

## KX1 project, antenna specification document

Customer name: Botslab

Customer product name: KX1

Product name: Antenna assembly

Product specification: See the BOM table for more details

material code: 231100308 Antenna Assembly (Kai Gold)

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**The Supplier acknowledges the signature of the following documents:**

Responsible person / date		IQC/ date	Review / Date	Approval / Date
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The demander's judgment result: <input type="checkbox"/> qualified <input type="checkbox"/> unqualified			
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Engineer / Date		Date	approval / date

# catalogue

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# 1. Overview

## 1.1 Scope of application

This requirement specifies the antenna technical requirements and material requirements specifications for KX 1 products.

This requirement applies to the selection, testing and acceptance of KX 1 antenna.

# 2. Technical index requirements

## 2.1 Introduction of test items and equipment

inventory	test item	equipment
Active test	TRP,TIS	Integrated tester, microwave darkroom

## 2.2 Active Reporting

### 2.2.1 Test instructions

Test tools: Agilent8960 instrument, R & SCMW500, full wave far field ETS dark room, high precision positioning system and its controller and computer with automatic test program

Test environment: temperature  $22^{\circ}\text{C} \pm 3^{\circ}\text{C}$ , humidity  $50\% \pm 15\%$

Test method: DUT is fixed in the center of the turntable with the H plane, on the same horizontal line as the center of the horn antenna.

The positioning system enables the DUT to rotate in the whole sphere to satisfy the high-precision 3 D positioning. Each RF instrument, turntable controller and PC with automatic test software pass through GPIB and interface

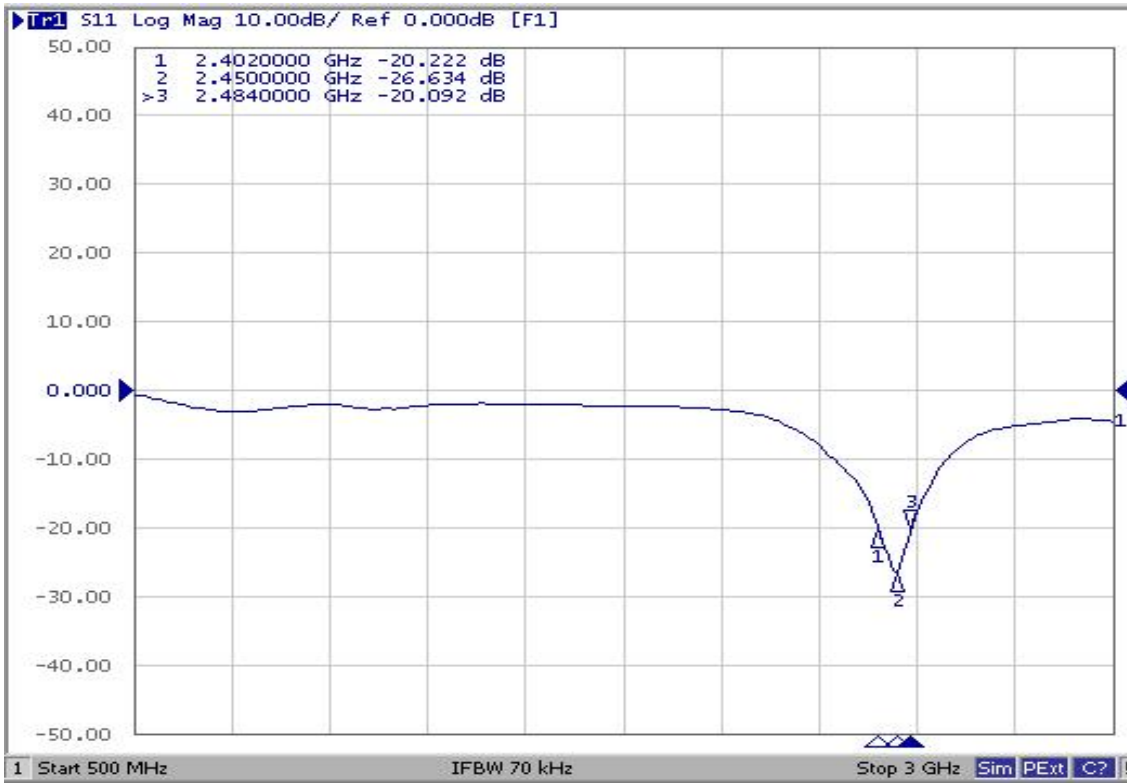
### 2.2.2 Antenna passive data

Freq (Mhz)	Effi (%)	Effi (db)	Gain (dbi)
2400MHZ	62.2%	-2.06	2.75
2410MHZ	63.2%	-1.99	3.10
2420MHZ	64.1%	-1.93	3.02
2430MHZ	63.5%	-1.97	3.15
2440MHZ	65.5%	-1.84	3.44
2450MHZ	66.4%	-1.78	3.27
2460MHZ	65.9%	-1.81	3.50
2470MHZ	64.3%	-1.92	3.36
2480MHZ	63.1%	-2.00	3.29
2490MHZ	62.6%	-2.03	2.98
2500MHZ	61.1%	-2.14	2.87

