

Antenna Cable

YSAN027xx Datasheet

Antenna Services

Version: 1.1

Date: 2022-08-08

Status: Released



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About the Document

Revision History

Version	Date	Author	Note
-	2022-07-18	Sly LIU	Creation of the document
1.0	2022-07-18	Sly LIU	First official release
1.1	2022-08-08	Sly LIU	Modified antenna photos and drawings.

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1 Product Description

1.1. YSAN027AA-YSAN027EA

To meet the requirements of devices for RF connection among antennas, modules, and motherboards, as well as long-distance wiring, Quectel provides customers with a wide range of RF cable products. These cables use high-quality materials and connectors to reduce the loss to the greatest extent, ensuring overall RF performance. Quectel also provides customized services according to customers' particular requirements for cable material, cable length, and connector type.

This datasheet is applicable for the following five cable assembly products (O-ring can effectively strengthen the waterproof performance of RF connector):

- YSAN027AA (with O-ring)
- YSAN027BA (with O-ring)
- YSAN027CA (with O-ring)
- YSAN027DA (with O-ring)
- YSAN027EA (with O-ring)

1.2. YSAN027FA-YSAN027JA

To meet the requirements of devices for RF connection among antennas, modules, and motherboards, as well as long-distance wiring, Quectel provides customers with a wide range of RF cable products. These cables use high-quality materials and connectors to reduce the loss to the greatest extent, ensuring overall RF performance. Quectel also provides customized services according to customers' particular requirements for cable material, cable length, and connector type.

This datasheet is applicable for the following five cable assembly products:

- YSAN027FA (Without O-ring)
- YSAN027GA (Without O-ring)
- YSAN027HA (Without O-ring)
- YSAN027IA (Without O-ring)
- YSAN027JA (Without O-ring)

2 Product Features

2.1. YSAN027AA-YSAN027EA

- Low loss
- Water Resistant



2.2. YSAN027FA-YSAN027JA

- Low loss



3 Product Specifications

3.1. YSAN027AA-YSAN027EA

3.1.1. Cable Construction

Item	Material	Diameter (mm)
Conductor	Silver plated copper wire	0.24
Insulator	FEP	0.7
Shield	Tinned copper wire	0.92
Jacket	FEP	1.13

3.1.2. Electrical Properties and Mechanical Properties

Item	Value
Impedance	50 \pm 2 Ω
Operating Frequency	DC–6000 MHz
Connector Type	SMA Female to IPEX IV
Operation Temperature	-20 °C to +85 °C
Return Loss	\geq 20 dB
Screening Effectiveness	500 MHz – 1 GHz: \geq -50 dB 1–3 GHz: \geq -60 dB; 3–6 GHz: \geq -65 dB

Frequency	Insertion Loss (dB)				
	YSAN027AA	YSAN027BA	YSAN027CA	YSAN027DA	YSAN027EA
698 MHz	-0.17	-0.26	-0.32	-0.40	-0.47
960 MHz	-0.20	-0.31	-0.40	-0.49	-0.58
1710 MHz	-0.31	-0.44	-0.56	-0.67	-0.80
2690 MHz	-0.49	-0.58	-0.75	-0.96	-1.11

3300 MHz	-0.43	-0.66	-0.81	-1.00	-1.20
3800 MHz	-0.61	-0.87	-1.01	-1.12	-1.33
4400 MHz	-0.56	-0.81	-1.02	-1.20	-1.44
5000 MHz	-0.67	-0.88	-1.26	-1.30	-1.65
5800 MHz	-0.81	-1.13	-1.15	-1.42	-1.85

3.2. YSAN027FA-YSAN027JA

3.2.1. Cable Construction

Item	Material	Diameter (mm)
Conductor	Silver plated copper wire	0.24
Insulator	FEP	0.70
Shield	Tinned copper wire	0.92
Jacket	FEP	1.13

3.2.2. Electrical Properties and Mechanical Properties

Item	Value
Impedance	50 \pm 2 Ω
Operating Frequency	DC–6000 MHz
Connector Type	SMA Female to IPEX IV
Operation Temperature	-20 °C to +85 °C
Return Loss	\geq 20 dB
Screening Effectiveness	500 MHz – 1 GHz: \geq -50 dB 1–3 GHz: \geq -60 dB; 3–6 GHz: \geq -65 dB

