



Radiantum

WIRELESS PERFORMANCE MATTERS

Tri plus grupa d.o.o.
#2544 Alloy Leak Sensor
Antenna Matching and Efficiency Measurements
01/02/2023
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SUMMARY 1

- Tested device: Alloy Leak Sensor
- Tested antennas:
 - 915MHz LoRa stamped metal antenna
- Antenna matching circuit was tuned for Sensor attached. After matching S11 and Efficiency were measured in free space with Sensor attached
- Efficiency on 915MHz LoRa band is between -3.3dB – -4.3dB
- Gain on 915MHz LoRa band is between -0.24dBi – -0.54dBi
 - Peak gain -0.24dBi @ 914MHz

SUMMARY 2

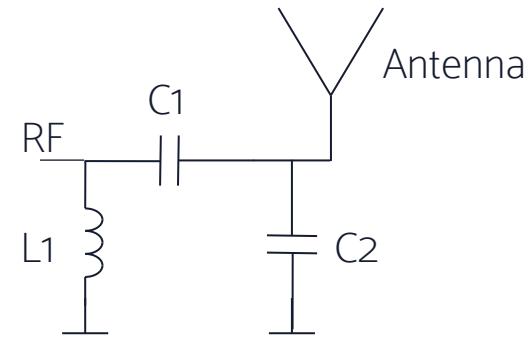
Device	Alloy Leak Sensor	
Efficiency	-3.3 – -4.3	dB
Frequency	902 – 928	MHz
Gain (Max/Typical)	-0.24 / -0.36	dBi

S11 AND EFFICIENCY MEASUREMENT SETUPS

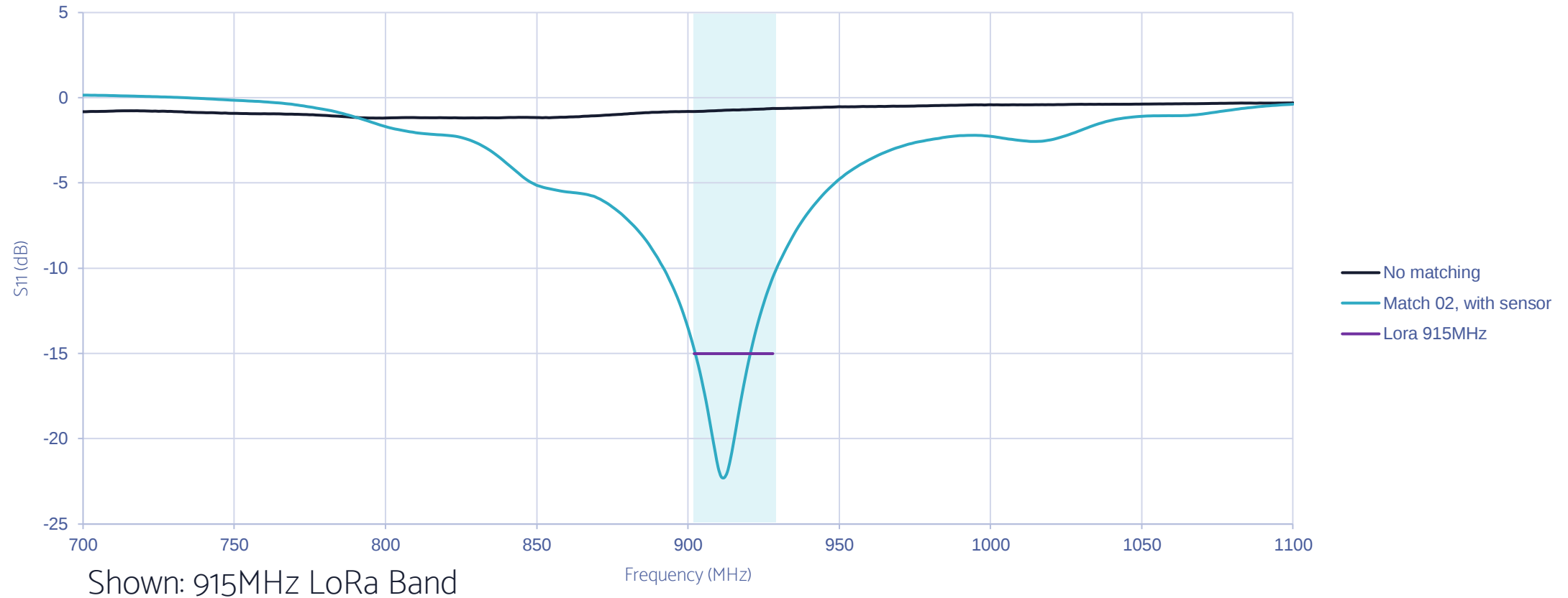
915MHz LoRa MATCHING CIRCUIT WITH SENSOR