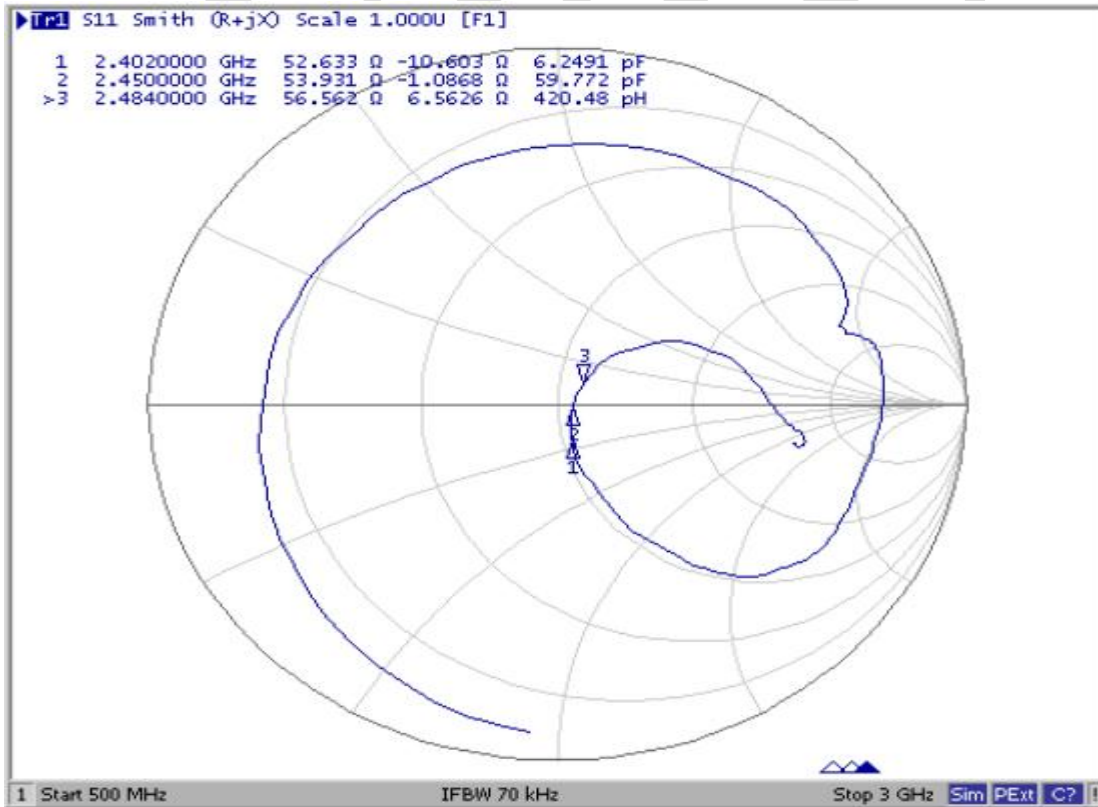
### 2.2.3 Antenna passive data-VSWR



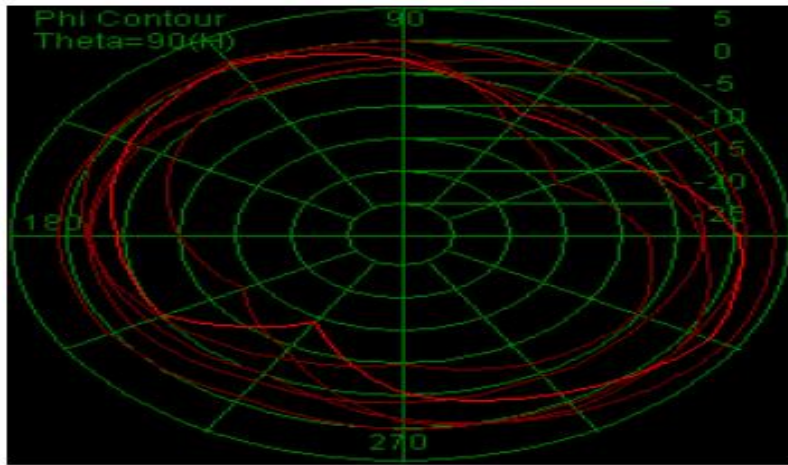
### 2.2.4 Antenna passive data Log Mag



### 2.2.5 Antenna passive data Smith

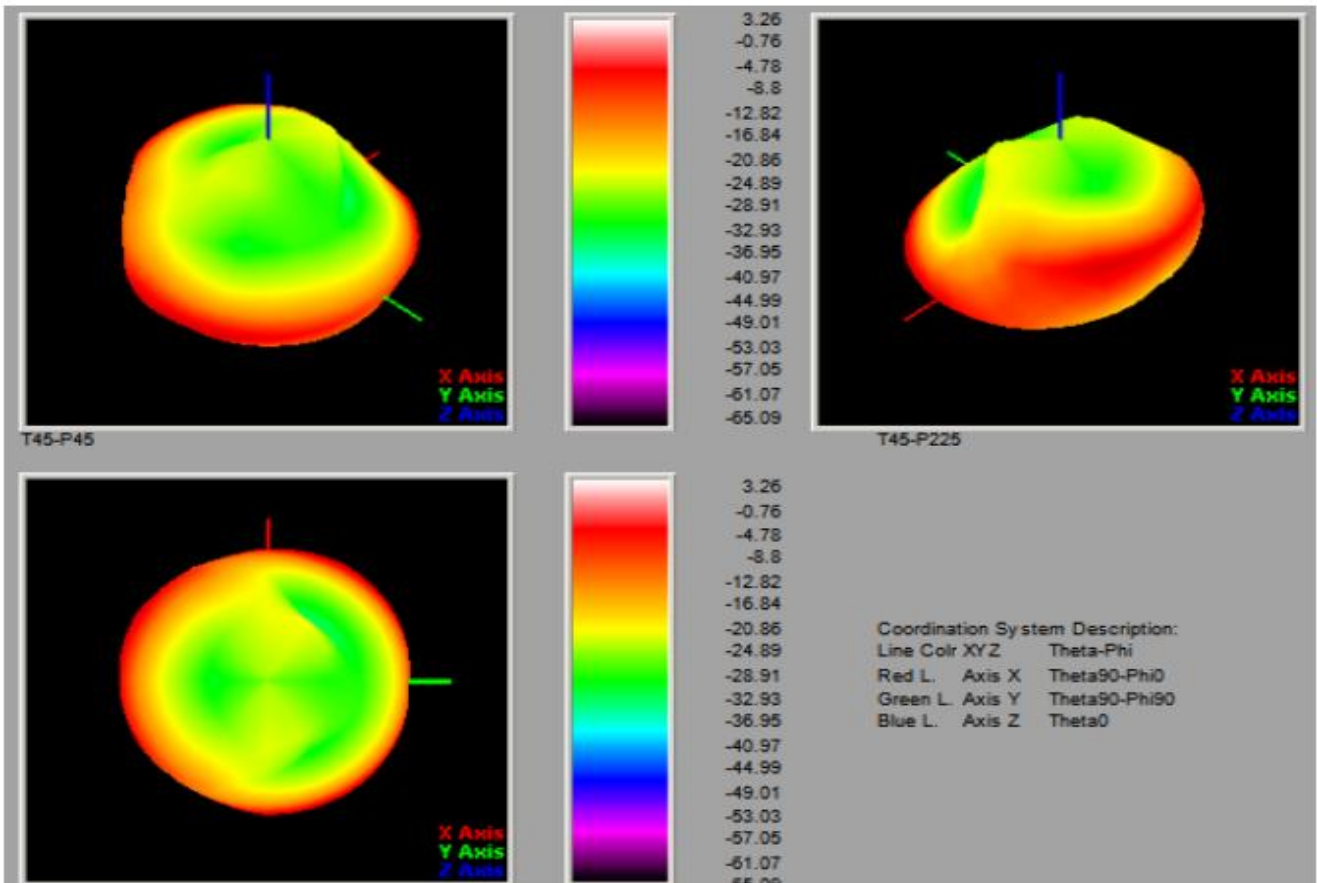


