RF Cable Datasheet

Product OC: YM0003CA
Version: 2.3
Date: 2023-09-04
Status: Released

Product Name: RF Cable
Key Features:
Frequency Band: DC–6000 MHz
Cable Length: 200 mm
Connector Type: SMA Female to IPEX MHF 1
RoHS Compliant

Overview

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.

Contents

1 Specification

1.1. Electrical

Electrical	
Frequency Range	DC–6000 MHz
Impedance	50 Ω
VSWR	≤ 2.12
Return Loss	≤ -8.88 dB
Max Cable Loss	-1.97 dB
Screening Effectiveness	0.5–1 GHz: ≥ -50 dB 1–3 GHz: ≥ -60 dB 3–6 GHz: ≥ -65 dB

Electrical - Detail

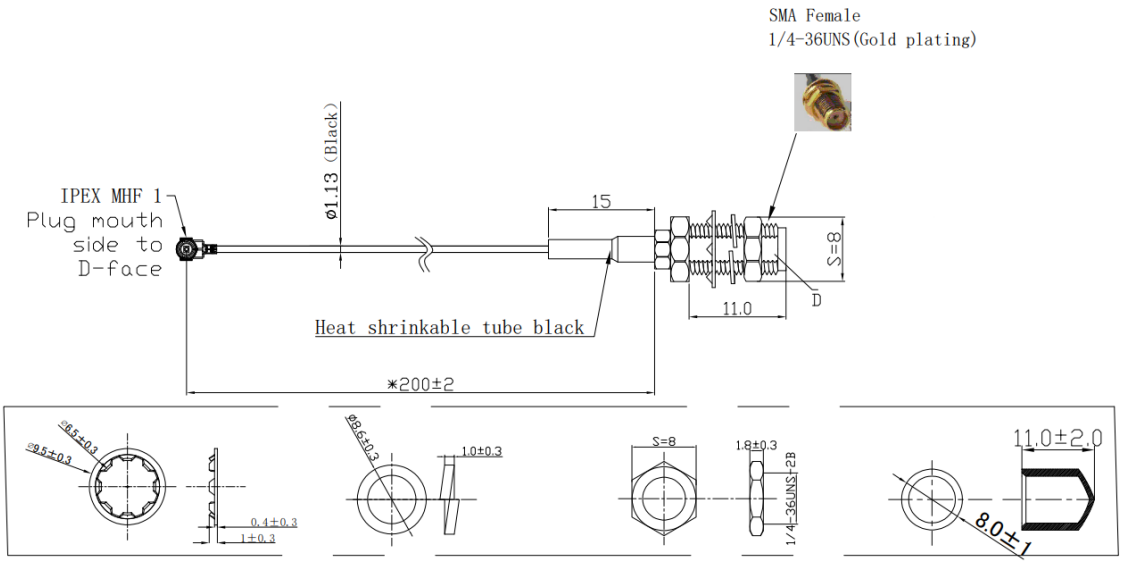
Band / SPEC	B87 /B88	B31 /B72 /B73	B71	B12 /B13 /B28	B5 /B8 /B26	N74 /N75 /N76	B1 /B2 /B3	B40	Wi-Fi 2G	B38 /B41	B42 /B48 /N77	N79	Wi-Fi 5G
	410-430	450-470	600–700	700–810	820–960	1420–1520	1700–2170	2300–2400	2400–2500	2500–2690	3300–4200	4400–5000	5150–5850
Max S11 VSWR	1.06	1.06	1.08	1.08	1.12	1.19	1.25	1.29	1.32	1.31	1.55	1.71	1.83
Max S22 VSWR	1.07	1.07	1.06	1.10	1.15	1.23	1.31	1.37	1.41	1.40	1.76	1.98	2.12
Max S11 Return Loss (dB)	-31.18	-30.05	-28.24	-27.93	-24.74	-21.18	-19.11	-17.97	-17.31	-17.41	-13.38	-11.68	-10.62
Max S22 Return Loss (dB)	-29.90	-28.90	-30.73	-26.84	-23.26	-19.89	-17.36	-16.13	-15.42	-15.49	-11.17	-9.66	-8.88
Max Cable Loss	-0.28	-0.30	-0.37	-0.41	-0.46	-0.62	-0.79	-0.84	-0.84	-0.85	-1.80	-1.91	-1.97