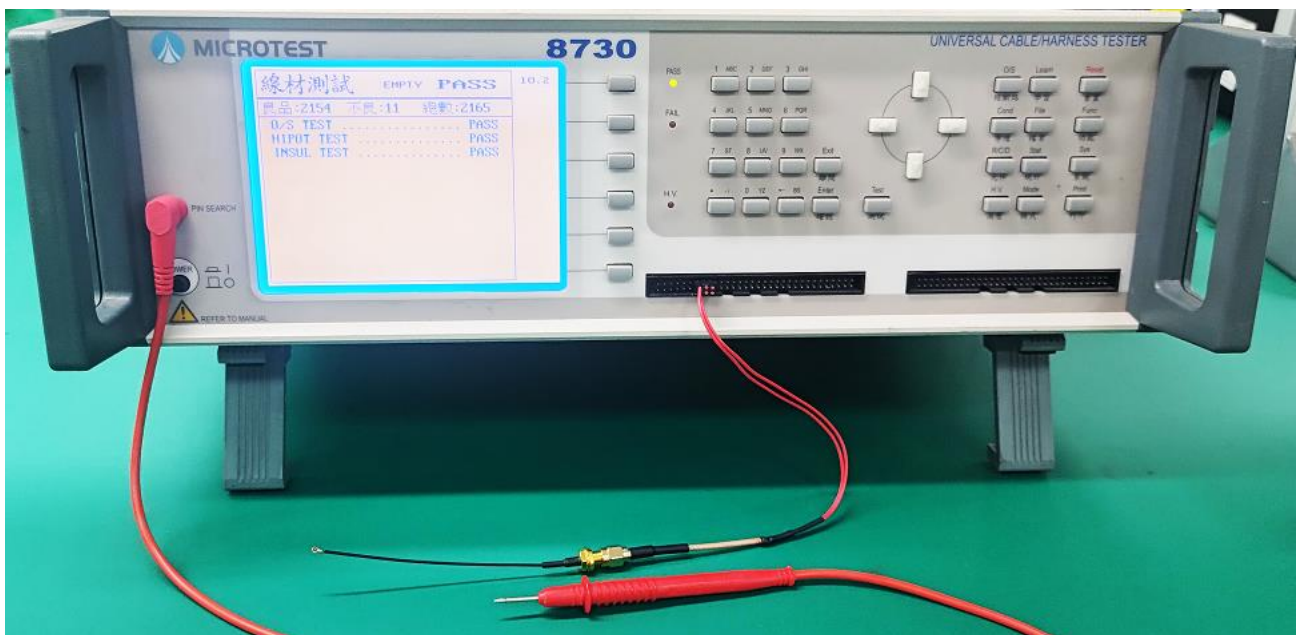
Frequency	Insertion Loss (dB)				
	YSAN027FA	YSAN027GA	YSAN027HA	YSAN027IA	YSAN027JA
698 MHz	-0.26	-0.40	-0.45	-0.55	-0.84
960 MHz	-0.32	-0.47	-0.52	-0.62	-1.00
1710 MHz	-0.46	-0.65	-0.73	-0.88	-1.37
2690 MHz	-0.61	-0.82	-0.98	-1.21	-1.82
3300 MHz	-0.72	-1.04	-1.24	-1.43	-2.10
3800 MHz	-0.93	-1.16	-1.36	-1.46	-2.21
4400 MHz	-0.86	-1.47	-1.64	-1.84	-2.50
5000 MHz	-0.90	-1.73	-1.92	-2.03	-2.87
5800 MHz	-1.20	-1.84	-2.05	-2.42	-3.30

4 Overall Performance

4.1. YSAN027AA-YSAN027EA

4.1.1. Test Environment

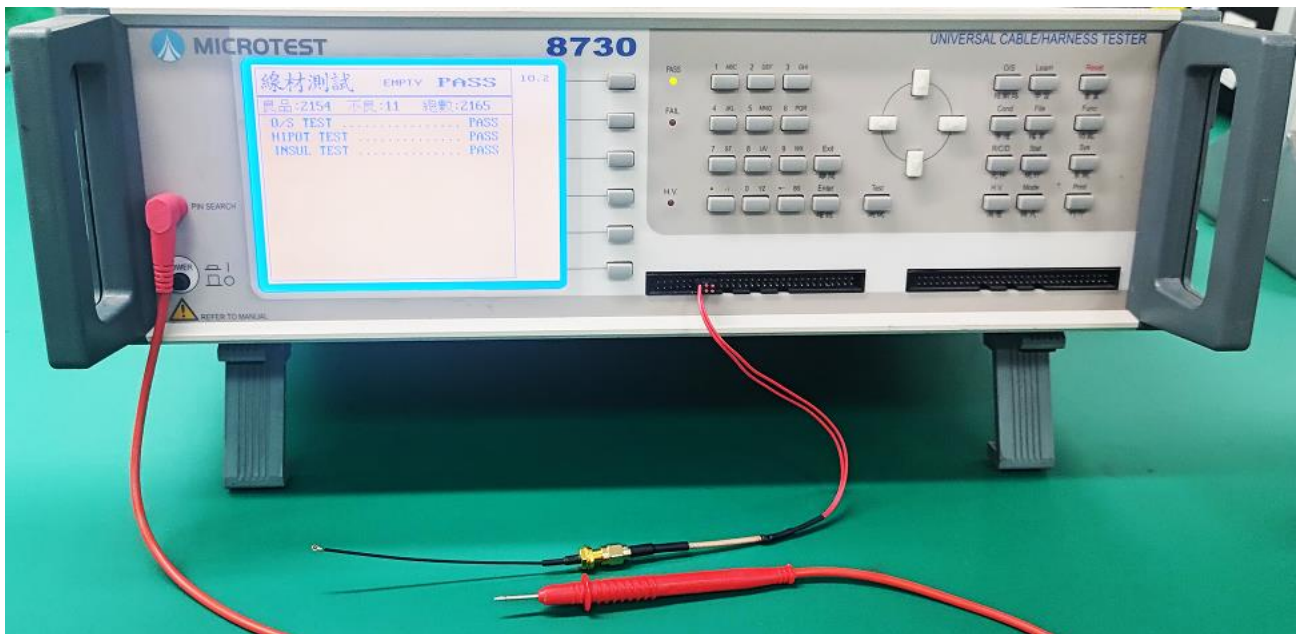
- Cable/Harness Tester: WB-500, 100 kHz – 6.0 GHz