### 2.2.6 Antenna passive data-2D Pattern



Frequency (Mhz)	Max	Min
2400	2.75	-9.21
2450	3.27	-8.68
2500	2.87	-8.47

### 2.2.7 Antenna passive data-3D Pattern

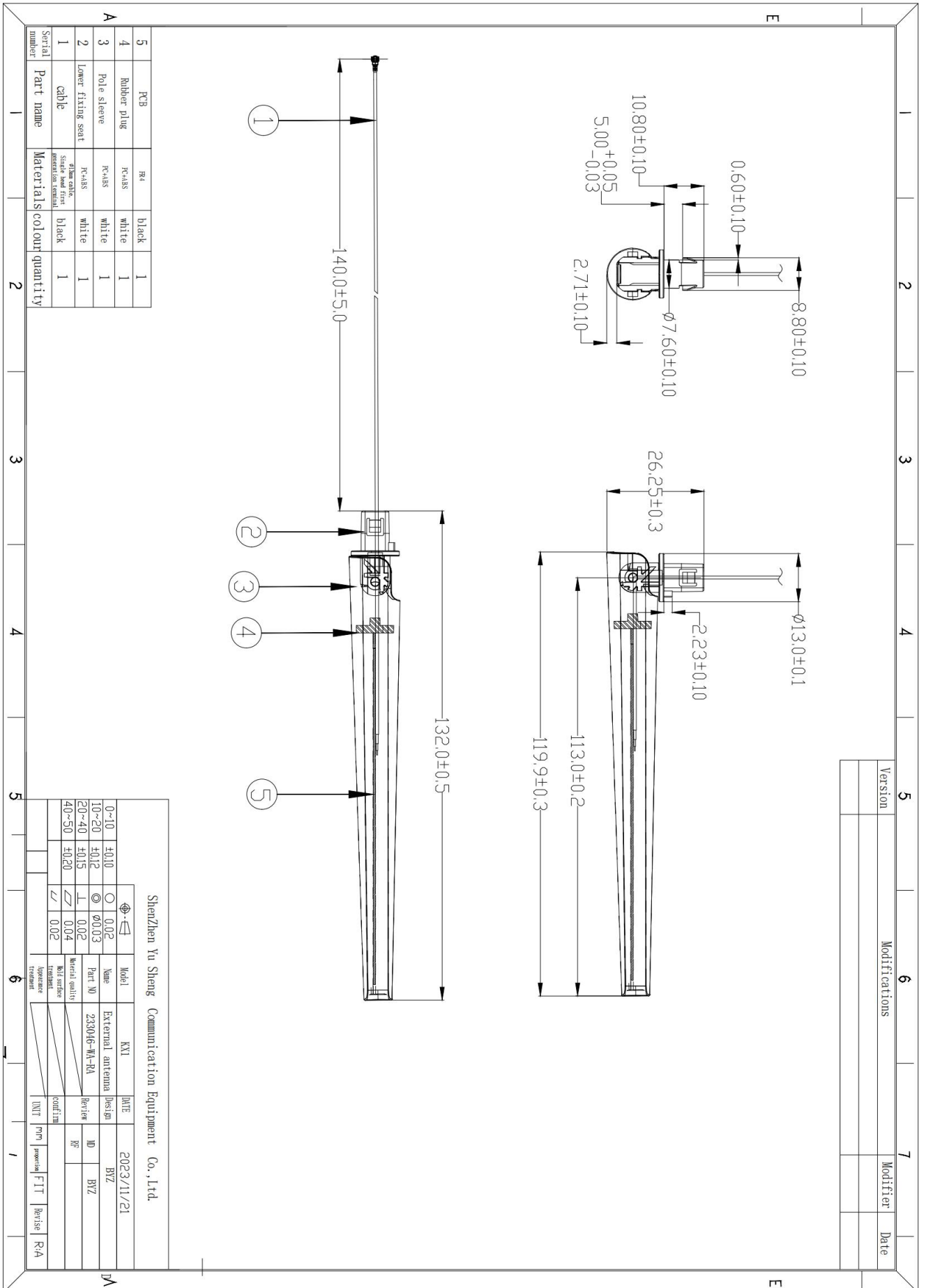


2.2.8 ota information

Channe l	2.4 b模			2.4 g模		
	1	6	12	1	6	12
TRP (dBm)	16.78	16.61	17.51	14.9	15.32	15.7
TIS (dBm)	-82.82	-83.01	-83.32	-69.68	-70.58	-70.96

Channe l	2.4n		
	1	6	12
TRP (dBm)	14.83	15.29	15.69
TIS (dBm)	-67.78	-68.07	-68.89