S21 (dB)													
Max Cable Loss S12 (dB)	-0.30	-0.31	-0.38	-0.42	-0.47	-0.62	-0.79	-0.82	-0.86	-0.89	-1.53	-1.71	-1.88

1.2. Mechanical & Environmental

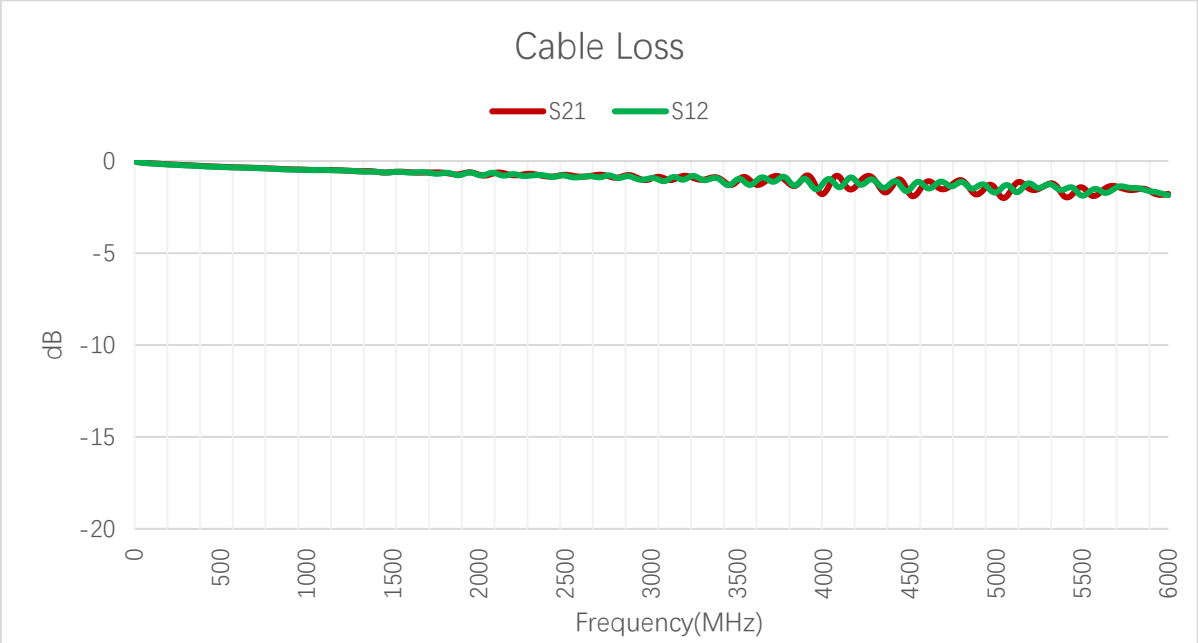
Mechanical		
Cable Type & Color & Length	Φ 1.13 & Black & 200 mm	
Item	**Material**	**Diameter (mm)**
Inner Conductor	Silver plated copper wire	0.24
Insulator	FEP	0.7
Outer Conductor	Tinned copper wire	0.92
Jacket	PVC	1.13
Connector Type	SMA Female to IPEX MHF 1	
Weight	Typ. 3.6 g	
Environmental		
Operation Temperature	-40 °C to +85 °C	
Storage Temperature	-40 °C to +85 °C	
RoHS Compliant	Yes	

2 Drawing


SMA Female
1/4-36UNS(Gold plating)
IPEX MHF 1
Plug mouth
side to
D-face
ø1.13 (Black)
15
S=8
D
11.0
Heat shrinkable tube black
*200±2
ø0.5±0.3
ø0.5±0.3
0.4±0.3
1±0.3
ø0.6±0.3
1.0±0.3
S=8
1.8±0.3
1/4-36UNS-2B
11.0±2.0
8.0±1

