

Antenna Gain Measurement

Equipment	Manufacturer	Model Name	Serial No.	Calibration Date	Next Calibration
Log Periodic Antenna	Schwarzbeck	UHALP9108A1	579	2022/02/01	2023/02/28
Dipole Antenna	Anritsu	MP651A	M0952A	2021/12/15	2022/12/14
Signal Generator	Agilent	E4438C		***	***
EMI Test Receiver	Rohde & Schwarz	ESU8	100209	2022/02/04	2023/02/28
Power Meter	HEWLETT PACKARD	437B	2801A00355	2022/07/08	2023/07/07

Receiver setting

Start Frequency	300 MHz
Stop Frequency	1000 MHz
RBW	300 kHz
VBW	300 kHz
SWT	20 ms
Trace	Max Hold
Detector	Max Peak

Method of measurement

Based on ETSI EN 300 422-1 v2.1.2 (2017-01), 8.2 Rated output power

Antenna gain of the set [dBd]:

ERP of the set [dBm] - conducted power of the set [dBm]

Antenna gain of the set [dBi]:

Antenna gain of the set [dBd] + 2.14

ERP of the set:

$P1 + L2 - L1$ [dBm]

P1 [dBm]: Input power to the Standard dipole antenna

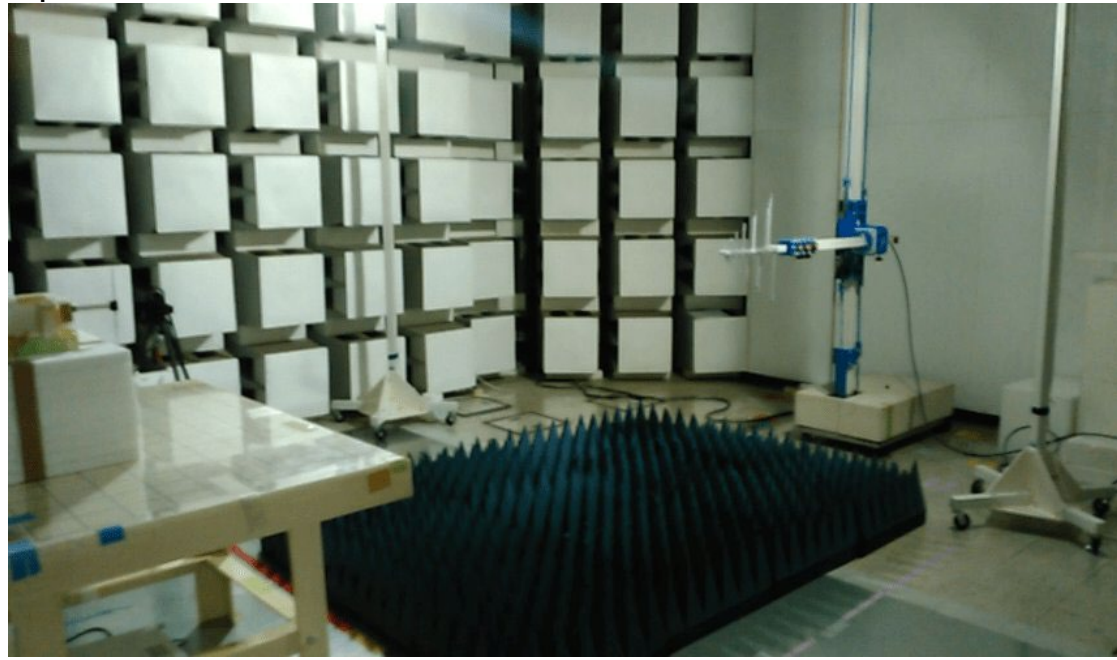
(=Output power of Signal generator [dBm] - Cable loss [dB])

