



Measurement Report

Nokeval, CCU-2 (NA), LTE + 916 MHz variant, 4-layer PCB

Revision History

Rev.	Date	Description
1.0	08.07.2025	Initial version
1.1	02.10.2025	Device id updated

EXECUTIVE SUMMARY

This measurement report details the antenna measurements for the following device:

- 4-layer PCB CCU-2 (NA) (LTE 699-960MHz, 1710-2170 MHz; LoRa 916 MHz)

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MEASUREMENT SETUP

The device was measured in free-space conditions.

MEASUREMENT RESULTS

LoRa antenna (916 MHz)

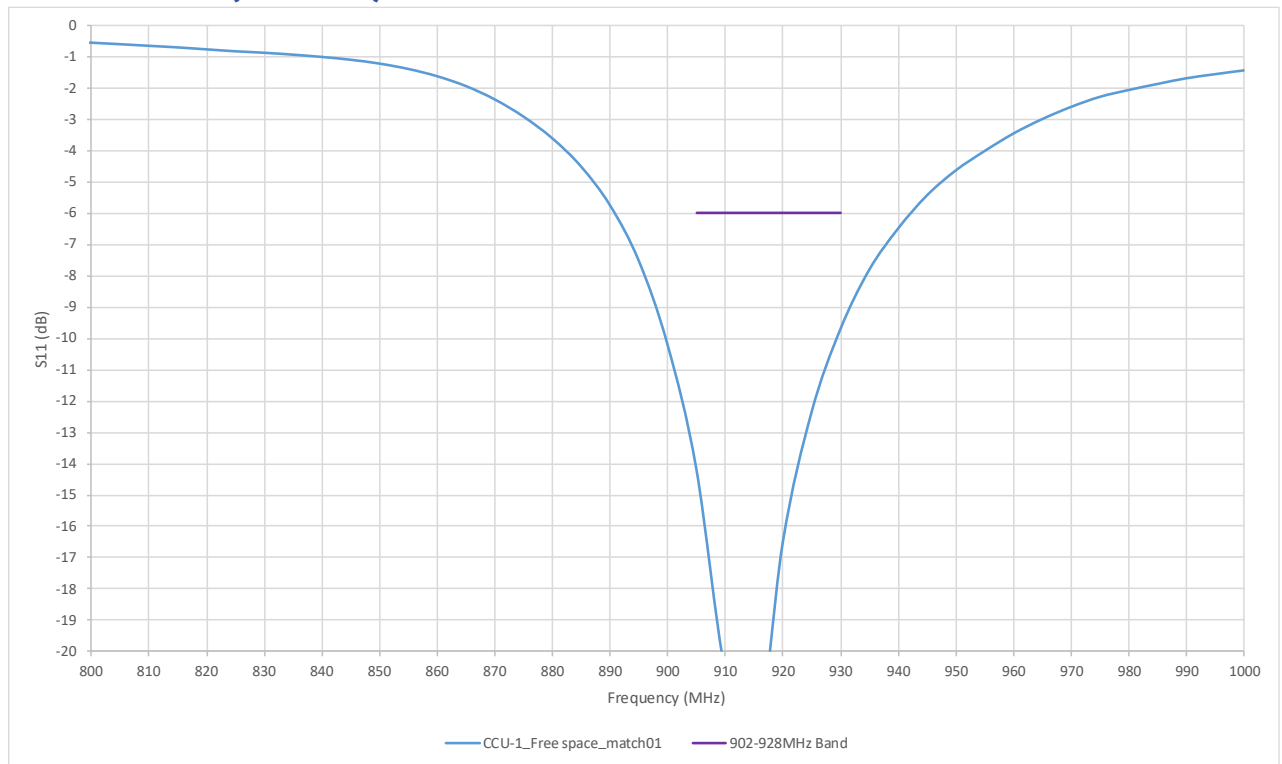


Figure 1: LoRa antenna return loss (S11)

