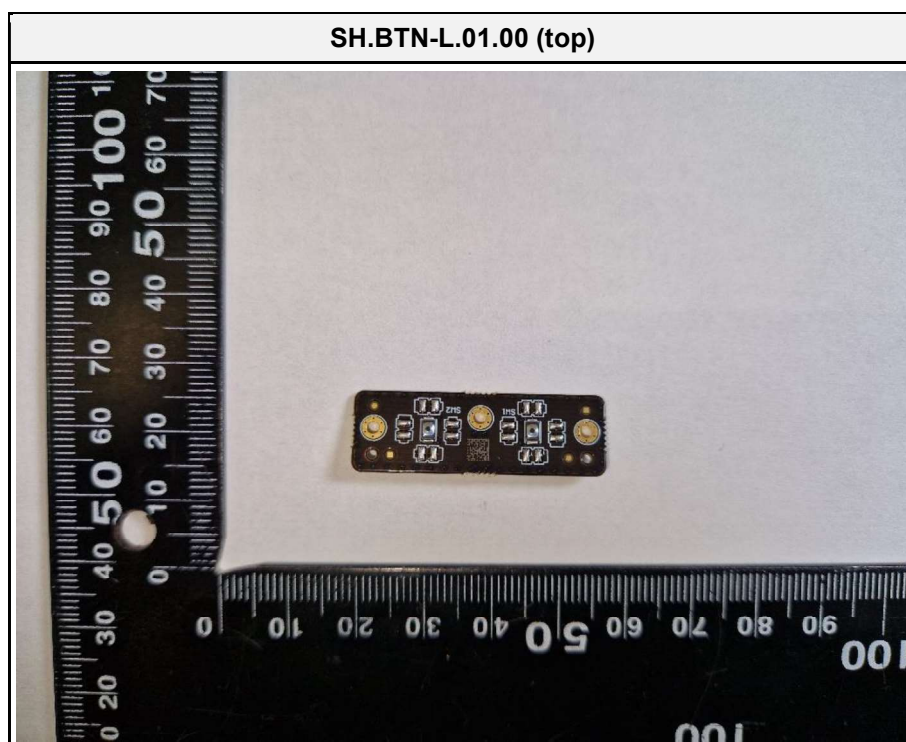
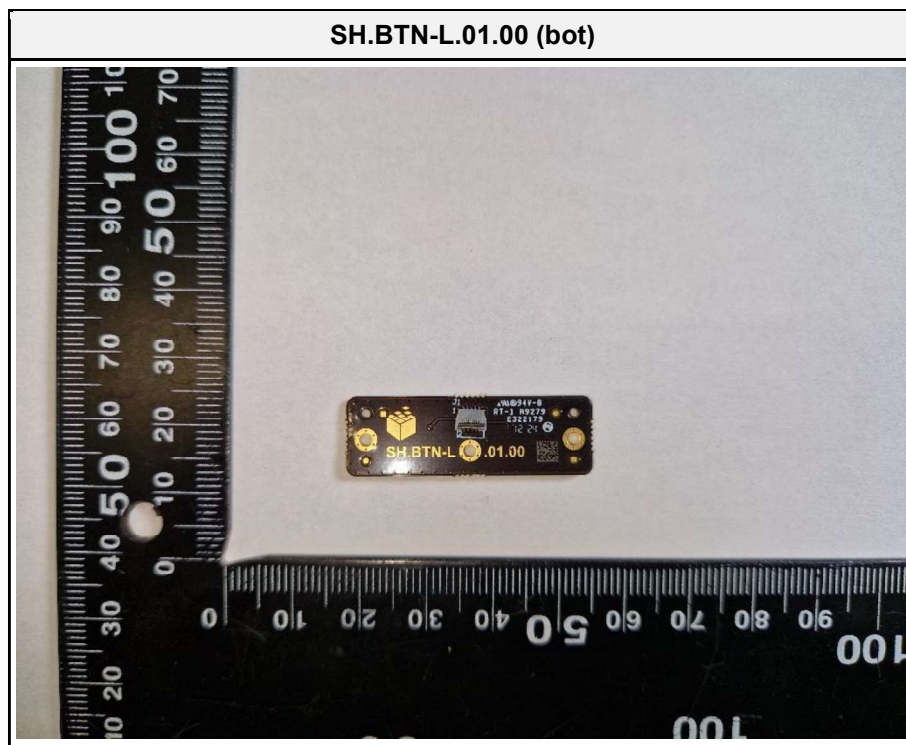


1.2 Photos – Equipment Internal

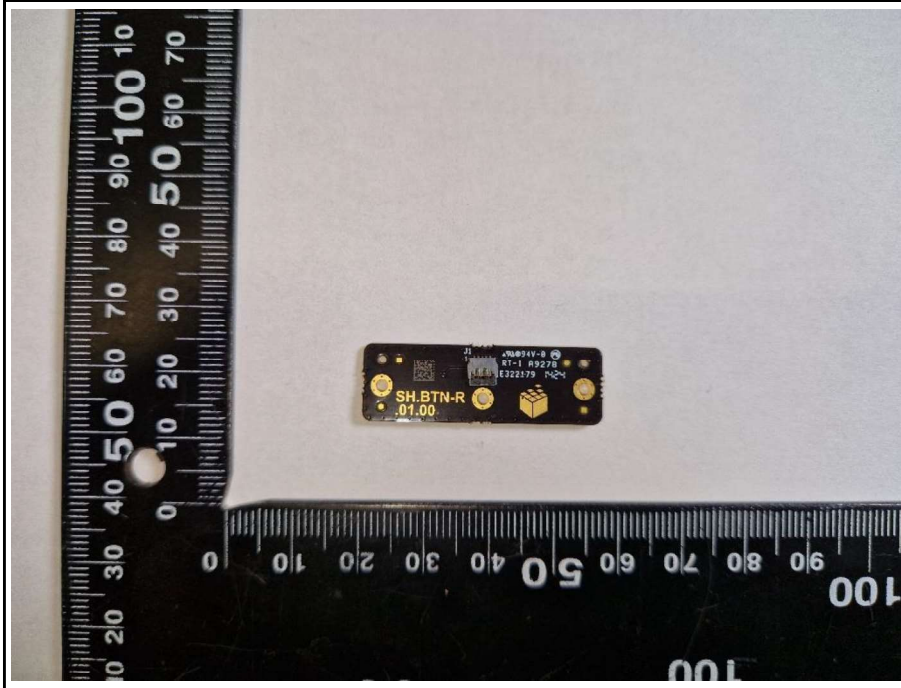
