

Multi-frequency Multi-constellation compatible antenna
FMSP-QZSS-Q55-BP-35dB-3W Specification

Rev. 1.0

3/12/2021

Nissei Limited

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Revision Details

Rev. No.	Date	Contents/Purpose
1. 0	3/12/21	First Issue

1 Antenna Specification

1.1 Antenna Basic Specification

① Model

FMSP-QZSS-Q55-BP-35dB-3W

This is an outdoor antenna with a Multi-frequency Multi-constellation compatible circularly polarized antenna "FMSP-QZSS-Q55" and a gain of 35dB LNA "FVC3.3V-36" in a resin case.

We have prepared cable lengths of 1m, 3m, and 5m, so please select and order according to your application.

② Basic Specification

Items		Specification		Remarks	
Model		FMSP-QZSS-Q55-BP-35dB-3W		Antenna: Built-in FMSP-QZSS-Q55 LNA: Built-in FVC 3.3V-36	
Product name		GNSS antenna with 35dB LNA		-	
External dimensions		110mm × 40mm × 25mm (Vertical x horizontal x height)		Does not include connection cables.	
Weight		About 47g		-	
Connector		SMA-J		Waterproof	
Support Constellation	Band name	MHz		-	
GPS/QZSS	L5	1176.45		Bandwidth [MHz]	±12.45
	L2	1227.6			±15.35
QZSS/Galileo	L6/E6	1278.75			±21.00
GPS/QZSS/Galileo	L1/E1	1575.42			±15.35
Galileo	E5a	1164.00		-	
	E6	1278.75		For E6, see L6 in QZSS.	
	E5b	1215.00		-	
	E1	1575.42		For E1, see GPS / QZSS L1.	
GLONASS	G2	1246.00		Gain at Zenith (90°)	
	G1	1602.56			
Beidou	B2	1207.14		-	
	B3	1268.52			
	B1	1561.10			
Gain at Zenith (90°)	Band name	Antenna		AR	LNA
		Maximum value[dBic]	Average value[dBic]	At zenith[dB]	Gain[dB]/NF[dB]
GPS/QZSS	L5	2.10	0.89	2.63	37/0.65
	L2	2.39	1.49	2.22	37/0.65
QZSS	L6/E6	1.77	0.75	1.75	36/0.65
GPS/QZSS	L1/E1	0.20	-0.67	1.60	34/0.6
Galileo	E5a	1.16	0.40	1.43	37/0.65
	E5b	2.16	0.98	2.16	37/0.65
GLONASS	G2	2.28	0.98	2.20	37/0.65
	G1	-0.23	-0.55	1.15	33/0.6
Beidou	B2	1.82	0.79	2.83	37/0.65
	B3	2.00	0.73	2.63	36/0.65
	B1	-0.65	-1.59	2.32	34/0.6
Nominal Impedance		50 Ω		-	
Operating voltage		3.3 V (1.5~3.7 V)		-	
Operating current		8 mA (at 3.3 V)		-	
Usage environment	Operating temperature	-40 °C ~ 105 °C		-	
	Storage temperature	-40 °C ~ 150 °C		-	
	Outdoor installation	○ (equivalent to IPx7)		Environment where salt water is applied and ultraviolet rays are strong and salt is decomposed into hydrochloric acid is NG	
	Installation on metal	○		-	
Mounting method		Double-sided tape or screwing		Mounting screws are not included.	
RoHS compliant		Supported		-	
Package	Antenna	1 pcs / bag, 10 Pcs / small box, 5 small boxes / large box		Antistatic plastic bag	
	Cable	1 pcs / bag, 10 bags / large bag		Plastic bag	

③ How to specify the cable

Model	How to specify the cable length			Remarks
	1m	3m	5m	
FMSP-QZSS-Q55-BP-35dB-3W	1.5D-1M-SMAP-SMAPW	1.5D-3M-SMAP-SMAPW	2.5D-5M-SMAP-SMAPW	The SMA-P connector on the antenna side is waterproof, and the SMA-P connector on the receiver side is non-waterproof.

④ Manufacturing

Japan, manufacturing contractor: Favorite Co., Ltd.

