



TAOGLAS®



Datasheet

Titan GPS/Galileo Active Antenna

Part No:
AA.105.301111

Features:

- Magnetic Mount
- Covert stylish design
- Wide band input voltage
- Gain can be adjusted for your application (10dB~31dB)
- IP-67 Waterproof
- Dimensions: 43.3 x 32.7 x 14mm
- Cable: 3m RG174
- Connector: SMA (M) Straight
- Cable and connector customizable
- RoHS and REACH Compliant

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1. Introduction



The Titan AA.105 is a small magnetic mount external active GPS/Galileo antenna. The Titan AA.105 is ideal for robust, covert installations where durability and small size is paramount. It is fully IP67 waterproof rated for installations where water ingress may be an issue. With a small footprint of just 43.3 x 32.7 mm, the Titan AA.105 can be used in applications where space may be a constraint, and with its magnetic mounting style it is perfect for use in transportation applications.

Typical Applications Include:

- Commercial Transportation
- E-Scooters/Electric Vehicles
- Robotics and Autonomous Vehicles
- Asset Tracking

The Titan is also available in an adhesive mount version – [AA.108](#). For further information, please contact your regional Taoglas customer support team.

2. Specifications

GNSS Frequency Bands Covered

GPS/QZSS	L1 1575.42MHz	L2 1227.6MHz	L5 1176.45MHz	L6 1278.75MHz			
	■	□	□	□			
GLONASS	L5R 1176.45MHz	L3PT 1201.5MHz	L2PT 1246MHz	L1CR 1575.42MHz	L1PT 1602MHz		
	□	□	□	■	□		
Galileo	E5a 1176.45MHz	E5b 1201.5MHz	E4 1215MHz	E3 1256MHz	E6 1278.75MHz	E2 1561MHz	E1 1575.42MHz
	□	□	□	□	□	□	■
BeiDou	B1 1561MHz	B2 1207.14MHz	B3 1268.52MHz				
	□	□	□				
Compass	E5B(B2)/ E6(B3) 1268.56MHz	E2(B1) 1561MHz					
	□	□					
SBAS	Omnistar 1542.5MHz	WAAS/EGN OS 1575.42MHz					
	□	■					

Electrical

Centre Frequency	1575.42±3MHz
Bandwidth	10MHz
VSWR	1.92 Max
Axial ratio	3dB Typ.
Gain @ Zenith	2dBi Typ.
Impedance	50Ω
Polarization	RHCP

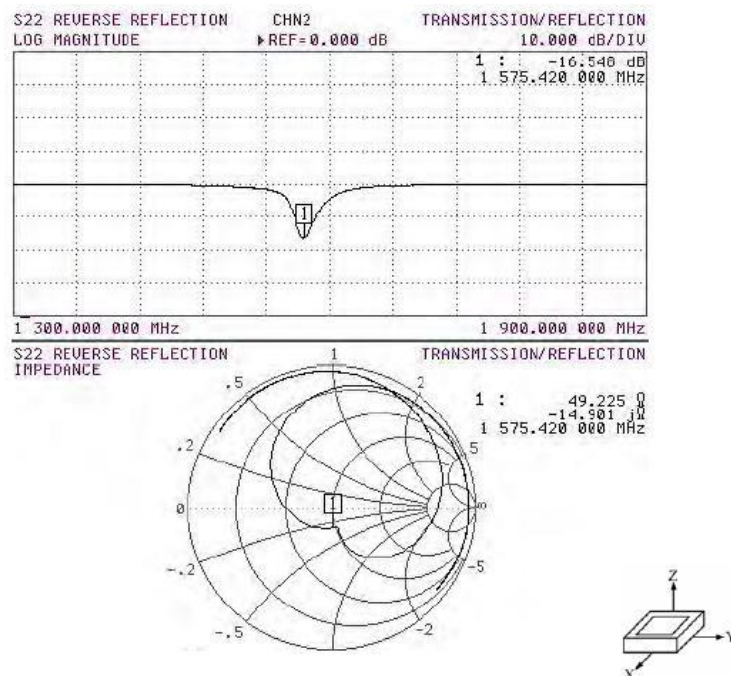
LNA and Filter Electrical Properties	
Frequency	1575.42MHz
Impedance	50Ω
VSWR	1.92 Max.
Gain	30dB Typ.
Gain at Connector*	28.4dB
DC Power Input	2.7~5V
Noise Figure	1.5dB Typ.
Power Consumption	4.7mA @2.7V 6mA @3.3V 10.3mA @5V
Pout 1dB Gain Compression Point	-35.7dBm
Mechanical	
Dimensions	43.3 x 32.7 x 14 mm
Weight	64g
Cable	3m RG-174
Connector	SMA Male Straight
Environmental	
Operating temp	-40°C ~ +85°C
Storage Temp	-40°C ~ +90°C