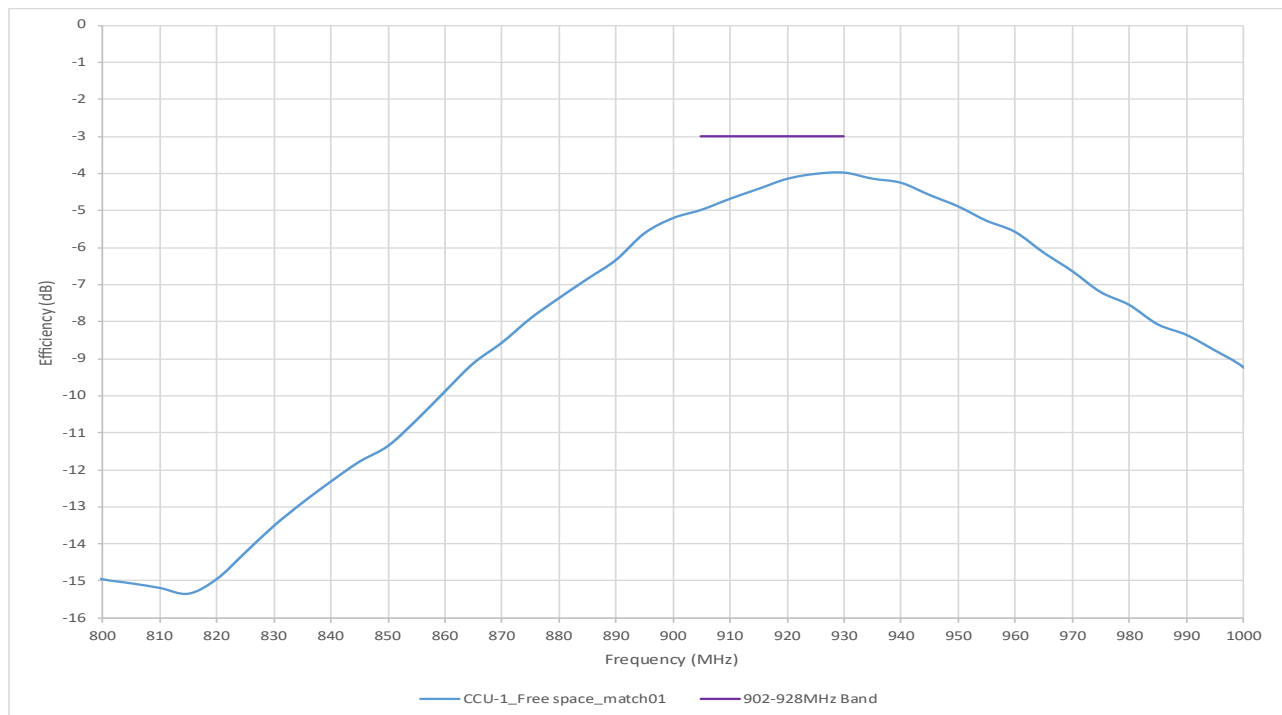


Figure 2: LoRa antenna total efficiency

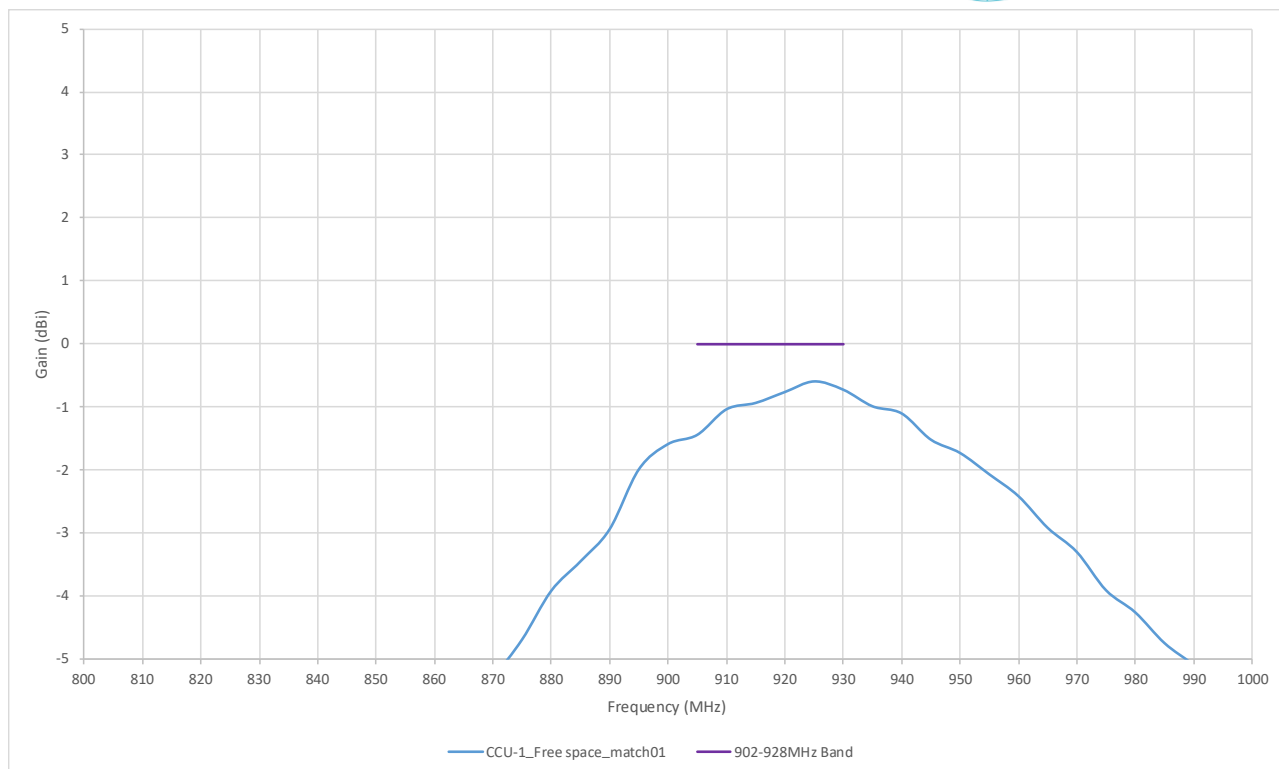


Figure 3: LoRa antenna maximum gain

CCU-2 (NA), maximum gain, LoRa 916 MHz (908-928 MHz)	-0.6 dBi