⑤ Free warranty period

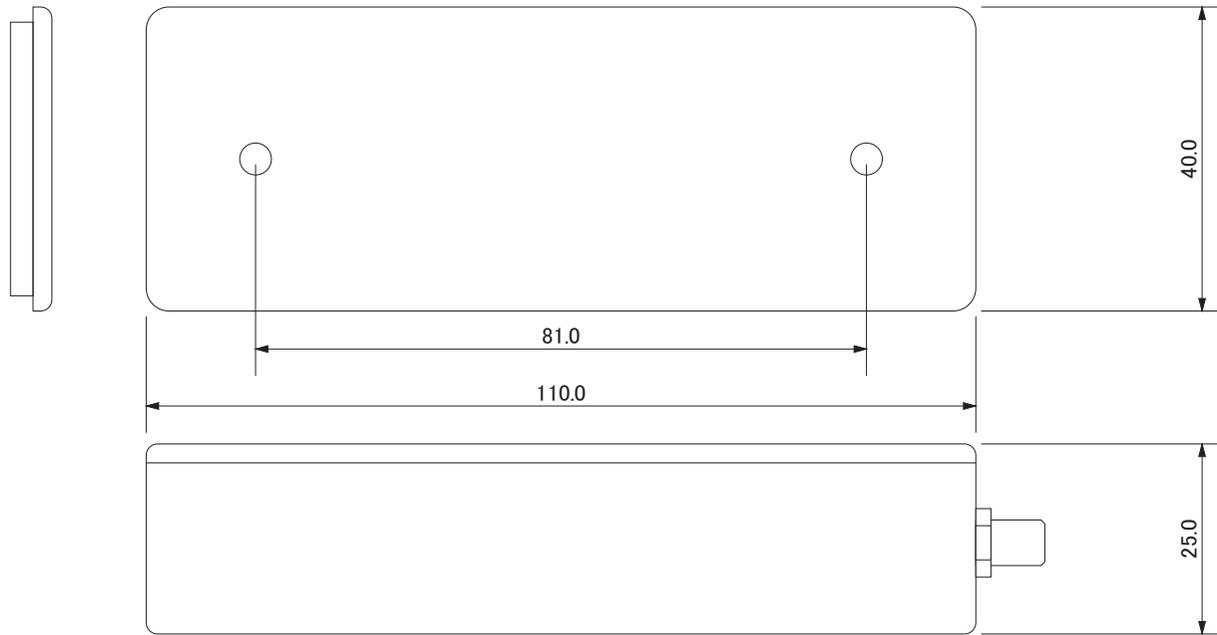
1 year after delivery.

Defective products will be replaced with replacement products without repair.