3 Detailed Performance

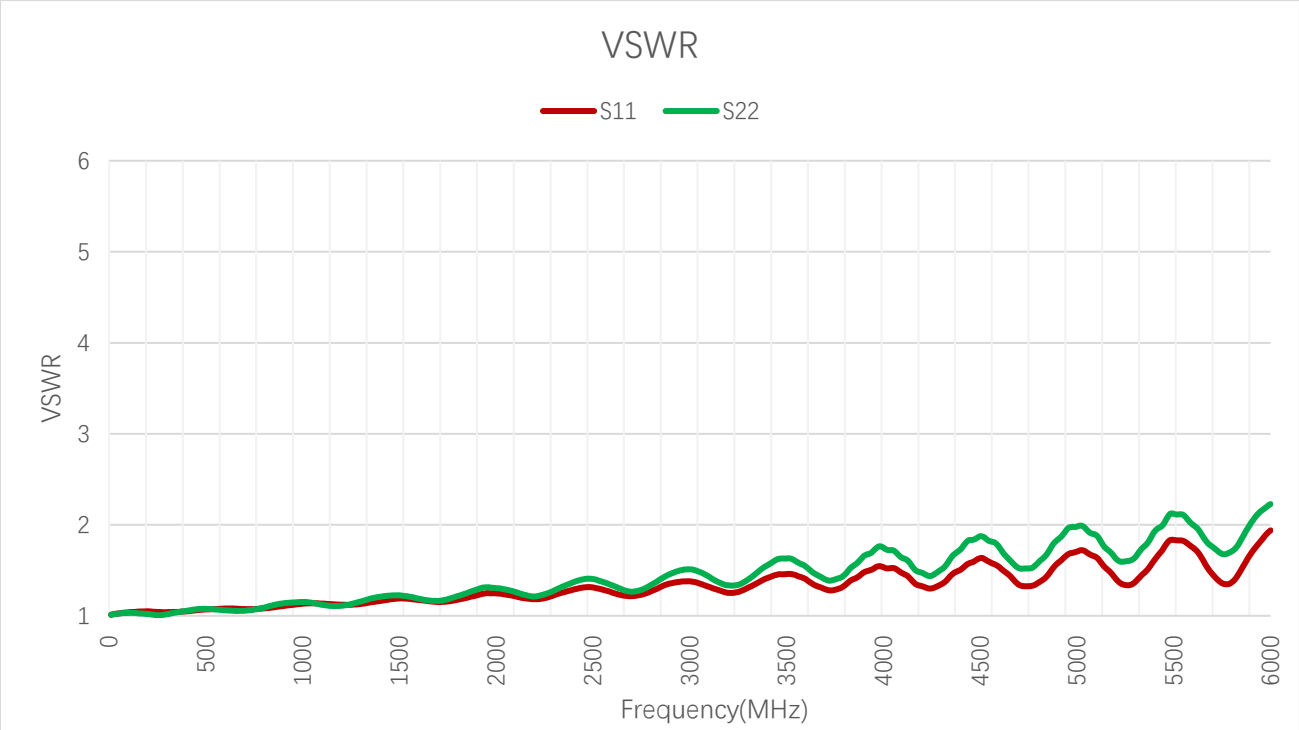
3.1. Cable Loss



Cable Loss (dB)

Frequency (MHz)	100	300	410	420	460	470	600	630	710	830
S21	-0.14	-0.24	-0.29	-0.30	-0.31	-0.31	-0.35	-0.36	-0.38	-0.43
S12	-0.12	-0.22	-0.28	-0.28	-0.29	-0.30	-0.34	-0.35	-0.37	-0.42
Frequency (MHz)	**900**	**960**	**1440**	**1710**	**1740**	**1880**	**1950**	**2140**	**2350**	**2450**
S21	-0.46	-0.47	-0.62	-0.64	-0.68	-0.77	-0.62	-0.79	-0.76	-0.83
S12	-0.45	-0.46	-0.62	-0.62	-0.62	-0.72	-0.61	-0.65	-0.77	-0.81
Frequency (MHz)	**2600**	**3600**	**4700**	**5000**	**5500**	**6000**				
S21	-0.86	-1.15	-1.17	-1.70	-1.88	-1.86				
S12	-0.85	-1.25	-1.53	-1.56	-1.44	-1.78				

