

Antenna Specification
AUT (Antenna Under Test) Report of BHT-1408QUMWB

Revision Record	
△1	2024/10/29
△2	2024/11/01
△3	2024/11/08

Purpose

Measure the antenna gain of the test item based on the measurement value of a standard dipole antenna.

EUT : DWWB009 (RF module for BHT-1408QUMWB)

Antenna type : Inverted-F Antenna

Dimension Photo of DWWB009 :see Appendix. △2

Result

RF module	Antenna gain
DWWB009	Max. -1.6 dBi at. 2.426GHz

DENSO WAVE INCORPORATED
EDGE PRODUCTS BUSINESS UNIT ENGINEERING DIVISION 2
ENGINEERING DEPARTMENT 2

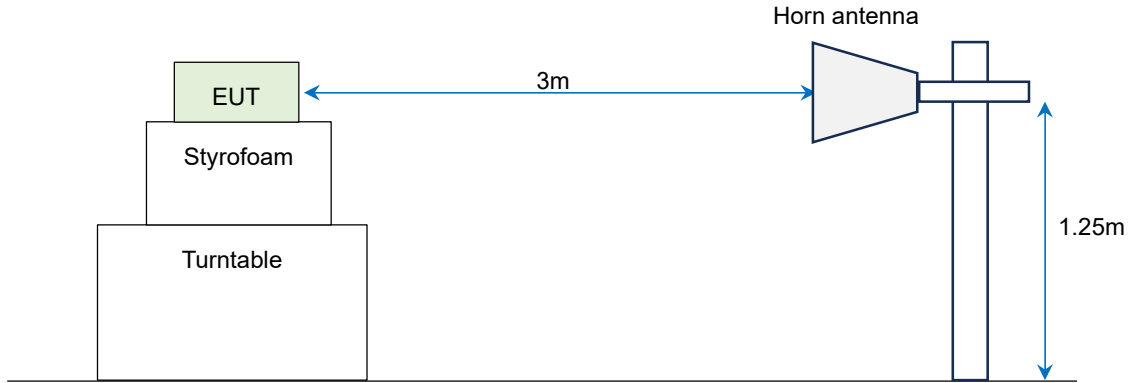
Approved	Test Engineer
H.Ohta	A.Ito
27. Sep. 2024	27. Sep. 2024

Location

DENSO WAVE INCORPORATED 1 Yoshiike Kusagi Agui-cho, Chita-gun, Aichi 470-2297
 Radio-frequency anechoic chamber ; TDK Corporation. S/N. DA-13092

Configuration

Due to confidentiality, no photos will be posted.



EUT and equipment

	Model	S/N	Calibration Date
EUT	DENSO WAVE ; DWWB009 (RF module for BHT-1408QUMWB)	J6-147	-
Network Analyzer	ANRITSU : MS46522B	2324101	June 23, 2023
Standard dipole antenna	ANRITSU : MA5612 B4	6200873467	June 23, 2023
Horn antenna	MFD BY DEVICE : ADP0020-1	0020-09066290065	June 23, 2023

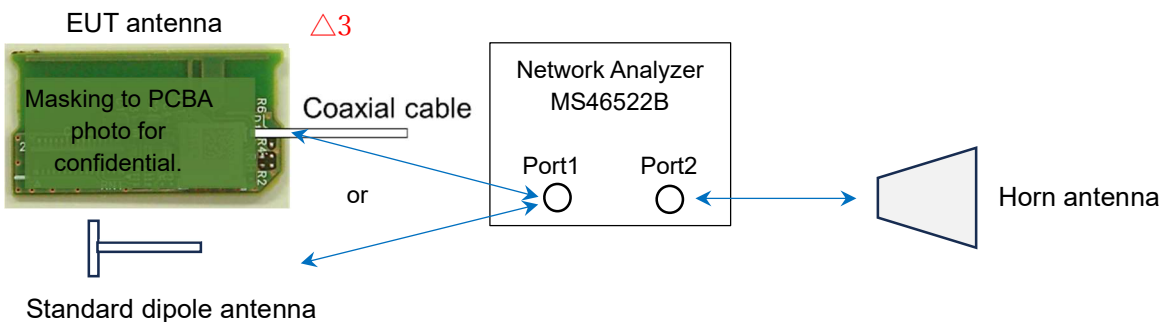
Temperature / Humidity

26 °C / 60 %RH

Procedure

Connect the EUT antenna or Standard dipole antenna to Port 1 of the network analyzer.