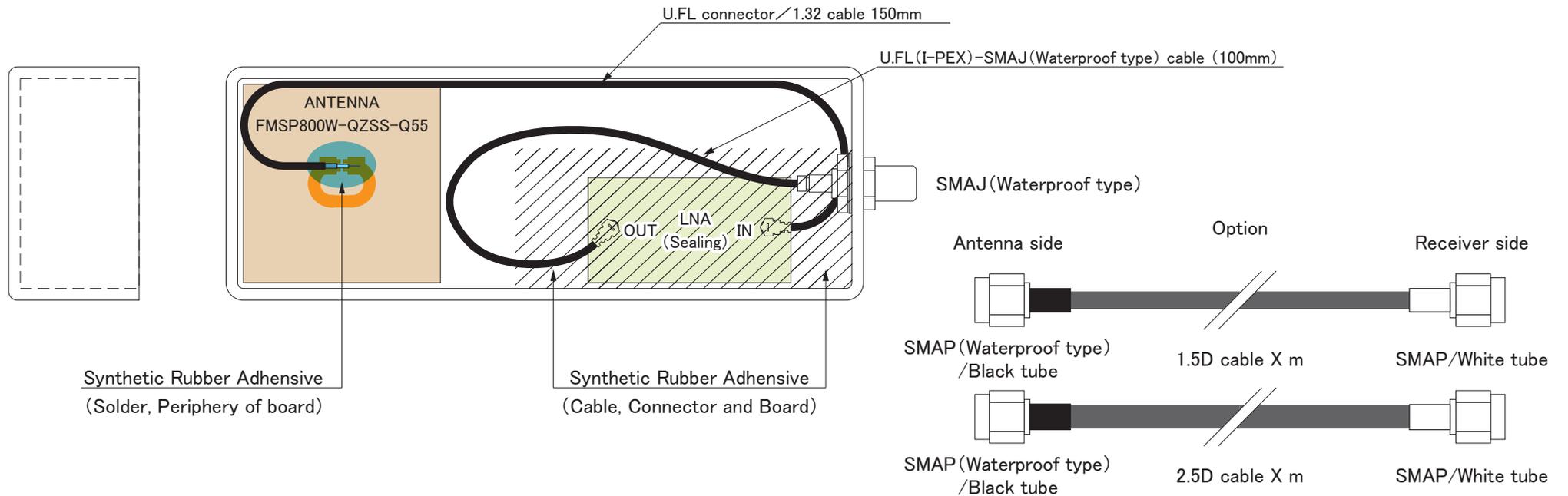
⑤ Precautions regarding use

- For detailed specifications of FMSP-QZSS-Q55, refer to the FMSP-QZSS-Q55 specifications separately.
- For detailed specifications of FVC3.3V-36, refer to the FVC3.3V-36 specifications separately.
- Since this product was developed exclusively for reception, it does not take into consideration the "technical suitability" of the Radio Law.
- In addition to the device specifications, additional costs will be incurred for creating materials and certificates.
- When we directly export this product overseas, there is an in-house examination. Please let us know in advance the country of export and the intended use.
- product inspection is based on our standards, and if you apply the inspection standards specified by your company, it will be a separate quotation.
- The specifications of this product may be changed when the materials used are difficult to obtain, or due to the end of sales or improvements / changes in the specifications of the GNSS system.
- If you have not ordered the product for more than 2 years and you do not contact us to continue, we will manage the product as if it was finished.
- We are not liable for any damages or lost profits caused by unforeseen special circumstances such as natural disasters.
- The maximum amount of liability will be the price of the purchased product.
- Refer to the following URL for various antenna materials. <http://www.nisseiantenna.com/>

1.2 Antenna Configuration and Mounting Position of Cable

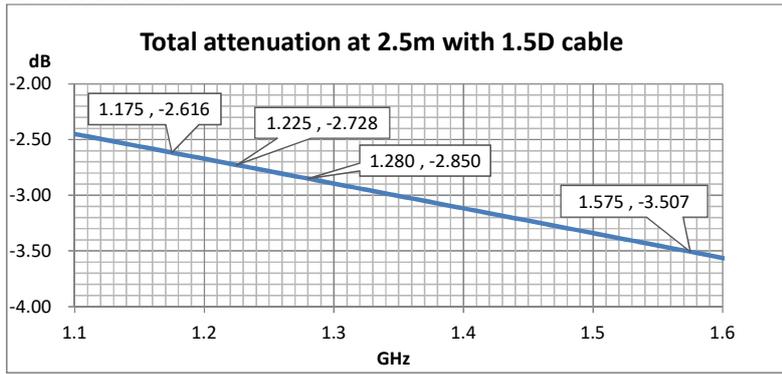


- Double sided tape
- Screwed hole existing



1.3 Cable attenuation

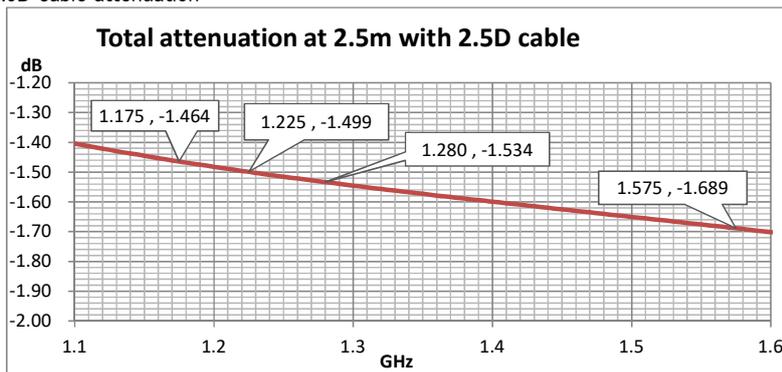
① 1.5D cable attenuation



Band	MHz	≐ MHz	Attenuation at 2.5m (dB)	Attenuation rate (dB/m)
L5	1176.45	1175	-2.616	-1.05
L2	1227.60	1225	-2.728	-1.09
L6	1278.75	1280	-2.85	-1.14
L1	1575.42	1575	-3.507	-1.40