1.2.1 Internal photos made in laboratory



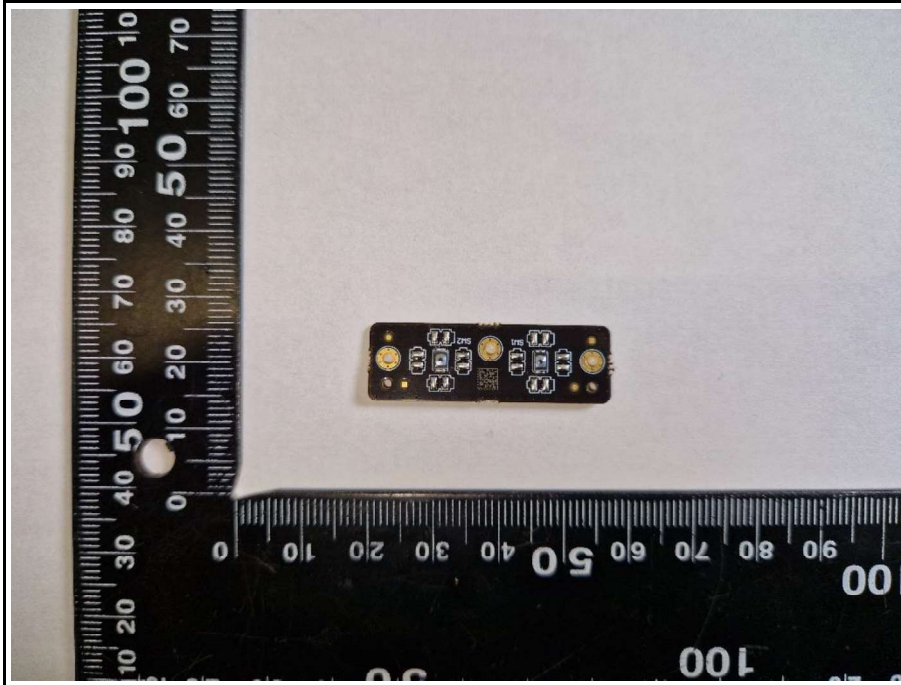
1.2.2 Internal photos provided by customer



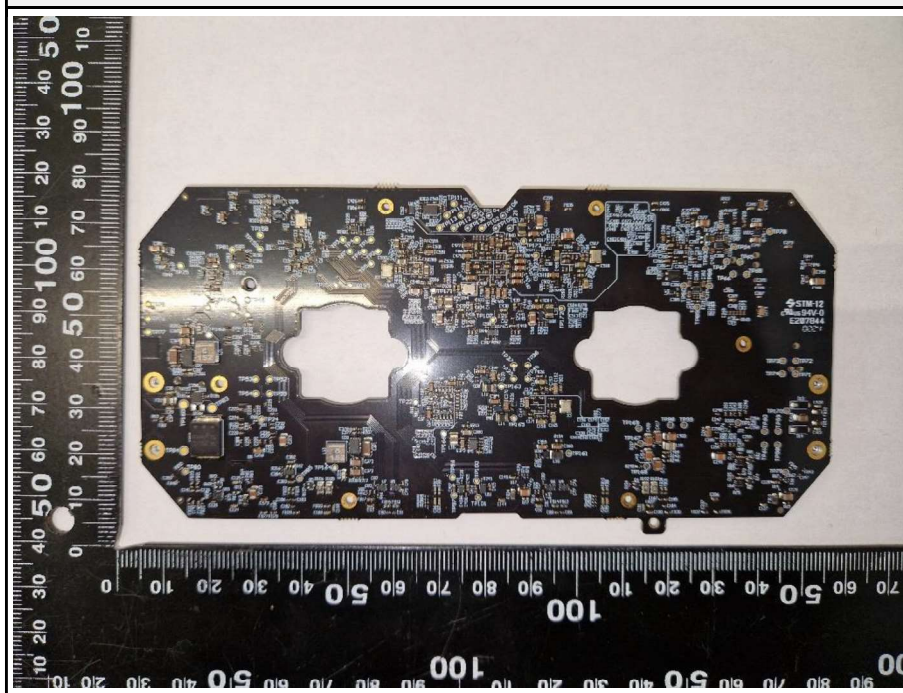