*Formula = Patch Antenna Average Gain + LNA typical gain – RG-174 cable loss @1.2dB per meter = Gain at connector
Gain at the Connector - Patch Gain 2dB + LNA Gain 30dB – Cable loss of 1.2dB per metre (@3m = 3.6dB) = 28.4dB approx.

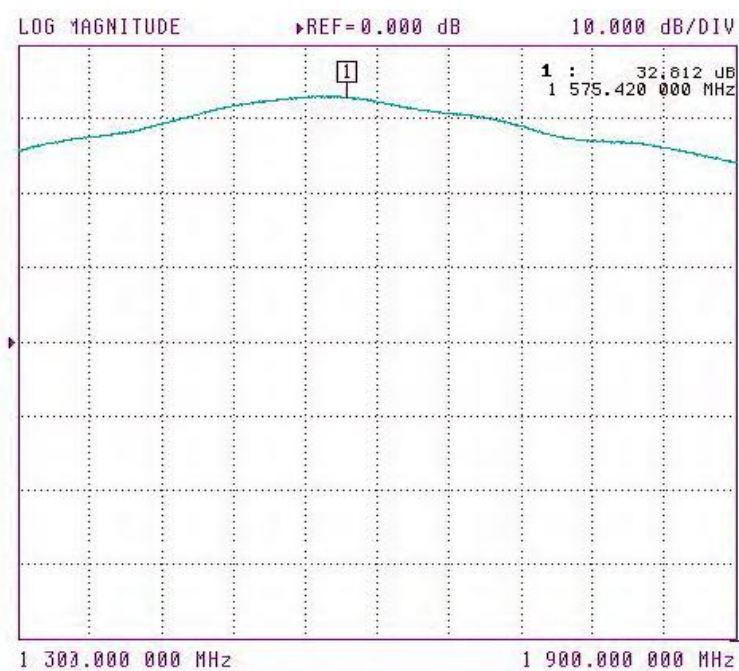
RG-174 cable attenuation(dB/100m)												
Frequency(GHz)	0.5	1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6
Cable Loss(dB)	67	110	127	153	168	183	207	229	252	272	291	311