1.5D		Cable length and attenuation		
Band	MHz	1m	3m	5m
L5	1176.45	-1.05	-3.14	-5.23
L2	1227.60	-1.09	-3.27	-5.46
L6	1278.75	-1.14	-3.42	-5.70
L1	1575.42	-1.40	-4.21	-7.01

② 2.5D cable attenuation

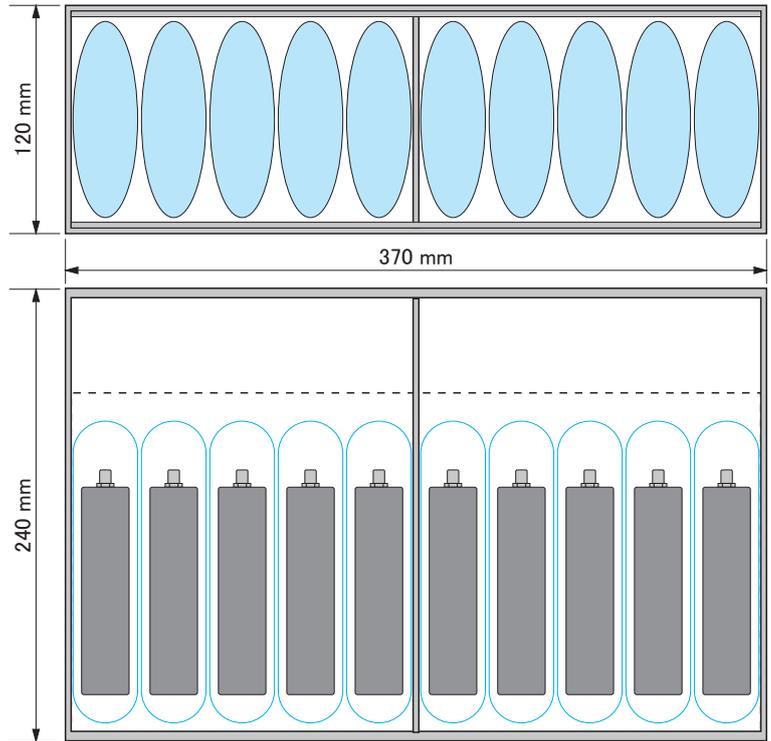
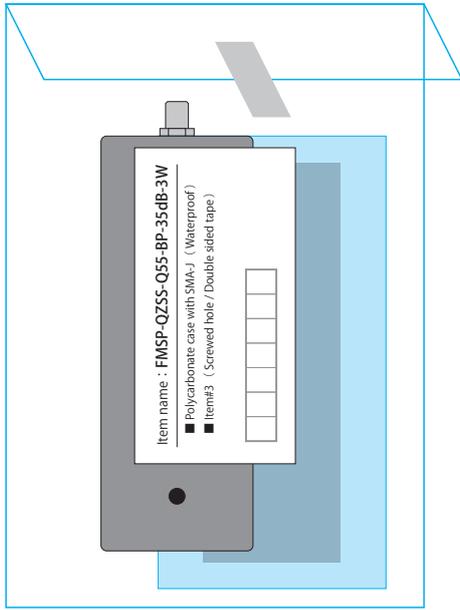


Band	MHz	≐ MHz	Attenuation at 2.5m (dB)	Attenuation rate (dB/m)
L5	1176.45	1175	-1.464	-0.59
L2	1227.60	1225	-1.499	-0.60
L6	1278.75	1280	-1.534	-0.61
L1	1575.42	1575	-1.689	-0.68