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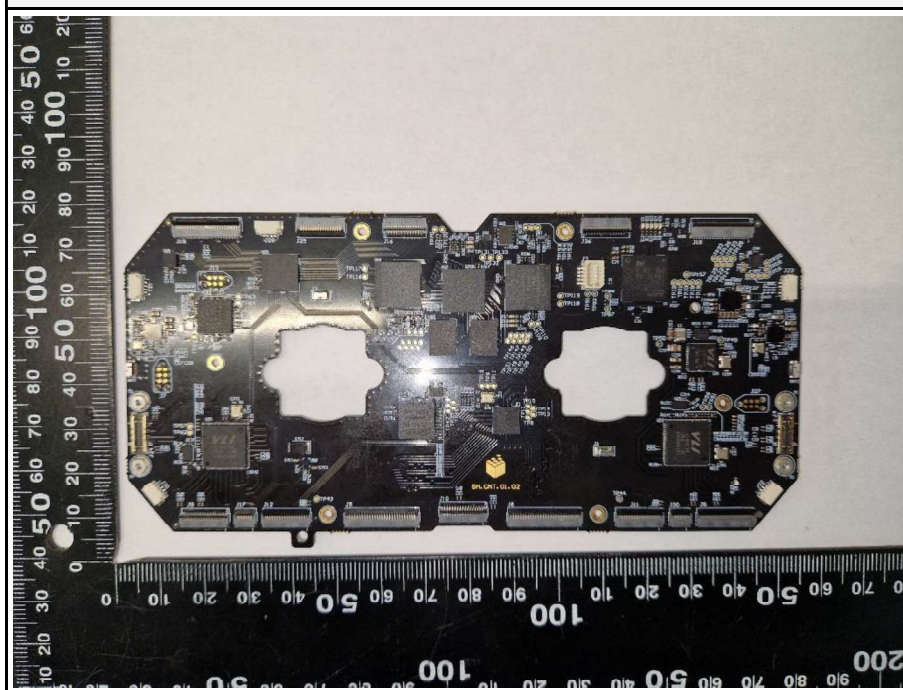
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