Connect the Horn antenna to Port 2 of the network analyzer.



Test Result

BHT	Top-Up Y-z direc.								Side-Up X-y direc.								Front-Up Z-x direc.							
	Hori.				Vert.				Hori.				Vert.				Hori.				Vert.			
Horn-Antenna	2.402 [GHz]	2.426 [GHz]	2.44 [GHz]	2.48 [GHz]	2.402 [GHz]	2.426 [GHz]	2.44 [GHz]	2.48 [GHz]	2.402 [GHz]	2.426 [GHz]	2.44 [GHz]	2.48 [GHz]	2.402 [GHz]	2.426 [GHz]	2.44 [GHz]	2.48 [GHz]	2.402 [GHz]	2.426 [GHz]	2.44 [GHz]	2.48 [GHz]	2.402 [GHz]	2.426 [GHz]	2.44 [GHz]	2.48 [GHz]
0°	-15.8	-13.0	-13.6	-16.8	-10.2	-12.6	-15.3	-14.6	-8.2	-10.2	-10.1	-10.7	-17.4	-16.3	-15.3	-14.6	-18.3	-14.9	-16.6	-34.8	-7.2	-8.7	-8.9	-10.6
15°	-27.9	-23.9	-21.9	-17.3	-9.9	-11.2	-11.4	-13.9	-14.2	-14.8	-13.7	-13.4	-19.5	-16.0	-17.1	-12.9	-9.9	-8.5	-7.7	-7.8	-8.3	-9.6	-10.1	-10.9
30°	-5.4	-4.2	-5.0	-8.0	-7.8	-8.8	-10.3	-10.6	-19.8	-18.5	-18.5	-18.8	-33.7	-32.8	-35.4	-21.3	-14.1	-13.5	-12.7	-11.0	-10.7	-12.5	-12.9	-15.6
45°	-3.7	-3.3	-4.2	-6.9	-10.6	-11.3	-11.6	-14.0	-14.1	-12.6	-11.3	-12.9	-23.4	-17.5	-16.6	-20.9	-9.7	-9.6	-9.2	-7.7	-7.5	-8.6	-8.6	-10.4
60°	-3.1	-2.9	-3.6	-5.4	-10.6	-11.2	-12.5	-13.2	-17.3	-16.3	-15.8	-22.0	-24.4	-17.5	-15.2	-19.4	-13.0	-11.9	-12.2	-13.3	-7.1	-9.0	-9.8	-10.5
75°	-2.4	-2.3	-3.0	-5.0	-12.0	-13.6	-13.6	-15.8	-15.9	-14.1	-14.5	-18.1	-24.6	-20.7	-19.3	-21.0	-12.9	-11.9	-13.0	-14.7	-7.1	-10.3	-12.3	-11.6
90°	-1.6	-1.6	-2.4	-4.4	-14.4	-15.3	-15.6	-17.4	-12.8	-12.4	-13.4	-16.6	-19.4	-18.5	-18.2	-19.1	-18.7	-14.5	-15.3	-17.0	-6.5	-9.9	-12.4	-10.5
105°	-1.9	-2.1	-2.7	-3.4	-13.5	-14.5	-15.4	-17.3	-14.4	-18.5	-19.3	-16.8	-12.3	-16.7	-16.3	-19.5	-12.8	-13.1	-15.0	-13.9	-9.5	-11.1	-13.7	-12.5
120°	-2.2	-2.1	-2.9	-3.7	-11.9	-12.5	-13.6	-16.0	-11.6	-11.6	-11.4	-11.1	-32.9	-31.7	-27.7	-20.7	-10.9	-10.7	-11.3	-13.0	-9.6	-10.4	-13.5	-11.2
135°	-3.7	-3.7	-4.5	-4.2	-9.4	-10.0	-10.7	-12.7	-10.2	-10.6	-12.0	-10.5	-24.0	-25.1	-29.4	-18.2	-13.1	-12.1	-12.6	-14.2	-8.2	-8.8	-9.8	-10.5
150°	-5.7	-5.2	-5.6	-5.8	-7.9	-7.7	-9.1	-11.3	-9.9	-10.8	-11.8	-10.2	-17.4	-16.9	-20.4	-14.3	-14.0	-11.8	-11.7	-12.1	-7.1	-7.3	-7.1	-9.8