3. Antenna Characteristics

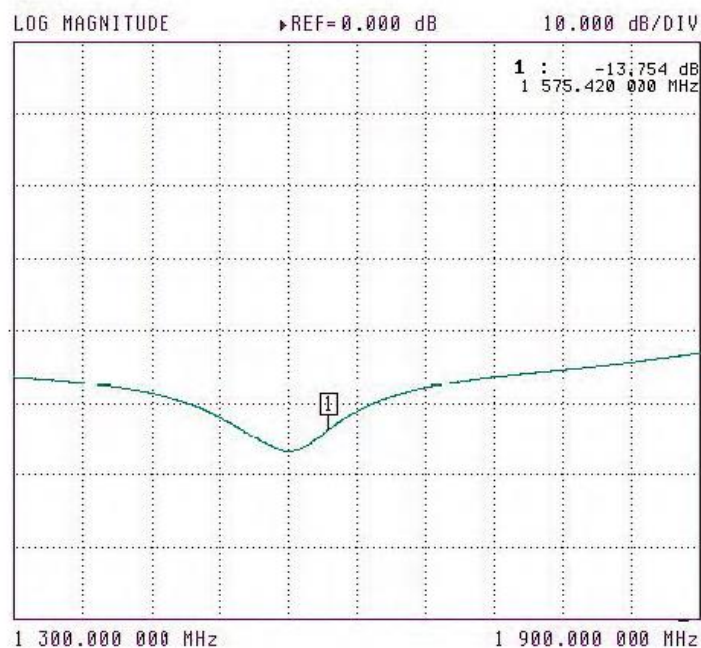
3.1 Return Loss



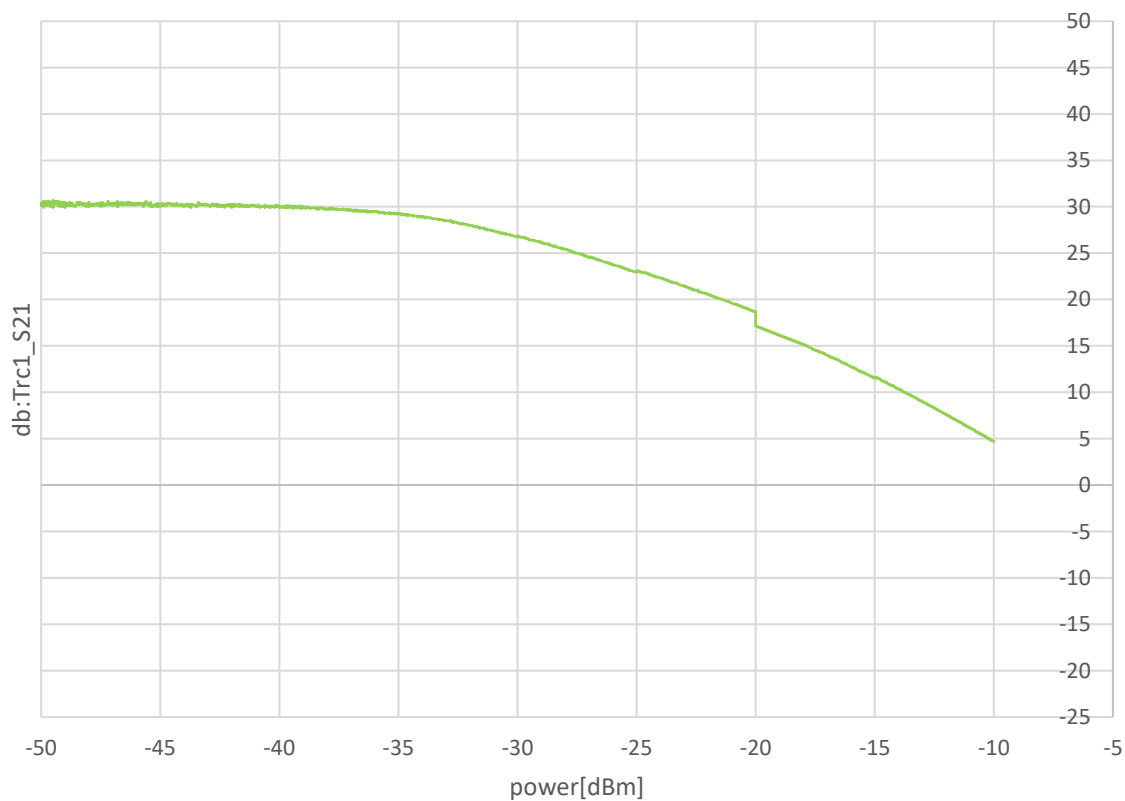
3.2 LNA Gain



3.3 LNA S22

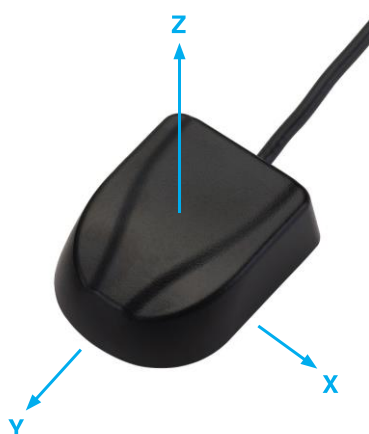