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LTE antenna (699-960 MHz, 1710-2170 MHz)

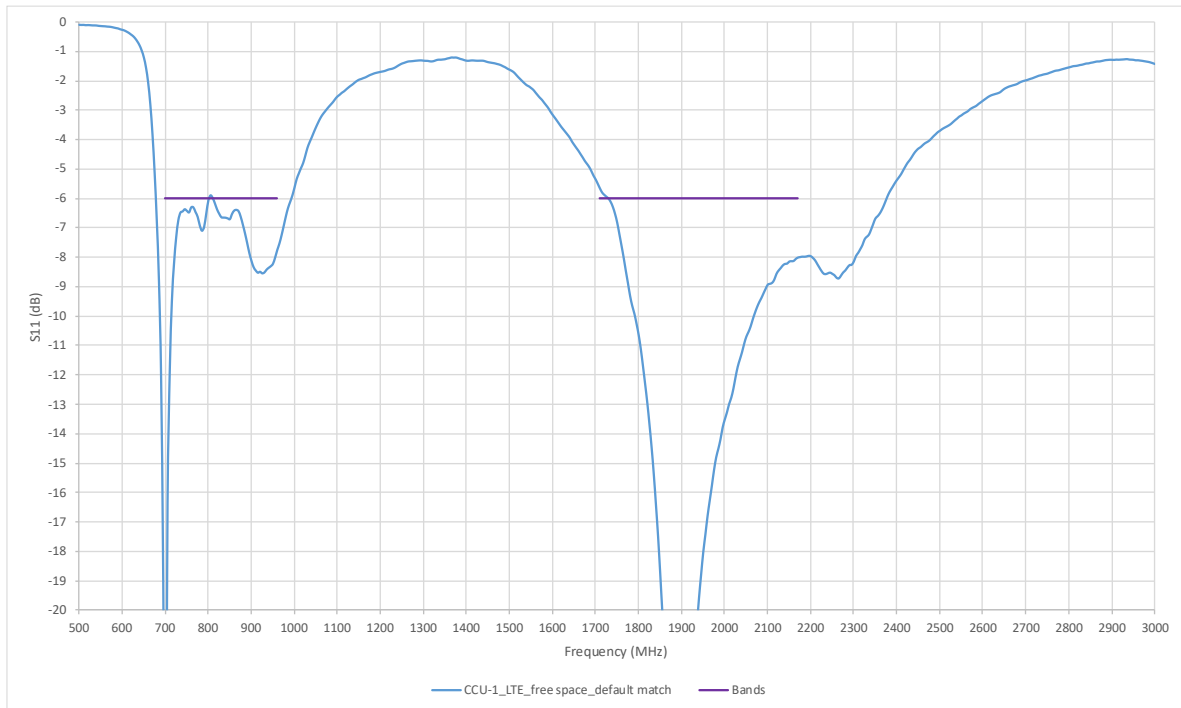


Figure 4: LTE antenna return loss (S_{11})