165°	-8.2	-7.2	-7.4	-8.4	-7.3	-7.1	-8.3	-10.5	-8.0	-10.0	-9.8	-8.4	-12.9	-13.2	-16.3	-12.4	-13.8	-11.9	-12.8	-12.6	-6.7	-7.3	-8.1	-9.2
180°	-8.3	-7.2	-7.1	-8.0	-7.0	-7.0	-8.0	-9.7	-7.4	-8.4	-9.0	-8.2	-11.2	-11.7	-13.0	-11.2	-12.6	-13.9	-15.2	-11.1	-6.4	-7.4	-8.7	-10.0
195°	-11.4	-9.6	-9.1	-8.8	-7.4	-8.3	-9.7	-9.2	-8.9	-10.1	-10.8	-9.7	-8.9	-9.7	-11.1	-10.8	-15.9	-16.3	-16.1	-12.4	-8.4	-8.7	-9.3	-9.2
210°	-8.3	-7.5	-7.3	-8.5	-8.8	-10.4	-10.8	-9.3	-10.9	-12.7	-12.6	-12.5	-6.4	-6.9	-8.3	-9.0	-13.3	-14.4	-16.0	-13.6	-8.9	-10.4	-12.8	-12.3
225°	-6.5	-6.5	-7.0	-8.3	-9.6	-11.1	-11.5	-10.5	-12.2	-13.6	-13.9	-15.0	-5.3	-5.4	-6.5	-8.6	-12.0	-12.0	-13.5	-13.4	-8.0	-9.7	-11.1	-12.8
240°	-4.5	-4.8	-5.1	-6.2	-9.7	-11.7	-11.8	-10.8	-15.3	-16.6	-16.2	-17.5	-3.7	-3.9	-4.7	-6.4	-11.0	-11.7	-13.3	-12.9	-5.3	-7.3	-8.8	-9.5
255°	-3.5	-4.6	-5.7	-7.0	-10.9	-13.3	-13.7	-13.9	-21.0	-18.8	-22.2	-21.0	-3.8	-4.0	-4.9	-5.8	-19.9	-31.8	-24.3	-15.1	-2.9	-4.3	-5.2	-5.8
270°	-4.0	-5.3	-6.4	-8.5	-12.7	-15.7	-15.9	-16.1	-6.6	-6.6	-8.4	-9.7	-7.0	-7.1	-7.3	-7.2	-16.9	-25.5	-25.8	-15.7	-2.4	-3.1	-3.8	-5.0
285°	-5.2	-6.3	-7.4	-8.6	-14.4	-18.7	-18.2	-16.8	-5.4	-5.7	-6.2	-7.0	-10.3	-11.7	-11.5	-12.9	-16.6	-16.7	-19.9	-15.7	-4.8	-5.6	-6.0	-6.1
300°	-6.4	-6.5	-7.7	-9.7	-15.4	-22.4	-23.5	-19.6	-7.7	-7.8	-8.0	-9.6	-8.7	-9.2	-10.1	-12.4	-18.9	-20.5	-22.6	-20.8	-6.1	-8.7	-9.2	-8.6
315°	-9.6	-11.4	-12.5	-13.0	-16.3	-25.2	-26.3	-19.3	-8.6	-10.3	-10.2	-8.7	-9.5	-9.0	-10.2	-12.6	-9.2	-10.9	-13.2	-11.6	-8.5	-11.4	-12.6	-10.2
330°	-13.4	-15.7	-16.1	-16.1	-14.2	-19.2	-24.1	-19.1	-4.8	-6.2	-7.0	-6.5	-10.0	-9.4	-10.1	-11.6	-7.5	-9.1	-10.8	-9.4	-9.3	-12.0	-14.1	-12.9
345°	-19.0	-16.1	-17.8	-22.3	-14.4	-18.1	-24.1	-18.4	-5.9	-6.9	-7.5	-8.7	-11.9	-11.2	-11.4	-12.6	-20.0	-20.7	-19.5	-15.4	-10.0	-12.5	-13.7	-12.4
360°	-12.0	-13.8	-14.2	-15.9	-10.1	-12.9	-15.1	-14.7	-8.5	-9.8	-10.5	-10.8	-16.7	-14.6	-13.9	-15.1	-17.5	-13.6	-14.3	-28.7	-7.6	-8.8	-9.9	-10.3
MAX	-1.6	-1.6	-2.4	-3.4	-7.0	-7.0	-8.0	-9.2	-4.8	-5.7	-6.2	-6.5	-3.7	-3.9	-4.7	-5.8	-7.5	-8.5	-7.7	-7.7	-2.4	-3.1	-3.8	-5.0