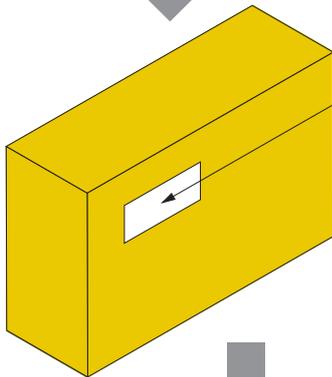
2.5D		Cable length and attenuation		
Band	MHz	1m	3m	5m
L5	1176.45	-0.59	-1.76	-2.93
L2	1227.60	-0.60	-1.80	-3.00
L6	1278.75	-0.61	-1.84	-3.07
L1	1575.42	-0.68	-2.03	-3.38

1.4 Packing Specification FMSP-QZSS-Q55-BP-35dB-3W

Individual packing with Antistatic bag
Including double sided tape



Small box for 10pcs

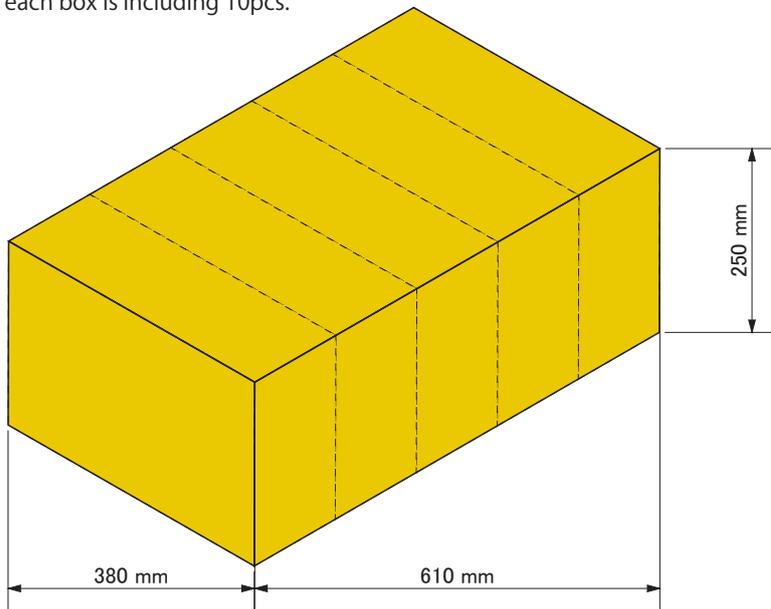
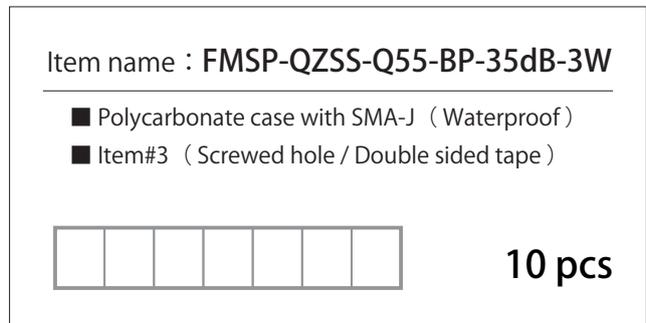


