LoRa Ref Report

Common Information

Test Description:	LoRa OTA
Operating Conditions:	Freespace
Operator Name:	LT
Comment:	
Lab:	LEAT, Universite Cote d'azur

Hardware Setup: OTA Measurements\OTA Measurements_CMW-868

Radiated Power Mobile Phone: Not available
Sensitivity Mobile Phone: Not available
Antenna Measurement:

Analyzer:	CMW-GPRF Power Meter @ VISA (ADR TCPIP::192.168.168.113::INST0::INSTR), SN 1201.0002k50/169295, FW BASE: 3.7.172
Signal Path:	RadPower Vertical
Analyzer2:	CMW-GPRF Power Meter @ VISA (ADR TCPIP::192.168.168.113::INST0::INSTR), SN 1201.0002k50/169295, FW BASE: 3.7.172
Signal Path2:	RadPower Horizontal
Antenna:	CAL_Load
Turntable:	DST200 Positioner Elevation @ COM1 (ADR 1), SN DST200 Positioner, FW HW: 24608 SW:8483
Turn Device:	DST200 Positioner Azimuth @ COM1 (ADR 1), SN DST200 Positioner, FW HW: 24608 SW:8483
Generator:	
Signal Path:	

Conducted MIMO: Not available

Test Information

Test Method:	Antenna Measurement
Test Condition:	FS: Free Space
Frequency:	868.000 MHz
Test Time:	Start: 1/10/2024 12:50:45 AM; Stop: 1/10/2024 1:02:38 AM
Cal Data Phi:	0.00 dB
Cal Data Theta:	0.00 dB

OTA Test Results for Frequency 868.000 MHz

OTA Evaluation Results:

Total Efficiency	-11.55 dB
Total Efficiency	7.01 %
Directivity	2.29 dBi
Peak EIRP	-9.25 dBm
NHPRP 45°	-13.25 dBm
NHPRP 45° / TRP	-1.70 dB
NHPRP 45° / TRP	67.60 %
NHPRP 30°	-14.84 dBm
NHPRP 30° / TRP	-3.29 dB
NHPRP 30° / TRP	46.88 %
NHPRP 22.5°	-16.05 dBm
NHPRP 22.5° / TRP	-4.51 dB
NHPRP 22.5° / TRP	35.42 %
UHRP	-14.27 dBm
UHRP / TRP	-2.72 dB
UHRP / TRP	53.41 %
LHRP	-14.89 dBm
LHRP / TRP	-3.35 dB
LHRP / TRP	46.25 %
PGRP (0-120°)	-12.75 dBm
PGRP / TRP	-1.21 dB
PGRP / TRP	75.76 %
Front/Back Ratio	1.78
PhiBW	243.7 deg
PhiBW Up	58.0 deg
PhiBW Down	185.7 deg
ThetaBW	180.0 deg
ThetaBW Up	180.0 deg
ThetaBW Down	180.0 deg
Boresight Phi	345 deg
Boresight Theta	45 deg
Maximum Power	-9.25 dBm
Minimum Power	-30.07 dBm
Average Power	-11.20 dBm
Max/Min Ratio	20.82 dB
Max/Avg Ratio	1.94 dB
Min/Avg Ratio	-18.88 dB
Worst Single Value	-50.70 dBm
Worst Position	Azi = 285 deg; Elev = 105 deg; Pol = Theta
Best Single Value	-9.45 dBm
Best Position	Azi = 285 deg; Elev = 30 deg; Pol = Phi