L1 [dB μ V]: Receiver antenna level of the radiation from the dipole antenna

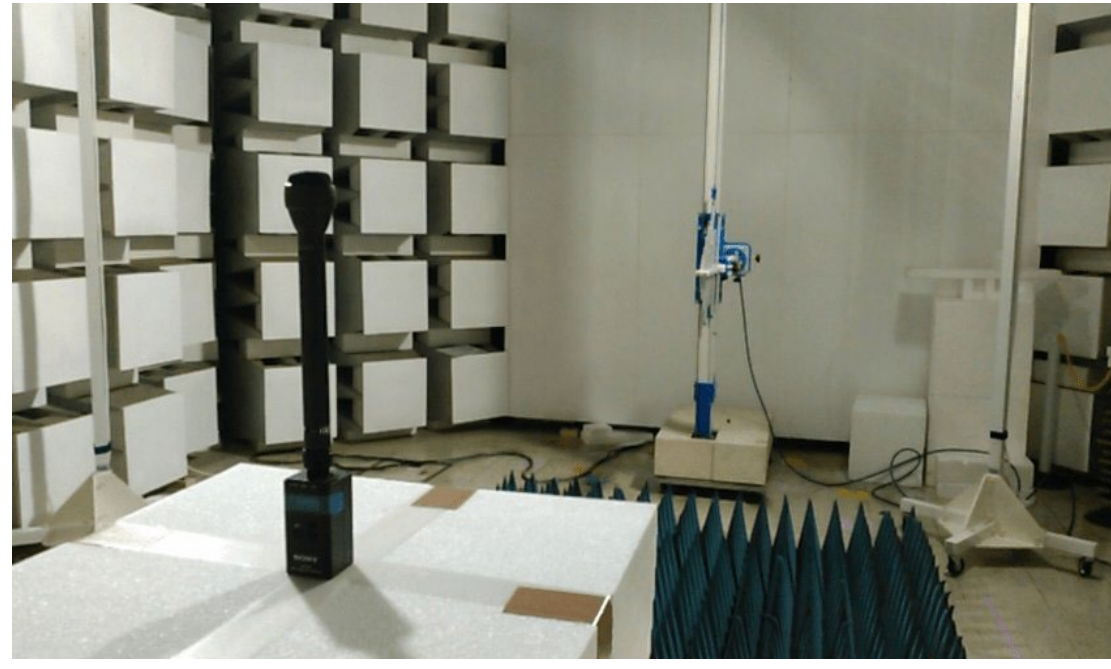
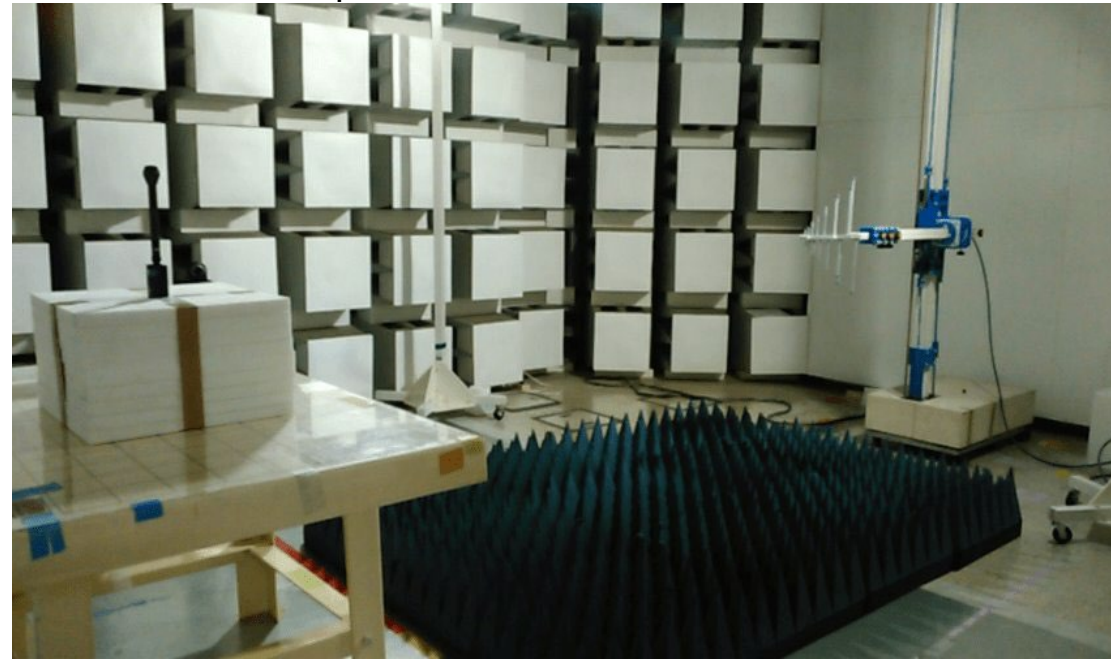
L2 [dB μ V]: Receiver antenna level of the radiation from the set