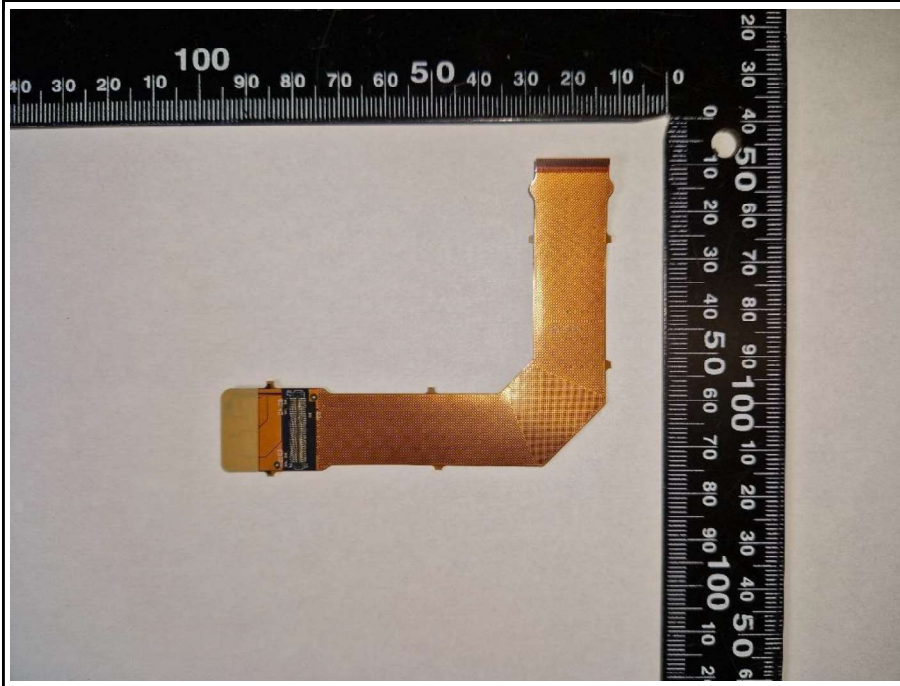
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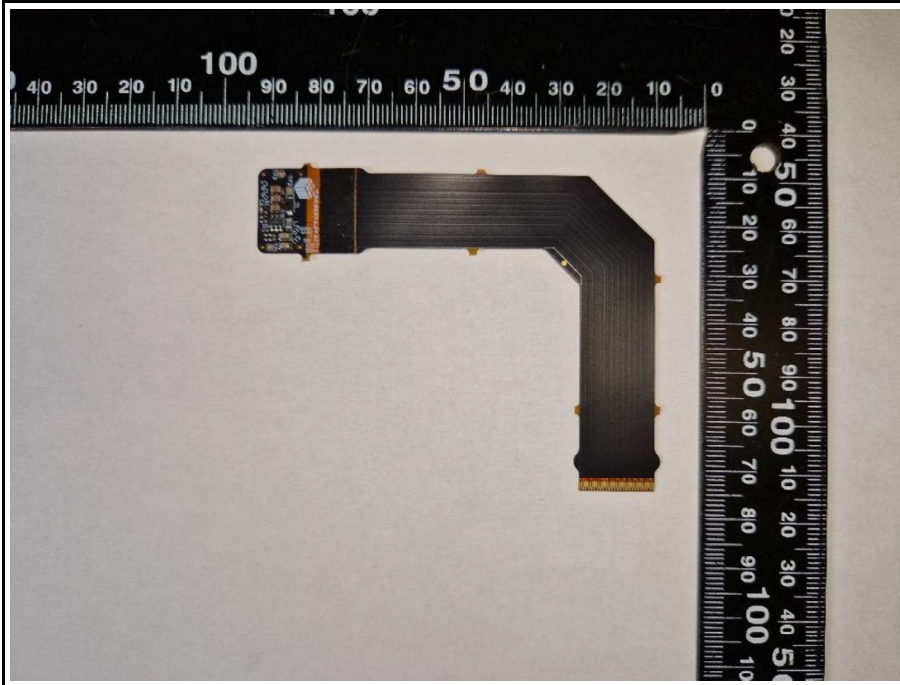
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