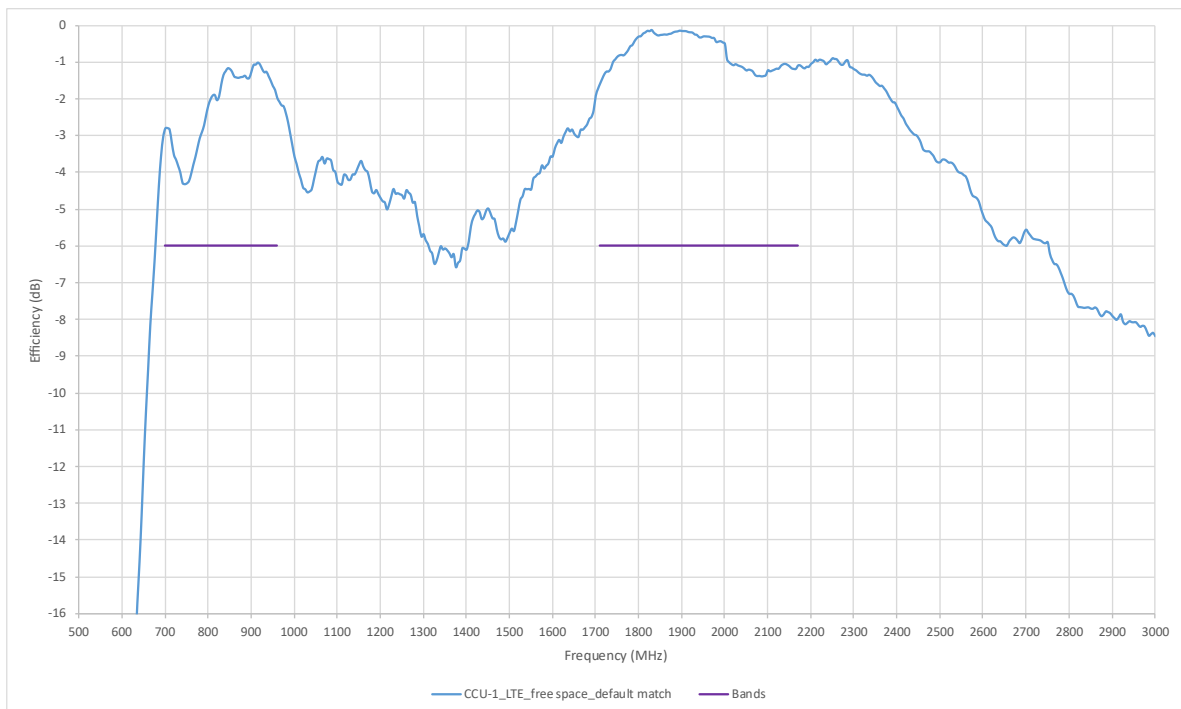


Figure 5: LTE antenna total efficiency

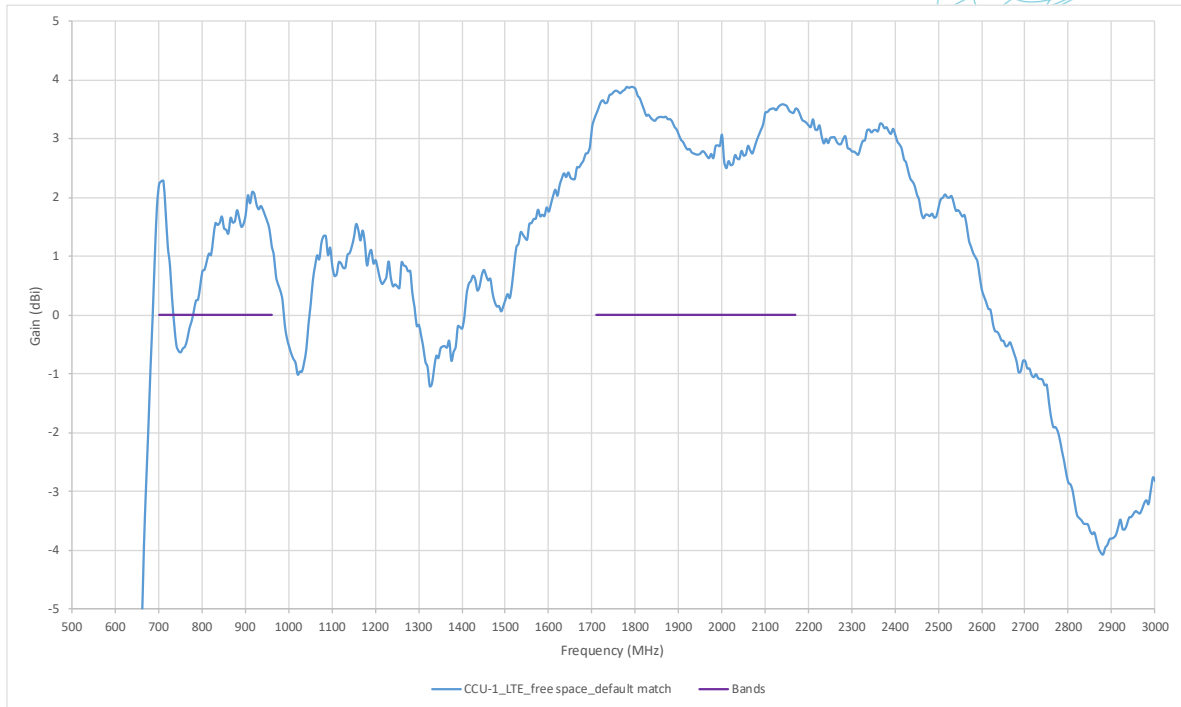
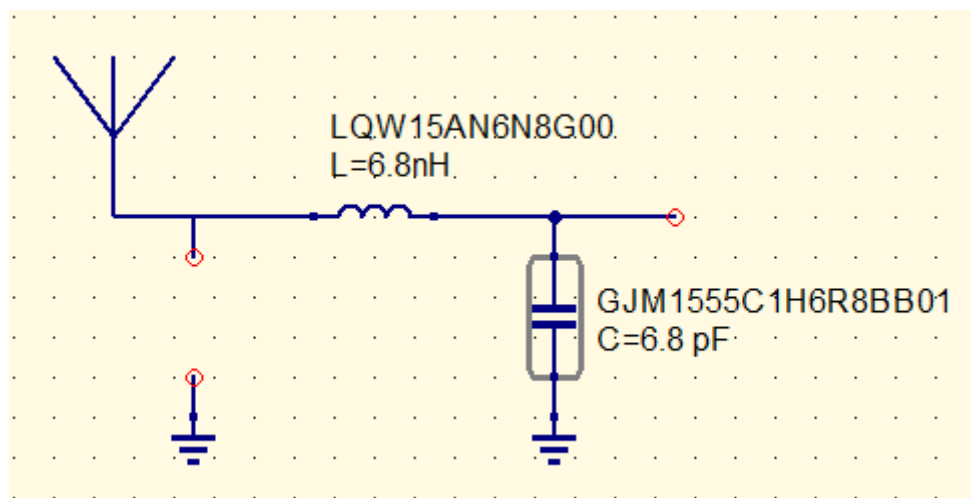


Figure 6: LTE antenna maximum gain

CCU-2 (NA), maximum gain, LTE low band (699-960 MHz)	+2.3 dBi
CCU-2 (NA), maximum gain, LTE high band (1710-2170 MHz)	+3.9 dBi

MATCHING CIRCUITS