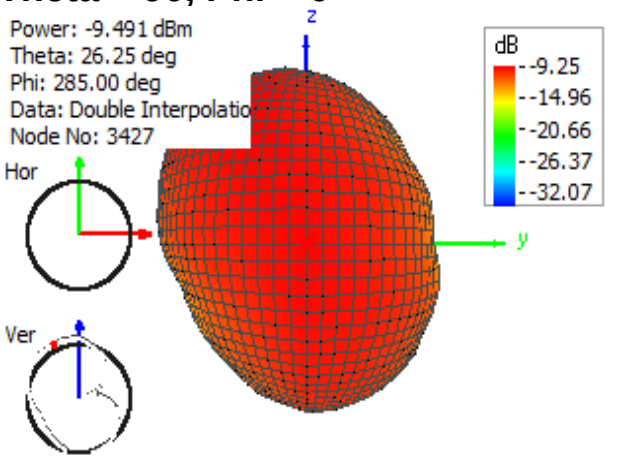
RP_868.000_tot

Azimuth (deg)	Elevation 0 deg (dBm)	Elevation 15 deg (dBm)	Elevation 30 deg (dBm)	Elevation 45 deg (dBm)	Elevation 60 deg (dBm)	Elevation 75 deg (dBm)	Elevation 90 deg (dBm)	Elevation 105 deg (dBm)	Elevation 120 deg (dBm)
0.00	-10.04	-10.03	-10.04	-9.85	-9.66	-9.45	-9.37	-9.43	-9.68
15.00	-10.04	-10.28	-10.50	-10.29	-10.33	-9.84	-9.88	-9.67	-9.91
30.00	-10.04	-10.63	-11.13	-11.19	-11.48	-10.82	-10.89	-10.37	-10.52
45.00	-10.04	-11.08	-11.94	-12.41	-13.05	-12.27	-12.45	-11.47	-11.47
60.00	-10.04	-11.53	-12.80	-14.06	-15.39	-14.71	-14.85	-13.09	-12.76
75.00	-10.04	-11.98	-13.66	-16.08	-18.71	-18.30	-18.36	-15.11	-14.08
90.00	-10.04	-12.25	-14.12	-17.93	-22.58	-25.28	-23.10	-17.10	-14.99
105.00	-10.04	-12.26	-14.02	-18.25	-21.85	-30.07	-22.43	-17.52	-14.94
120.00	-10.04	-12.06	-13.44	-16.75	-18.02	-20.46	-17.90	-16.08	-14.01
135.00	-10.04	-11.66	-12.62	-14.82	-14.97	-16.10	-14.72	-14.08	-12.82
150.00	-10.04	-11.28	-11.82	-13.09	-12.87	-13.40	-12.49	-12.42	-11.72
165.00	-10.04	-10.88	-11.13	-11.74	-11.43	-11.64	-11.13	-11.24	-10.94
180.00	-10.04	-10.53	-10.51	-10.76	-10.43	-10.54	-10.28	-10.48	-10.51
195.00	-10.04	-10.26	-10.09	-10.10	-9.87	-9.95	-9.93	-10.20	-10.46
210.00	-10.04	-10.02	-9.76	-9.66	-9.59	-9.74	-9.99	-10.35	-10.81
225.00	-10.04	-9.89	-9.60	-9.51	-9.60	-9.94	-10.47	-10.93	-11.61
240.00	-10.04	-9.77	-9.47	-9.46	-9.76	-10.39	-11.26	-11.96	-12.81
255.00	-10.04	-9.77	-9.45	-9.55	-9.99	-10.98	-12.20	-13.37	-14.30
270.00	-10.04	-9.73	-9.43	-9.59	-10.14	-11.47	-12.88	-14.67	-15.54
285.00	-10.04	-9.72	-9.41	-9.60	-10.13	-11.59	-12.89	-15.05	-15.57
300.00	-10.04	-9.72	-9.40	-9.53	-9.93	-11.24	-12.20	-14.10	-14.32
315.00	-10.04	-9.69	-9.38	-9.39	-9.63	-10.61	-11.16	-12.66	-12.70
330.00	-10.04	-9.73	-9.44	-9.30	-9.38	-9.93	-10.23	-11.21	-11.35
345.00	-10.04	-9.75	-9.45	-9.25	-9.26	-9.43	-9.73	-10.19	-10.57
360.00	-10.04	-10.03	-10.04	-9.85	-9.66	-9.45	-9.37	-9.43	-9.68

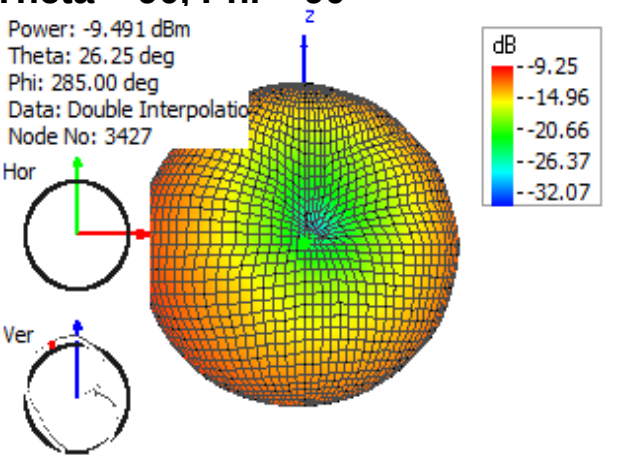
(continuation of the "RP_868.000_tot" table from column 10 ...)