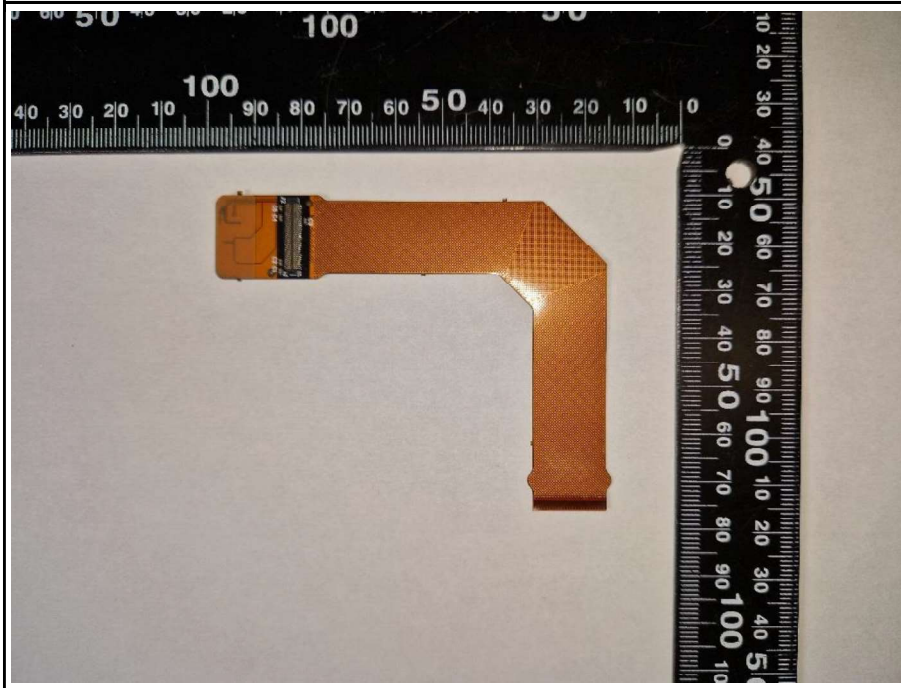
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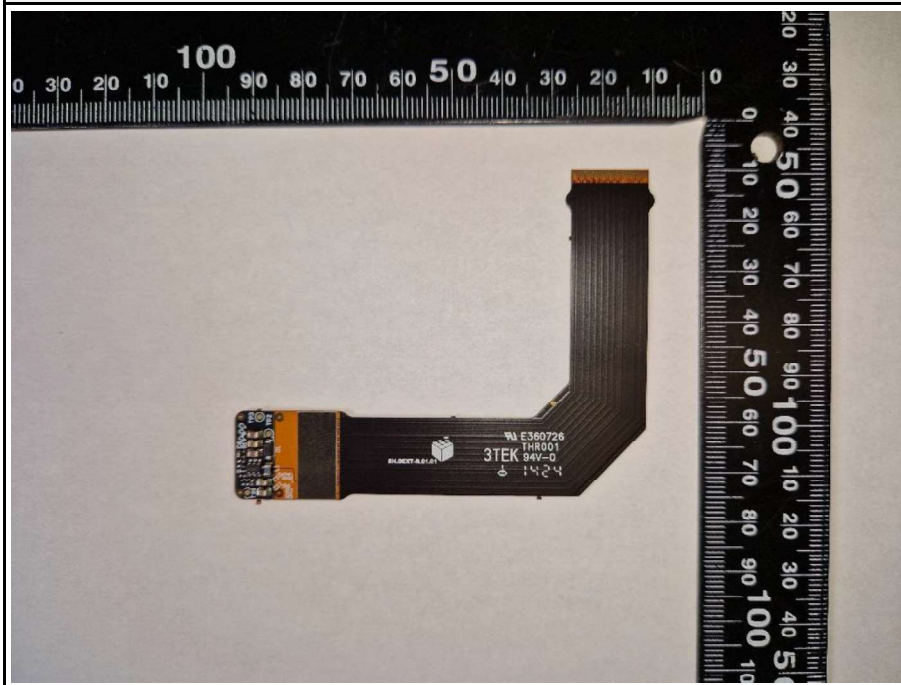