Label on the small box for 10pcs

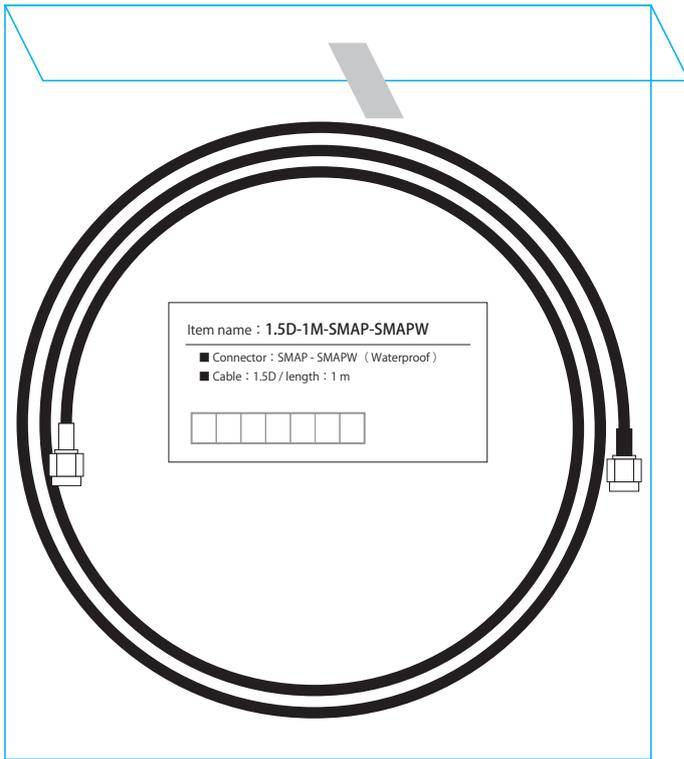


Packing example for 5 small boxes,
each box is including 10pcs.

(Label example)

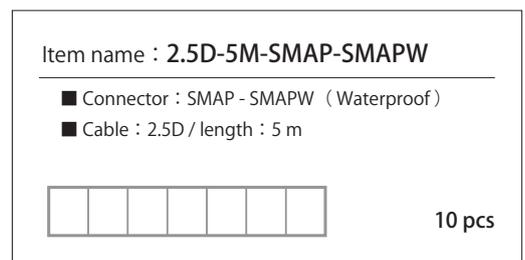
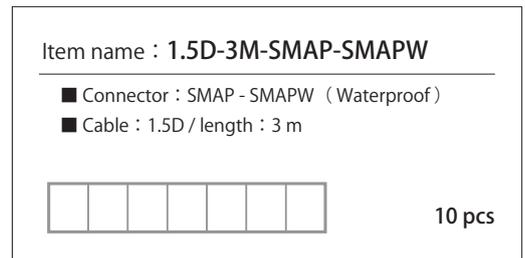
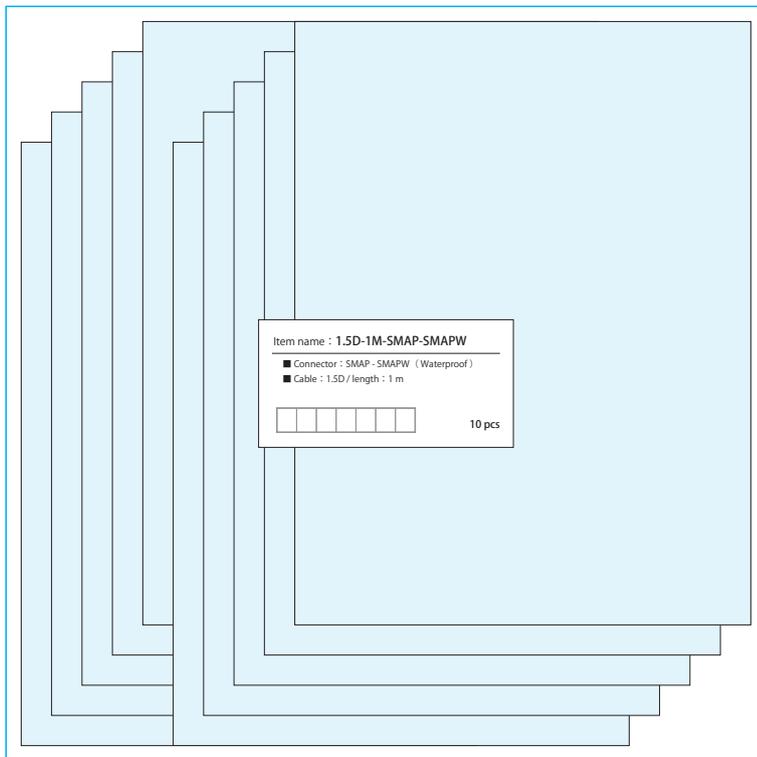
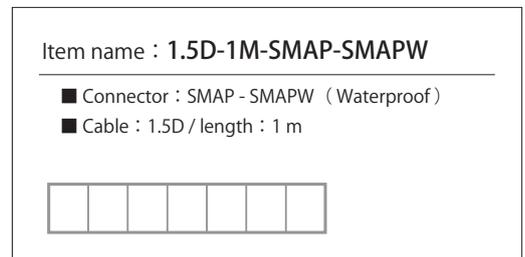