Azimuth (deg)	Elevation 135 deg (dBm)	Elevation 150 deg (dBm)	Elevation 165 deg (dBm)
0.00	-10.02	-10.40	-10.73
15.00	-10.12	-10.41	-10.73
30.00	-10.41	-10.57	-10.74
45.00	-10.92	-10.88	-10.83
60.00	-11.55	-11.23	-10.92
75.00	-12.23	-11.58	-11.04
90.00	-12.68	-11.77	-11.10
105.00	-12.77	-11.77	-11.11
120.00	-12.51	-11.64	-11.10
135.00	-12.01	-11.39	-11.05
150.00	-11.49	-11.18	-11.06
165.00	-11.03	-11.01	-11.04
180.00	-10.82	-10.99	-11.11
195.00	-10.81	-11.09	-11.19
210.00	-11.10	-11.38	-11.31
225.00	-11.67	-11.85	-11.48
240.00	-12.56	-12.46	-11.66
255.00	-13.64	-13.09	-11.88
270.00	-14.58	-13.50	-12.00
285.00	-14.82	-13.51	-12.04
300.00	-14.15	-13.06	-11.93
315.00	-13.03	-12.32	-11.69
330.00	-11.85	-11.59	-11.42
345.00	-10.97	-11.11	-11.13
360.00	-10.02	-10.40	-10.73

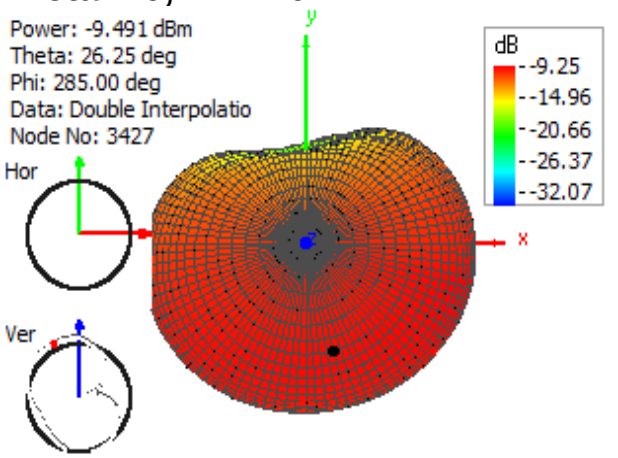
Theta = 90, Phi = 0



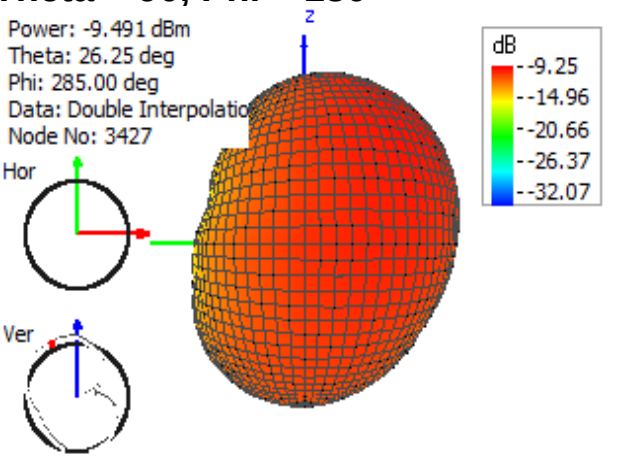
Theta = 90, Phi = 90



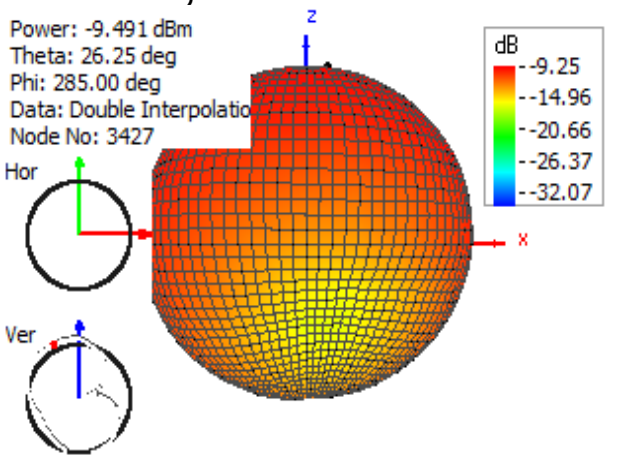
Theta = 0, Phi = 0



Theta = 90, Phi = 180



Theta = 90, Phi = 270



Theta = 180, Phi = 0