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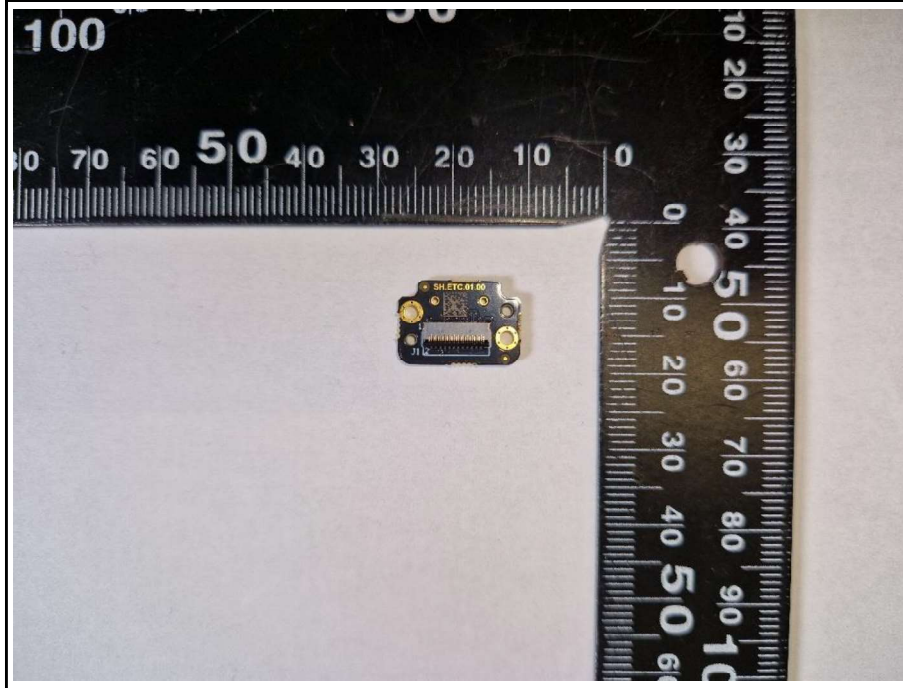
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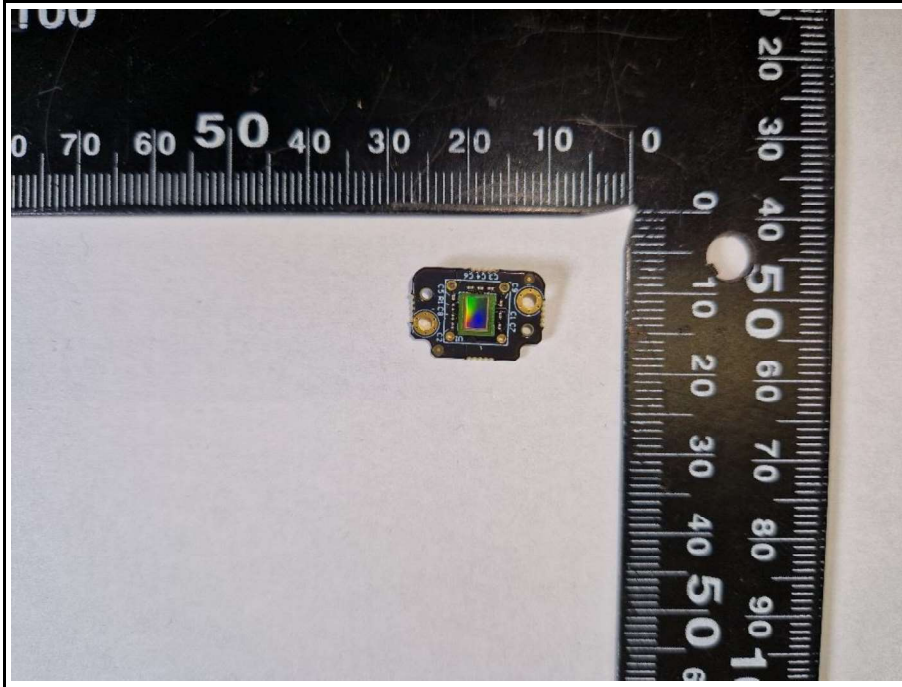