- Using measurements and simulation we tuned LoRa antenna for 915MHz band with Sensor
- New matching components are as follow:

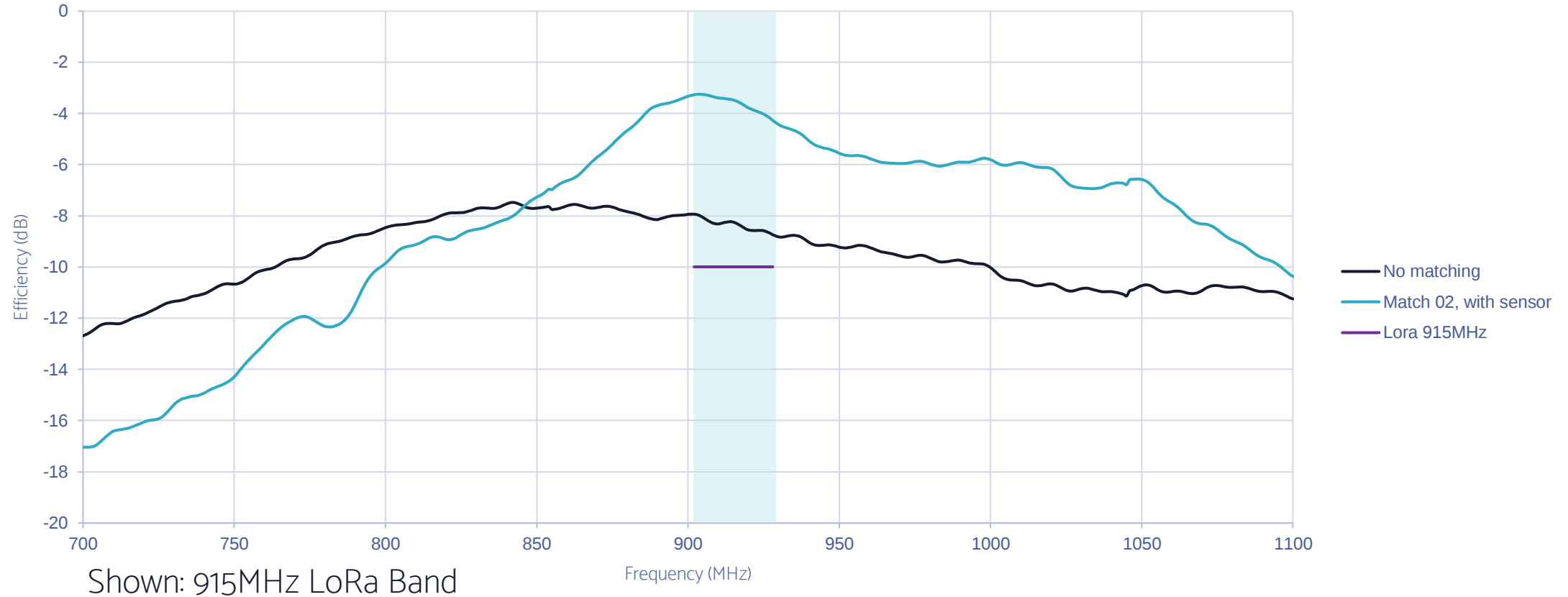
Component	Value	Murata part number
L1	13nH	LQW15AN13NG00
C1	3.5pF	GJM1555C1H3R3WBo1
C2	2.2pF	GJM1555C1H2R2WBo1