### 3.structural drawings



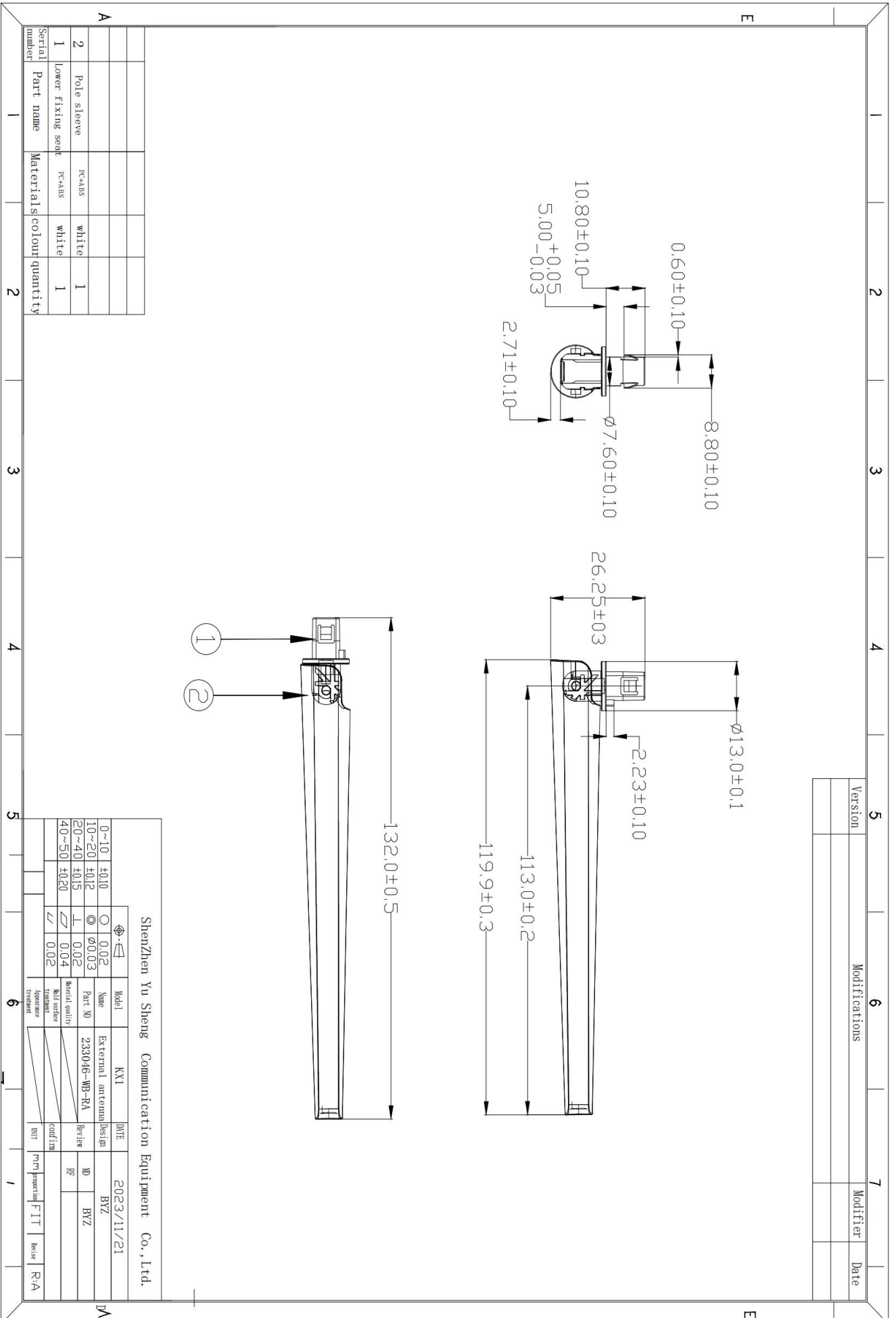
Version	Modifier	Date

Serial number	Part name	Materials	colour	quantity
5	PCB	R4	black	1
4	Rubber plug	PC+ABS	white	1
3	Pole sleeve	PC+ABS	white	1
2	Lower fixing seat	PC+ABS	white	1
1	cable	Stainless steel cable (material on external)	black	1

Model	Name	Part No	Material quality	Material	Surface treatment	Model	Part No	Material quality	Material	Surface treatment
0~10	±0.10	○ 0.02	External antenna	2023/11/21	BYZ	23046-WA-RA	BYZ	BYZ	RA	RA
10~20	±0.12	◎ 0.03	Design							
20~40	±0.15	⊥ 0.02	Review							
40~50	±0.20	∠ 0.04	Review							
		∠ 0.02	Review							

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Version	Modifications	Modifier	Date

Serial number	Part name	Materials	colour	quantity
1	Lower fixing seat	PC+ABS	white	1
2	Pole sleeve	PC+ABS	white	1

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Model	KX1	DATE	2023/11/21
Name	External antenna design	BYZ	
Part No	233046-WB-RA	BYZ	
Material quality		RF	
Mold surface treatment		conf:im	
Dimensional tolerance		ENT	
		PP/PP production	FIT
			Revise
			R/A