3.4 P1dB Point

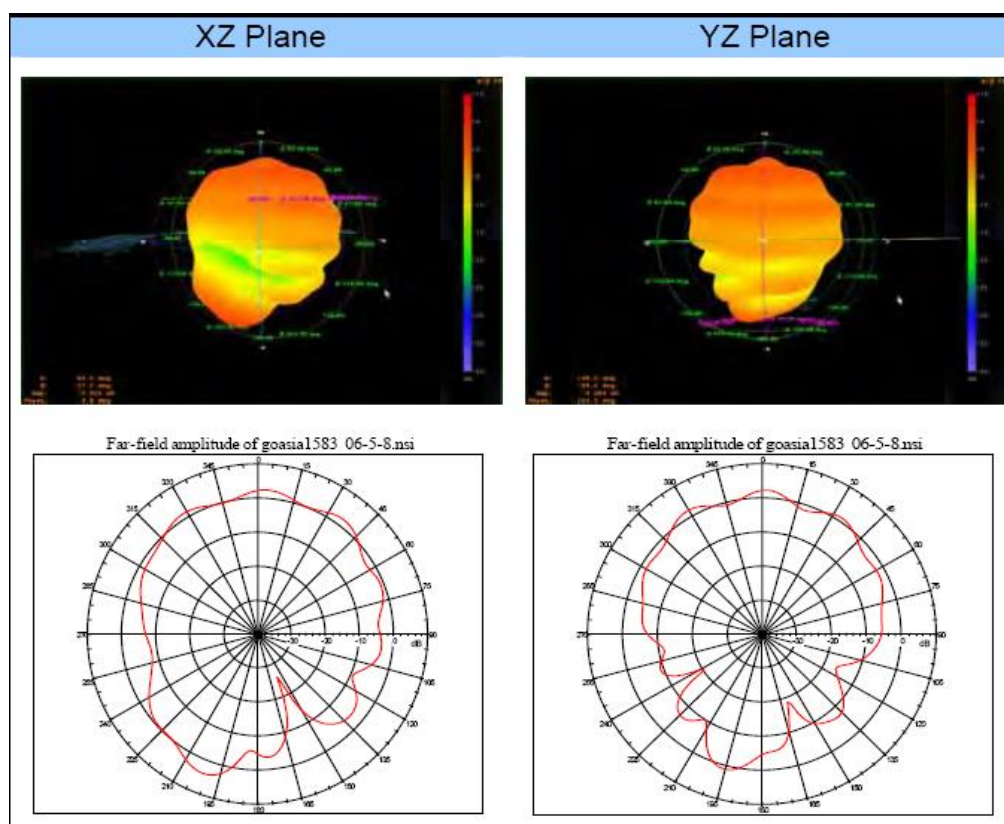


4. Radiation Patterns

4.1 Test Setup



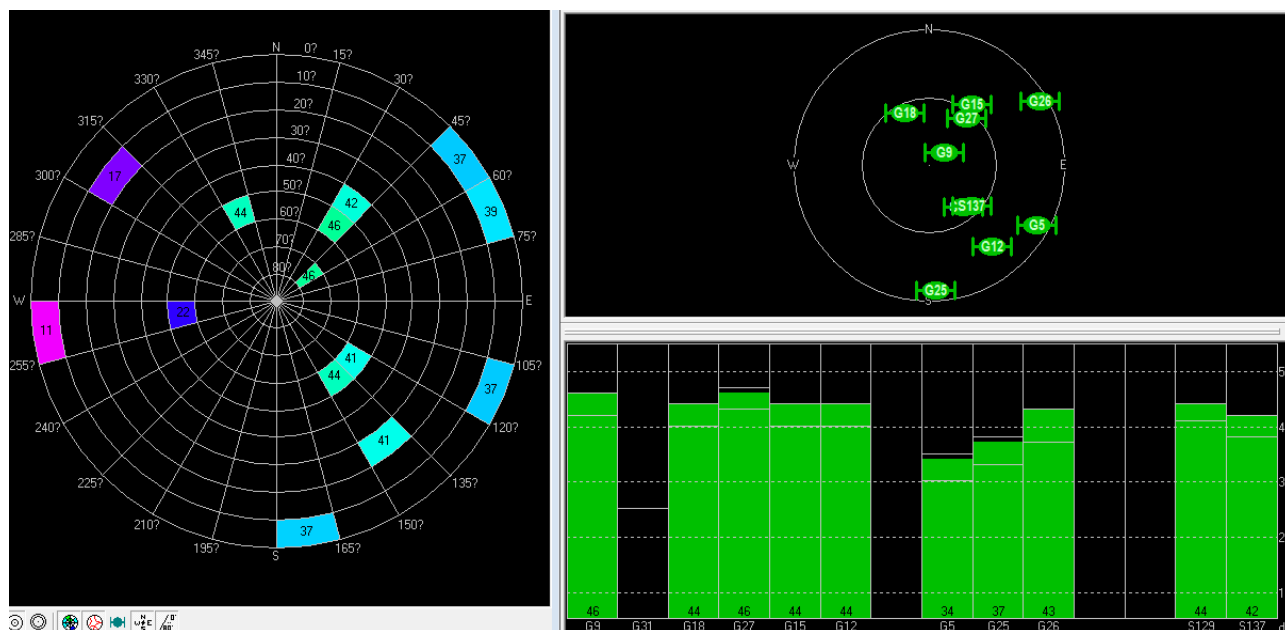
4.2 3D and 2D Radiation Patterns