4.2. YSAN027FA-YSAN027JA

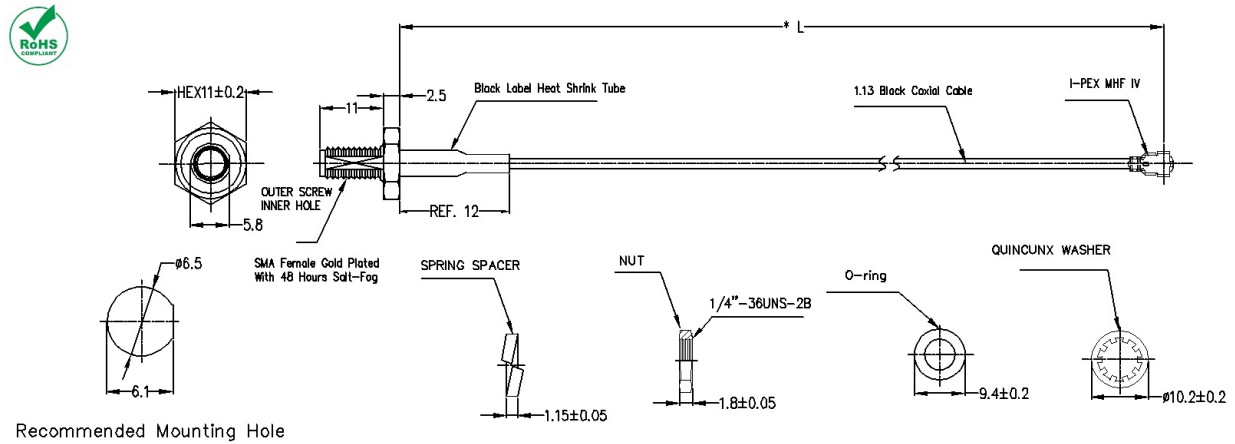
4.2.1. Test Environment

- Cable/Harness Tester: WB-500, 100 kHz – 6.0 GHz



5 Product Size

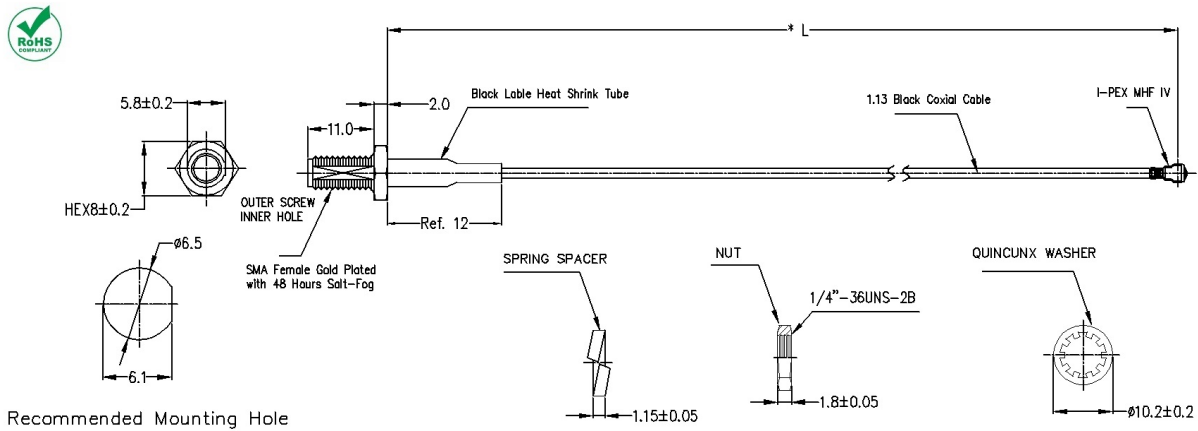
5.1. YSAN027AA-YSAN027EA



SMA CONNECTOR
(Inner Hole)

OC	* Length (mm)	Weight (g)
YSAN027AA	100 ±2 mm	4.65
YSAN027BA	150 ±3 mm	4.79
YSAN027CA	200 ±3 mm	4.97
YSAN027DA	250 ±5 mm	5.15
YSAN027EA	300 ±6 mm	5.29

5.2. YSAN027FA-YSAN027JA



SMA CONNECTOR
(Inner Hole)

OC	* Length (mm)	Weight (g)
YSAN027FA	150 ±3 mm	4.77
YSAN027GA	200 ±3 mm	4.95
YSAN027HA	250 ±5 mm	5.13
YSAN027IA	300 ±6 mm	5.27
YSAN027JA	500 ±10 mm	5.91