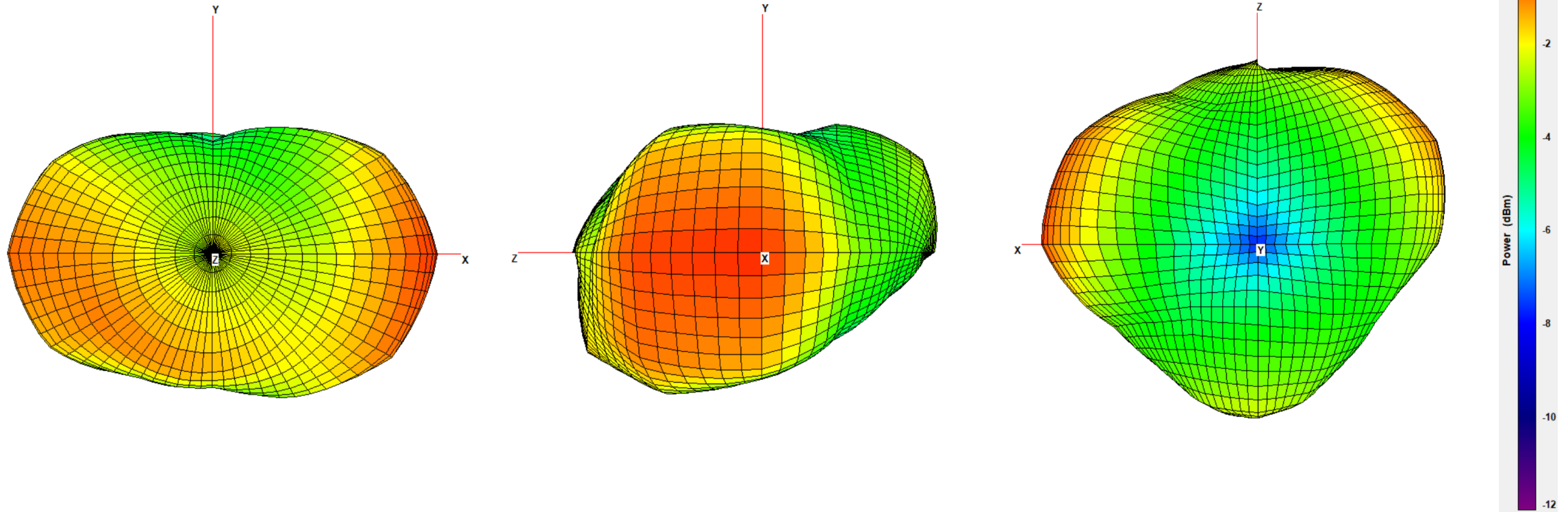
915MHz LoRa MEASURED S11



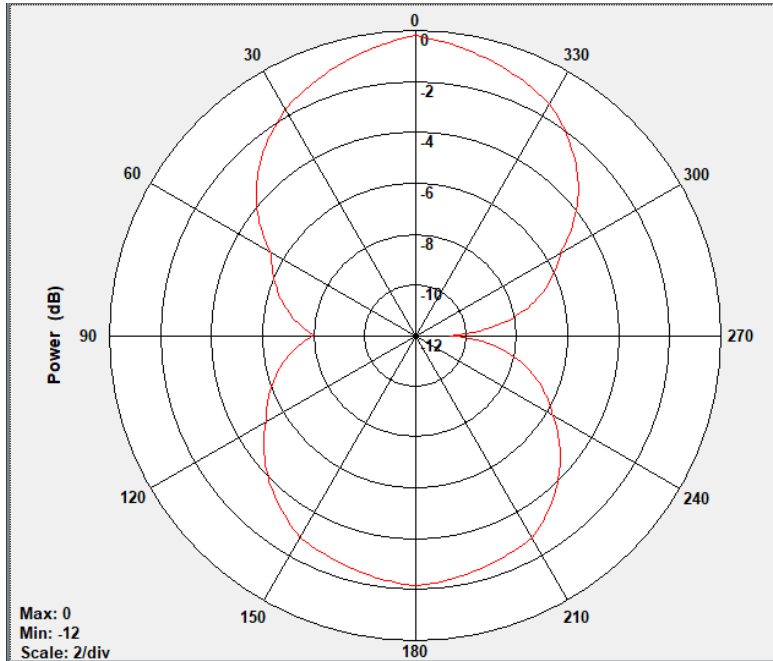
915MHz LoRa MEASURED EFFICIENCY