■ Option : 1.5D-1M-SMAP-SMAPW / 1.5D-3M-SMAP-SMAPW / 2.5D-5M-SMAP-SMAPW



Individual packing : Connector and Cable assy
with transparent plastic bag

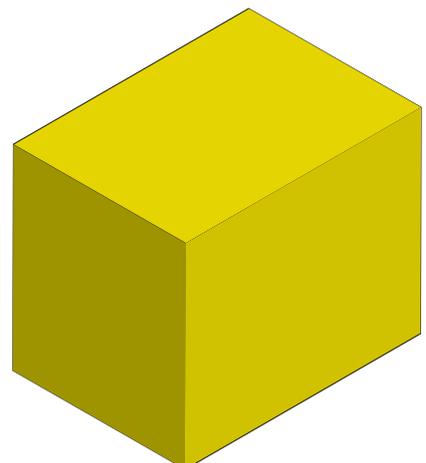
(Label example)



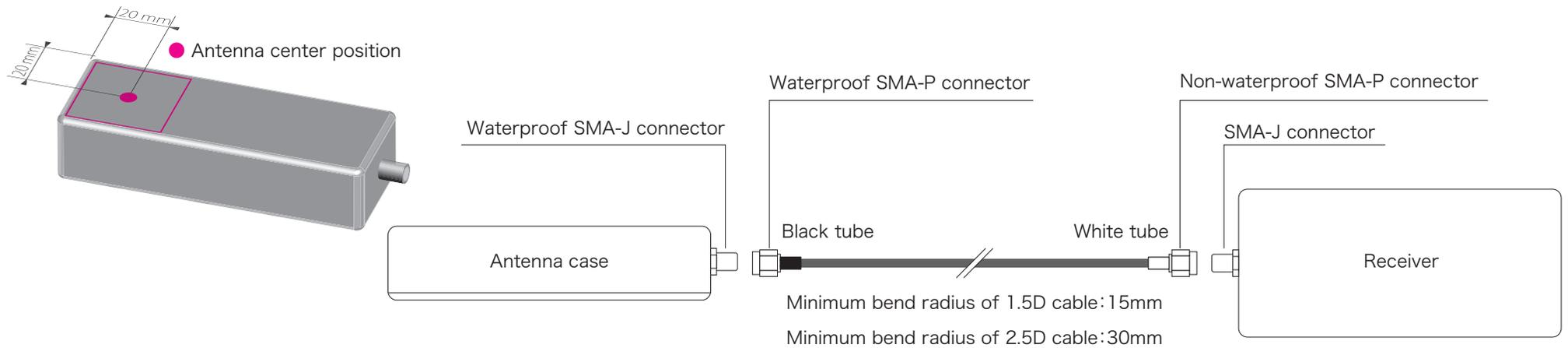
10 individual bags are put in another large bag



Put in the shipping box



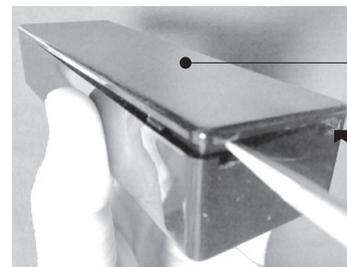
1.5 Precautions when installing the antenna



① How to install the antenna

- Install the antenna case horizontally to the ground.
- Check the center position of the antenna.
- For screwing, refer to How to remove the case bottom plate.
- The bottom plate should be attached and detached no more than 2 to 3 times.
When using double-sided tape, clean the sticking surface before installing.
- If the outer shape of the cable is deformed when the cable is fixed, the same phenomenon as disconnection will occur at the deformed part.
- The cable has a minimum bend radius, and below the minimum bend radius, the same phenomenon as disconnection occurs.
- If noise in the same band as the frequency band used by GNSS is generated near the antenna, positioning may not be possible or accuracy may drop.
- There is a black tube on the waterproof SMA-P connector side that connects to the antenna case.
- The SMA-P connector that connects to the receiver is not waterproof.
To make it waterproof, take waterproof measures including the receiver.

② How to remove / attach the bottom plate of the screwed case



bottom plate