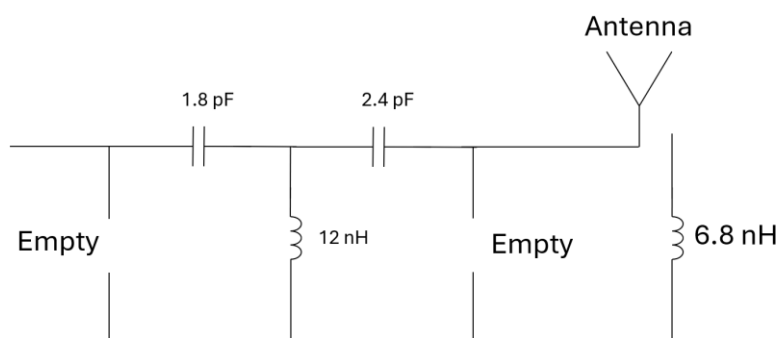
LoRa



Inductor, 6.8 nH: Murata LQW15AN6N8G00

Capacitor, 6.8 pF: Murata GJM1555C1H6R8BB01

LTE



Capacitor, 2.4 pF: Johanson Technology QCCP501Q2R4B1GV001B

Inductor, 12 nH: Murata LQW18AN12NJ10

Capacitor, 1.8 pF: Johanson Technology QCCP501Q1R8B1GV001B

Path to ground from second antenna pin

Inductor, 6.8 nH: Murata LQW18AN6N8C00