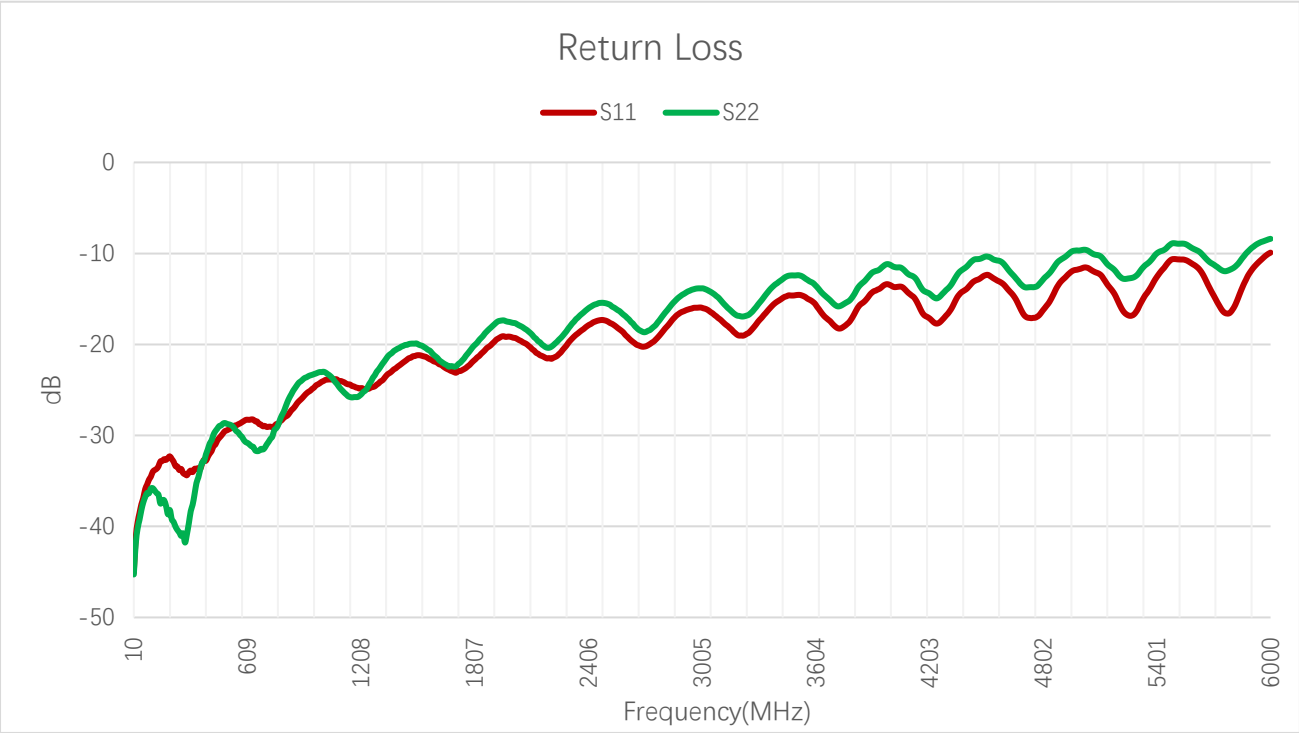
3.2. VSWR



VSWR

Frequency (MHz)	100	300	410	420	460	470	600	630	710	830
S11	1.04	1.04	1.05	1.05	1.06	1.06	1.08	1.08	1.07	1.09
S22	1.03	1.02	1.06	1.06	1.07	1.07	1.06	1.06	1.06	1.11
Frequency (MHz)	**900**	**960**	**1440**	**1710**	**1740**	**1880**	**1950**	**2140**	**2350**	**2450**
S11	1.11	1.12	1.18	1.15	1.16	1.21	1.25	1.20	1.26	1.31
S22	1.14	1.15	1.22	1.16	1.18	1.27	1.31	1.23	1.33	1.40
Frequency (MHz)	**2600**	**3600**	**4700**	**5000**	**5500**	**6000**				
S11	1.25	1.40	1.34	1.71	1.83	1.94				
S22	1.33	1.54	1.52	1.98	2.12	2.23				