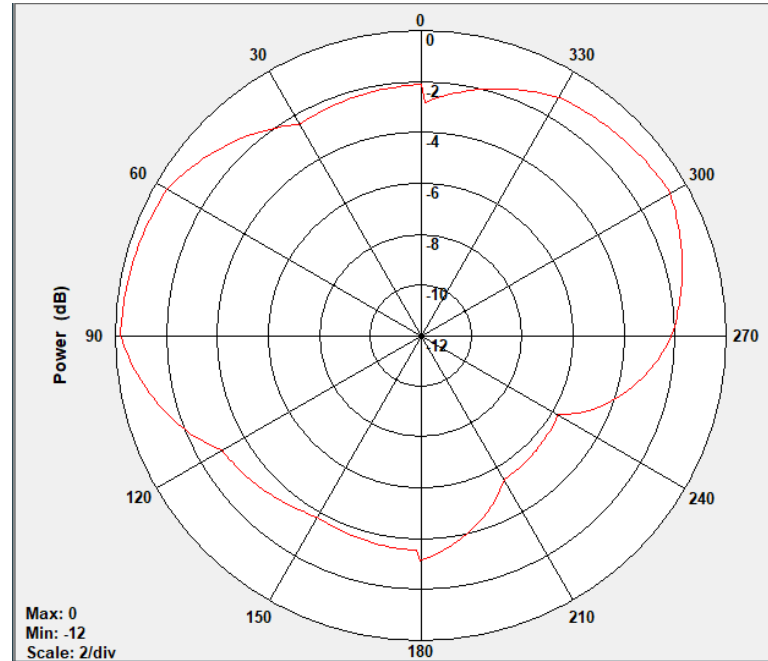
ANTENNA 3D PATTERNS, 915MHz



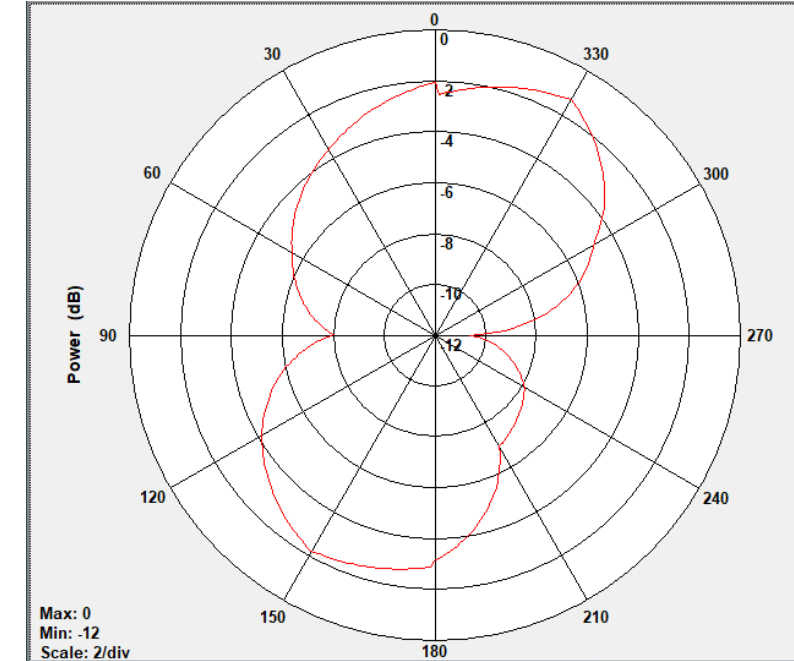
ANTENNA 2D PATTERNS, 915MHz



Theta 0 (XY-plane)



Phi 0 (ZX-plane)