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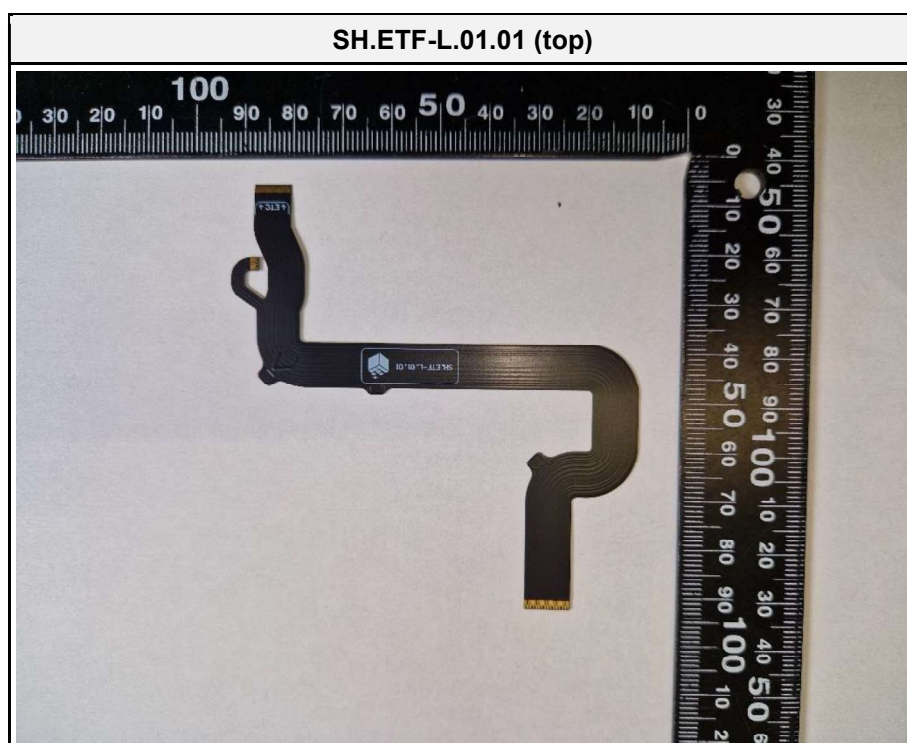
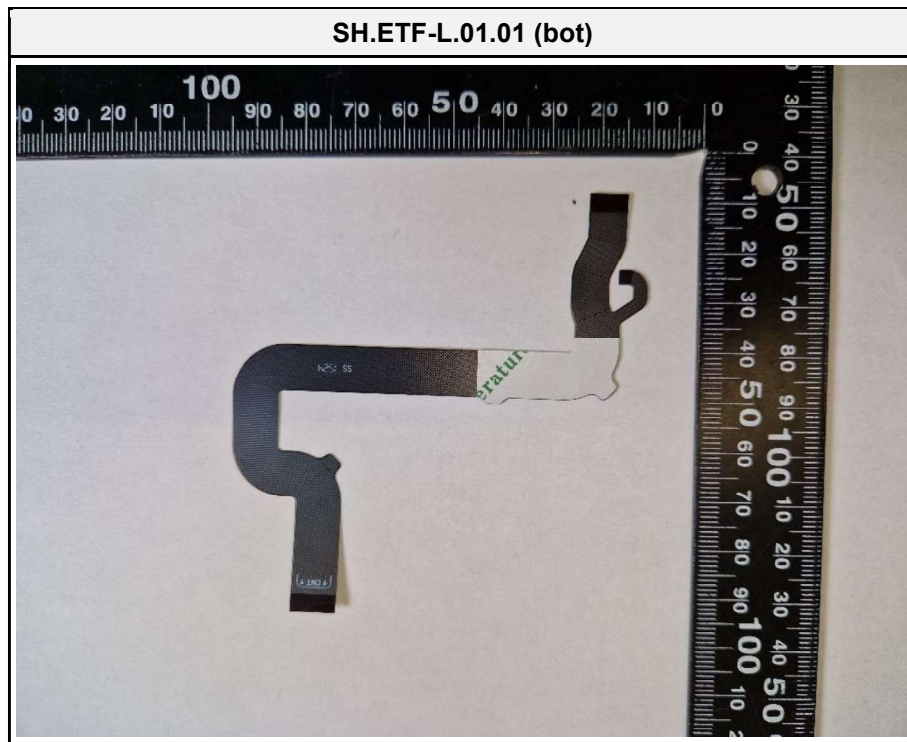