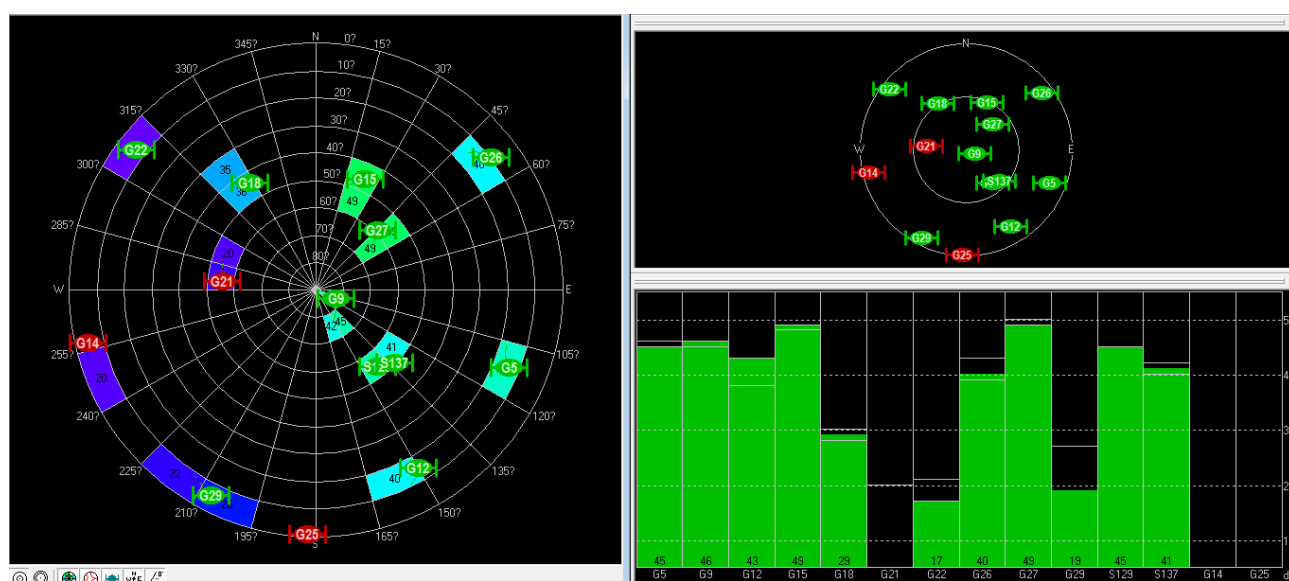
5. Antenna Field Test Results

Antenna was connected to a U-blox EVK-6H evaluation kit under open sky conditions.

- 1.8 V
Cold Start needs typically 40 seconds.