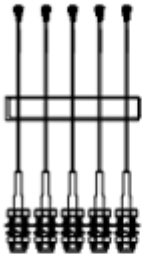
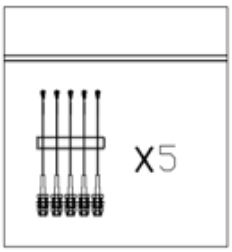
3.3. Return Loss

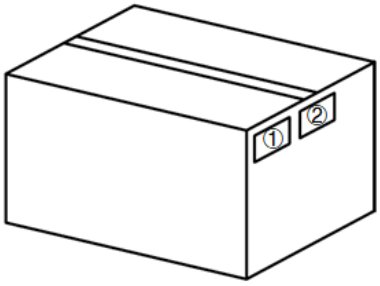
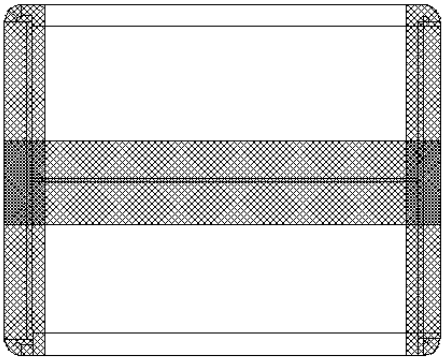


Return Loss (dB)

Frequency (MHz)	100	300	410	420	460	470	600	630	710	830
S11	-34.52	-34.05	-32.00	-31.71	-30.28	-30.05	-28.29	-28.24	-29.07	-27.54
S22	-35.83	-39.65	-30.89	-30.54	-28.97	-28.90	-30.73	-31.19	-31.00	-25.85
Frequency (MHz)	**900**	**960**	**1440**	**1710**	**1740**	**1880**	**1950**	**2140**	**2350**	**2450**
S11	-25.84	-24.74	-21.83	-23.11	-22.83	-20.26	-19.12	-21.02	-18.79	-17.42
S22	-23.86	-23.26	-20.06	-22.38	-21.77	-18.36	-17.37	-19.64	-17.05	-15.55
Frequency (MHz)	**2600**	**3600**	**4700**	**5000**	**5500**	**6000**				
S11	-18.96	-15.54	-16.74	-11.68	-10.62	-9.91				
S22	-16.89	-13.47	-13.66	-9.66	-8.90	-8.40				

4 Packaging

Step	Packaging Picture / 2D Picture	Description
1	 	(20 pcs per bundle)
2	 	100 pcs antenna products in a PE bag; (100 pcs antennas per PE bag) PE Bag Size: L × W = 345 × 240 mm
3	 	Place a clapboard at the bottom and top; (25 big PE bags per carton box) (2500 pcs antennas per carton box) Carton Size: L × W × H = 340 × 260 × 140 mm

4		**Position for Attaching Labels** ① Carton Label ② Quality Label
5		**Sealing Cartons** "工" type sealing cartons

Contact Us

At Quectel, our aim is to provide timely and comprehensive services to our customers. If you require any assistance, please contact our headquarters:

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Or our local offices. For more information, please visit:
http://www.quectel.com/support/sales.htm.

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Revision History

Version	Date	Author	Note
-	2021-09-15	Kenny YIN/ Aria CHU	Creation of the document
1.0	2021-09-15	Kenny YIN/ Aria CHU	First official release
1.1	2021-10-21	Kenny YIN/ Aria CHU	1. Added the value of insertion loss (Chapter 3.2). 2. Changed the chapter name (Chapter 4.2). Updated the drawing (Chapter 5).
1.2	2021-12-03	Kenny YIN/ Aria CHU	Updated the product description (Chapter 1).
2.0	2023-02-17	Mikael ZHONG/ Lucky FENG/ David LIU/ Aria CHU	Updated all data and datasheet template.
2.1	2023-05-19	Mikael ZHONG	Updated some data.
2.2	2023-07-10	Lucky FENG	1. Modified the product name on the home page. 2. Updated the operation temperature (Chapter 1.2). 3. Updated the drawing (Chapter 2).
2.3	2023-09-04	Lucky FENG	Updated the drawing (Chapter 2).

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