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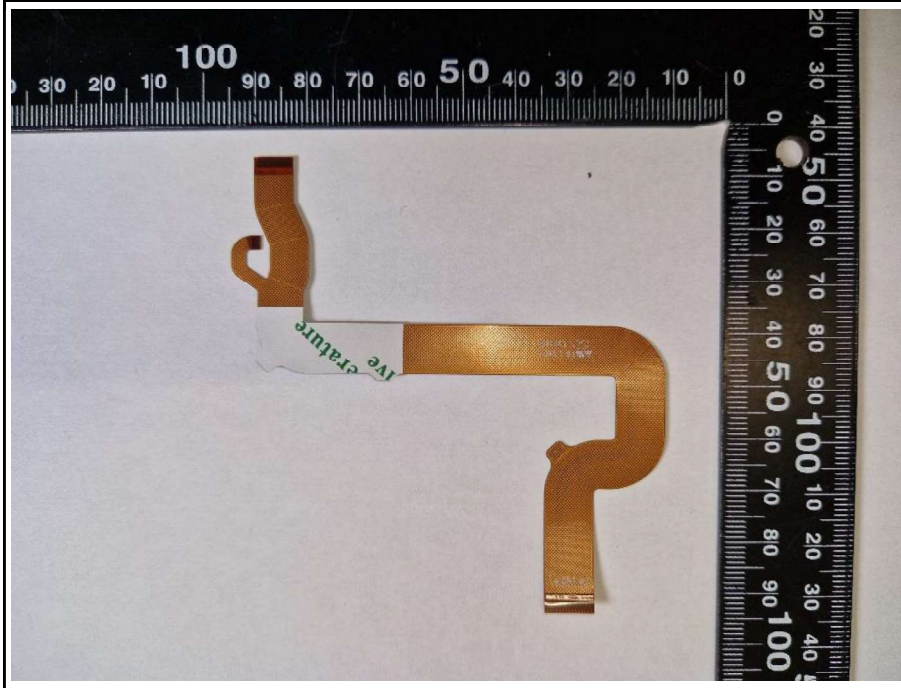


SH.ETC.01.00 (top)





SH.ETF-R.01.01 (bot)



SH.ETF-R.01.01 (top)