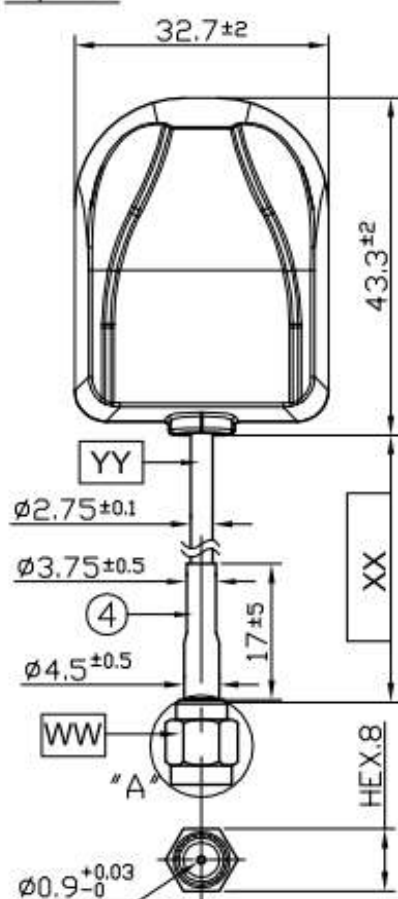


- 3.3V
Cold Start needs typically 40 seconds.

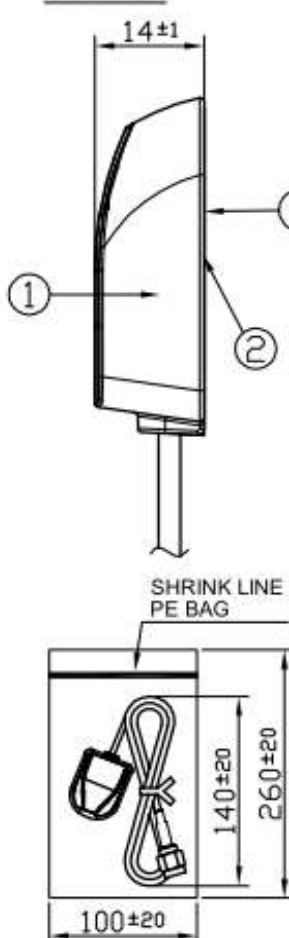


6. Mechanical Drawing

Top View



Side View



Bottom View

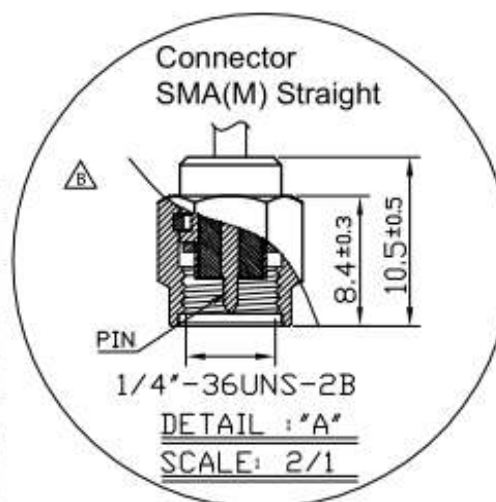


NOTES:

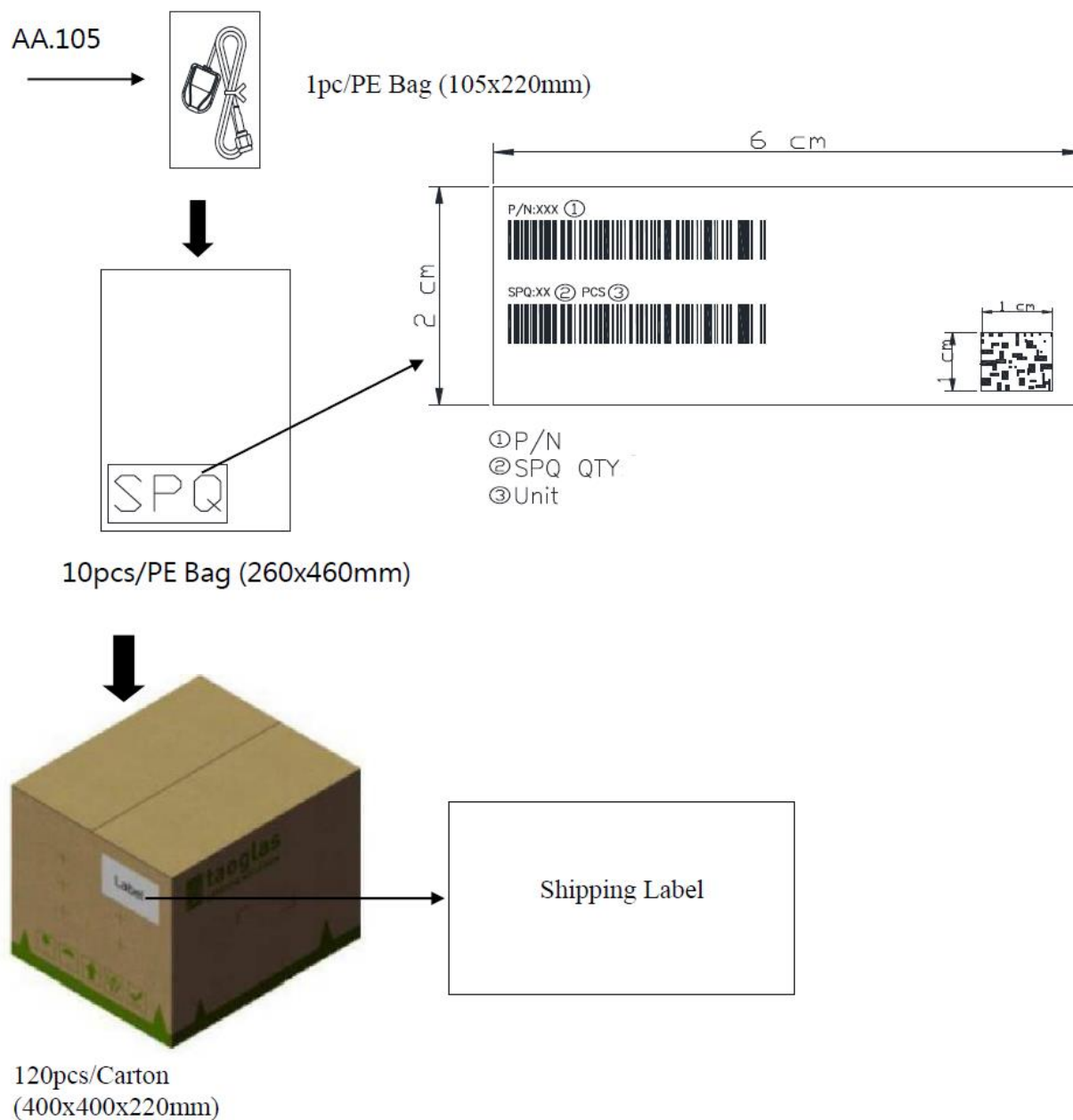
1. Sticker area.

	Name	Material	Finish	QTY
1	GPS Antenna Top	PC	Black	1
2	GPS Antenna Bottom	PC	Black	1
3	Sticker	Matte Silver PET	Silver	1
4	Heat Shrink Tube	PE	Black	1

	Name	Spec	Finish	QTY
WW	Connector Type	SMA(M) Straight	Gold	1
XX	Cable Length	3000 \pm 30mm	Black	1
YY	Cable Type	RG174	Black	1



7. Packaging



Changelog for the datasheet

SPE-12-8-024 – AA.105.301111

Revision: H (Current Version)

Date:	2021-11-17
Changes:	Full datasheet template update & added P1dB Point.
Changes Made by:	Gary West

Previous Revisions

Revision: G

Date:	2019-10-22
Changes:	
Changes Made by:	Jack Conroy

Revision: B

Date:	2012-03-21
Changes:	
Changes Made by:	

Revision: F

Date:	2017-07-10
Changes:	Updated as per PCN -17-8-083
Changes Made by:	Andy Mahoney

Revision: A (Original First Release)

Date:	2012-03-08
Notes:	
Author:	

Revision: E

Date:	2013-07-18
Changes:	
Changes Made by:	

Revision: D

Date:	2012-08-01
Changes:	
Changes Made by:	

Revision: C

Date:	2012-06-11
Changes:	
Changes Made by:	



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