

M17/RG 系列射频同轴电缆规格书

M17/RG Series RF Coaxial Cable Specification

规格 Cable Type: RG316 FEP

编码/KINGSIGNAL Part Number	护套颜色 Jacket Color
41010600079	棕色 Brown
41010600080	黑色 Black
41010600081	浅棕色 Brown Tint
41010600192	白色 White

修订记录

Document update record

日期 Date	修订人 Author	审核人 Author	版本 Revision	修订声明 Revision declaration
2019-11-24	Hongse Li	Wei Zhou	V1.0	First version
2020-04-17	Hongse Li	Wei Zhou	V1.1	Update Shielding Effectiveness
2020-11-18	Hongse Li	Wei Zhou	V1.2	Update outer conductor DC Resistance

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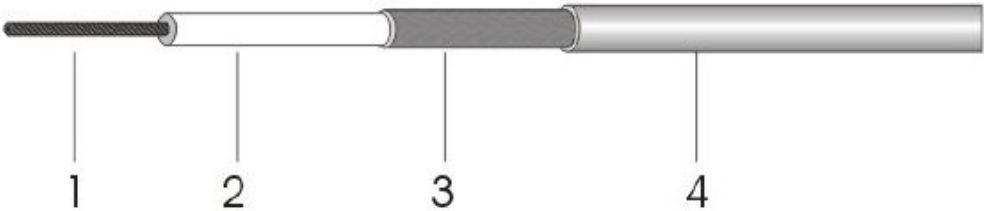
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1 基本要求 Basic Requirement

工作温度范围 Working temperature range	-65℃～200℃
安装温度 Working humidity range	-10℃～50℃
贮存温度 Storage temperature	0℃～40℃
使用寿命 Service life	≥3 years
参考依据 Reference standards	MIL-DTL-113

2 外观/结构 Appearance/ Construction

2.1 轮廓图 Outline Drawing



3 类型和规格 Type and Specs

3.1 内导体 Inner Conductor

材料 Material: 镀银铜包钢绞线 Stranded Silver-plated Copper Clad Steel Wire
内导体直径（包含公差） Inner Conductor Diameter (with tolerance): 7*0.175 ±0.005 mm

3.2 绝缘体 Insulation

材料 Material: 聚四氟乙烯 PTFE
绝缘体直径（包含公差） Insulation Diameter (with tolerance): 1.52 mm±0.05 mm
平均厚度 Average Thickness: 0.48 mm
同心度 concentricity : ≥90%

3.3 外导体 Outer Conductor

材料 Material: 镀银铜线编织 Silver-plated Copper Wire Braid
外导体直径（包含公差） Outer Conductor Diameter (with tolerance): 1.95 mm±0.08 mm
编织覆盖率:Braid Coverage: 95.2%, nominal

3.4 护套 Jacket

材料 Material: 聚全氟乙丙烯 FEP

护套直径 Jacket Diameter: $2.50\text{ mm} \pm 0.10\text{ mm}$

平均厚度 Average Thickness: 0.28 mm

最小厚度 Minimum Thickness: 0.20 mm

4 标记信息 Marking Information

电线表面需包含以下印字信息 The surface of the cable should contain the following printing information:

----No marking

5 电气性能 Electrical Characteristics

5.1 内导体直流电阻 Inner Conductor DC Resistance

$\leq 275\ \Omega/\text{km}$ @ 20°C

5.2 外导体直流电阻 Outer Conductor DC Resistance

$\leq 37.6\ \Omega/\text{km}$ @ 20°C

5.3 绝缘电阻 Insulation Resistance

$\geq 1000\ \text{M}\Omega \cdot \text{km}$

5.4 介质耐压 Dielectric Strength

DC $2000\ \text{V}$ @ $60\ \text{S}$: no crack

5.5 特性阻抗 Characteristic Impedance

$50\ \Omega \pm 2\ \Omega$

5.6 传输速率 Velocity

69.5%, nominal

5.7 截止频率 Cut-off Frequency

65 GHz

5.8 屏蔽效率 Shielding Effectiveness

$\geq 35\ \text{dB}$ (5~1000MHz)

5.9 海平面 20°C 下衰减和 40°C 环境温度下的海平面平均功率 Attenuation @ 20°C and sea level mean power rating at 40°C (104°F) ambient temperature.

Freq.(MHz)	Attenuation Typical (dB/m)	Attenuation Maximum(dB/m)	Power(W)
50	0.184	0.202	530
100	0.262	0.288	375
400	0.532	0.586	185
800	0.761	0.837	130
1000	0.856	0.941	120
1800	1.166	1.283	90
2000	1.233	1.357	80
2600	1.418	1.560	70
3000	1.531	1.684	65
3800	1.740	2.001	61
4000	1.790	2.059	60
5000	2.021	2.324	50
6000	2.234	2.569	48
7000	2.434	2.921	45
8000	2.623	3.148	42
9000	2.802	3.362	40
10000	2.973	3.925	37
11000	3.139	4.081	36
12000	3.298	4.287	34.5
12400	3.361	4.369	34

5.10 驻波比 VSWR.

Frequency（MHz）	VSWR
5-3000	<1.10
3000-6000	<1.15
6000-12400	<1.20

5.11 电容（参考）Mutual Capacitance（refer）

95 pF/m

5.12 峰值射频电压 Peak RF Voltage Rating

1.2 KV

5.13 灭晕电压 Corona Extinction Voltage

1.2 KVrms Minimum

5.14 连续工作电压 Continuous Working Voltage

900 Vrms Maximum

6 物理、机械性能 Mechanical and Physical Characteristics

6.1 最小单次弯曲半径 Min. Single Bending Radius

13mm

6.2 最小重复弯曲半径 Min. Repeated Bending Radius

40mm

6.3 重量 Weight

Nom. 14.5g/m

6.4 环保 Environment Compliant and Safety

RoHS 2.0

REACH

CE

6.5 阻燃 Flammability

IEC 60332-3-24

VW-1

UL1354

7 包装存储运输要求 Packaging, Storage, Transportation

7.1 包装 Package

胶盘+纸箱包装约 305 或 500 米/盘 Plastic spool + Carton box, about 305m or 500m/spool.

7.2 存储要求 Storage Requirements

存储温度为 0℃～+40℃，相对湿度≤80%，周围空气中无酸性、碱性等腐蚀性气体。

Storage temperature 0℃ ~ +40℃, relative humidity ≤ 80%, the surrounding air without acid, alkaline and other corrosive gases.

7.3 运输搬运过程中不要剧烈振动或碰撞.

Don't be violently vibrated or crashed during transportation or carrying.

8 产品应用 Application

通信基站天线系统、电子对抗、军用导航、雷达、航空等 Telecommunications antenna system, electronic countermeasures, Military navigation, radar, aviation etc.