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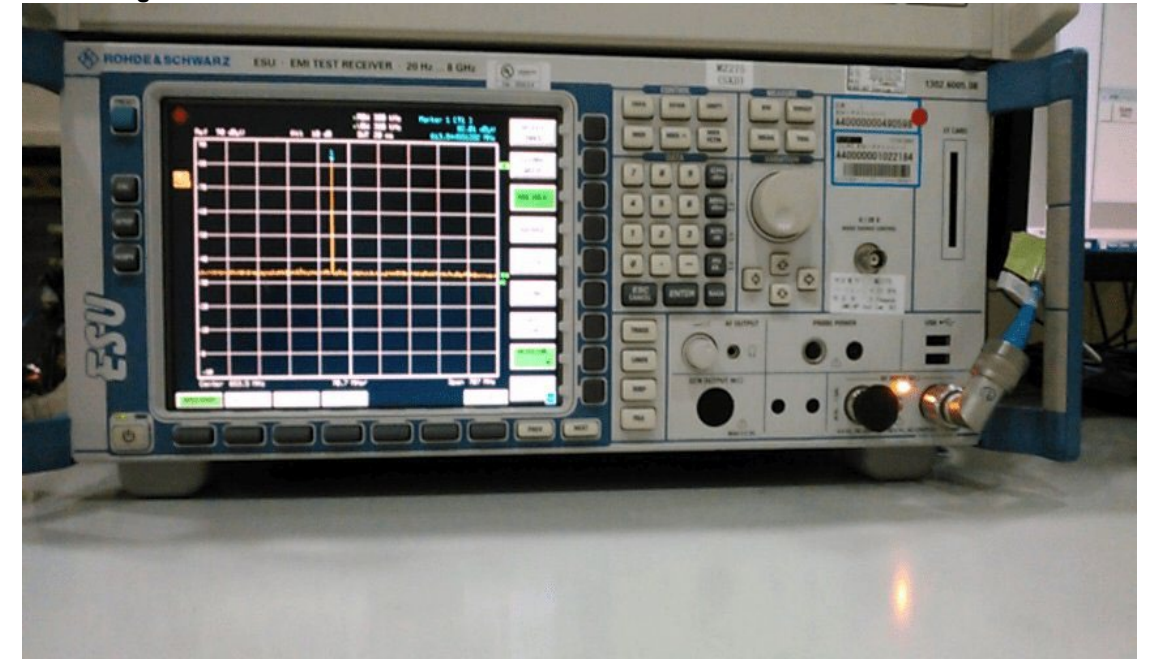
Dipole



DWT-P30 attached to Microphone



Measuring Receiver



Antenna Gain Measurement

Dated: 2022/09/15

Measurement personnel Yuki Atsumi

Frequency [MHz]	Dipole Antenna		DWT-P30 with Microphone			
	SG output incl. cable loss [dBm]	Reading [dBμV]	Conducted output [dBm]	Reading [dBμV]	ERP [dBm]	Antenna Gain [dBi]
470	0.07	76.7	8.95	85.2	8.57	1.76
488	-0.01	77.2	8.89	86.2	8.99	2.24
506	0.04	77.3	9.03	86.1	8.84	1.95
524	-0.04	76.6	8.99	85.9	9.26	2.41
542	-0.03	75.8	8.91	84.5	8.67	1.9
560	-0.01	75.5	8.88	84.4	8.89	2.15
566	-0.04	75.3	8.98	83.4	8.06	1.22
578	-0.08	75.2	8.97	83.9	8.62	1.79
584	-0.07	75.2	9.06	84.4	9.13	2.21
594	-0.03	75.3	9.01	85	9.67	2.8
596	-0.01	75.3	8.95	84.7	9.39	2.58
602	0	75.5	8.97	83.7	8.2	1.37
614	-0.03	75.4	8.97	83.9	8.47	1.64
620	-0.06	75.2	8.9	84	8.74	1.98
638	-0.01	75.4	8.88	83.3	7.89	1.15
656	0	74.9	8.86	83.3	8.4	1.68
674	-0.05	74.7	9.04	83.2	8.45	1.55
692	-0.05	74.1	9	82.9	8.75	1.89
714	-0.1	73.8	8.96	82.4	8.5	1.68