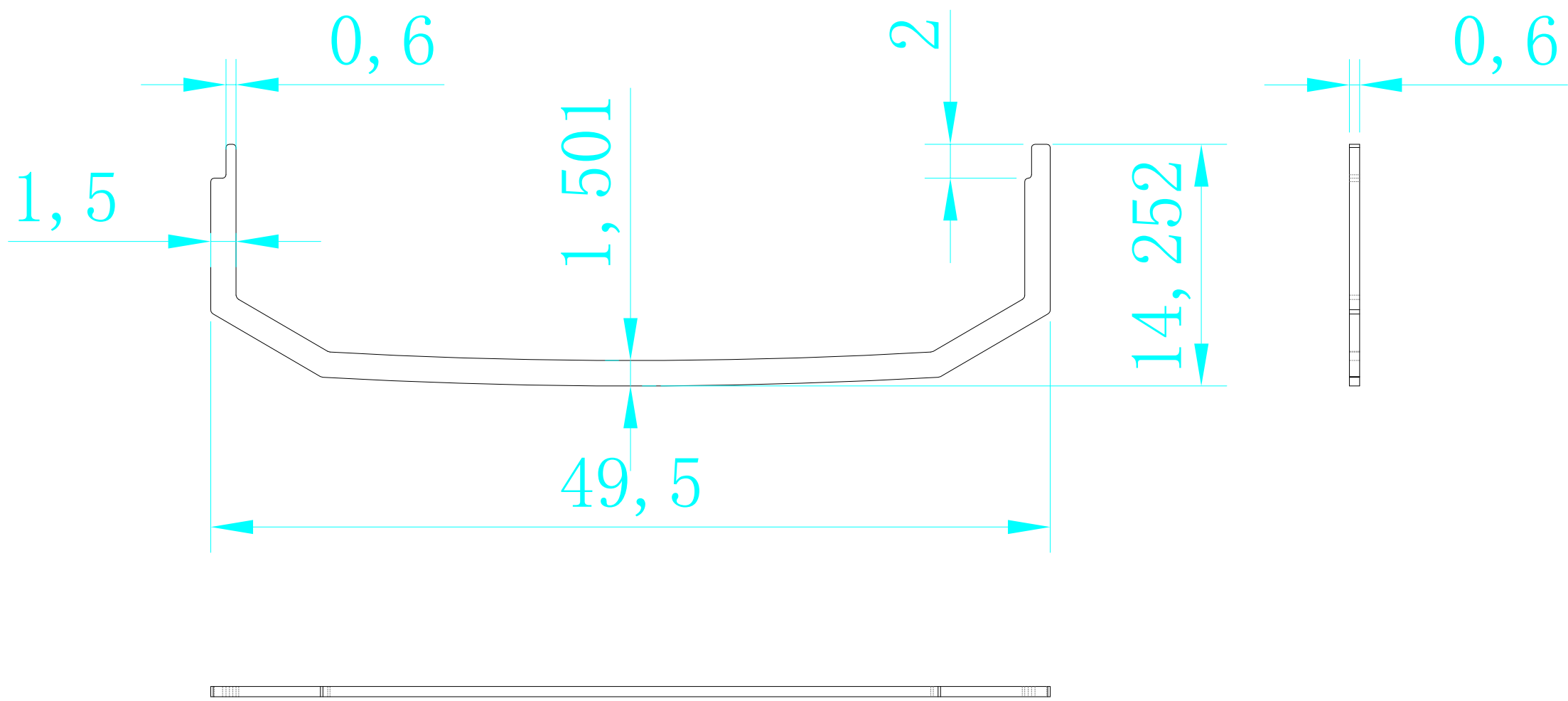
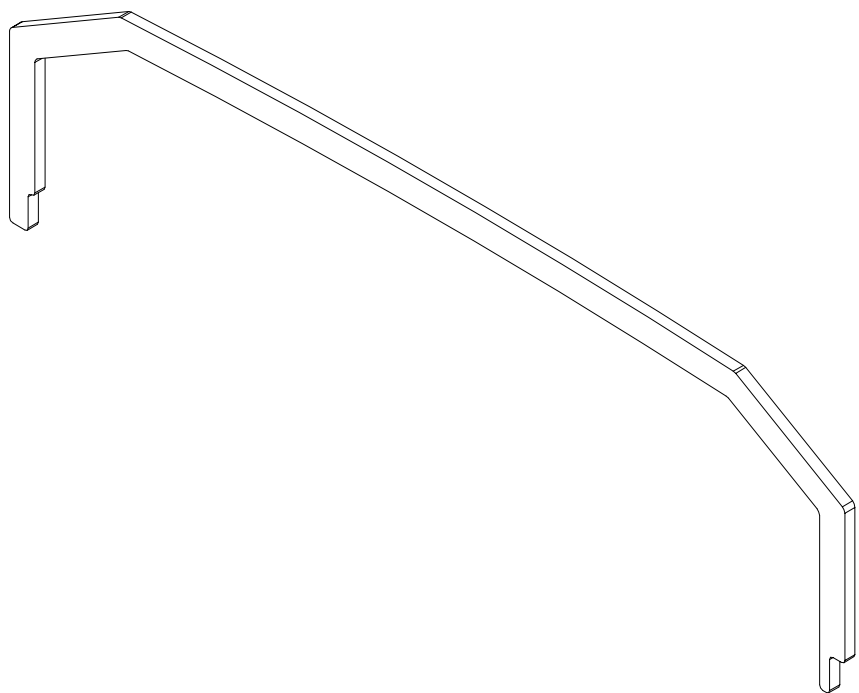


Phi 90 (YZ-plane)

LS01天线

客户料号：027-LS01ZW00-0001

供货编码：SYF023



材质：磷铜，表面镀锡

