HIGH-TEMPERATURE PHASE-STABLE RF CABLE

Cable Name: IR54

Part No: VXIR540



26.5 GHz	5.40 mm
MAX FREQUENCY	OUTER DIAMETER
400°C @ 400 s	**83%**
HIGH-TEMP ENDURANCE	VELOCITY

General Description: The Vinstronics VXIR540 is a larger-format high-temperature phase-stable RF cable designed for harsh-environment interconnect applications up to 26.5 GHz. Its silver-plated copper conductor, LD PTFE dielectric, multilayer shielding, and PI + PTFE outer jacket support stable RF transmission, robust mechanical handling, and short-term high-temperature exposure up to 400°C for 400 s.

Core Features

- **High-Temperature Endurance**: Short-term exposure capability up to 400°C for 400 s.
- **Phase-Stable RF Performance**: Designed for stationary phase-sensitive interconnect applications.
- **Robust 5.40 mm Cable Format**: Supports durable routing where mechanical protection and signal integrity matter.
- **Multilayer Shielding**: Silver-plated copper tape and braid structure for stable RF transmission.
- **PI + PTFE Outer Jacket**: Provides high-temperature protection and mechanical durability.

Target Applications

- **Extreme Temperature Testing**: For RF interconnects used in thermal test and high-temperature evaluation setups.
- **High-Temperature Onboard RF Links**: For stationary RF paths exposed to elevated thermal stress.
- **Robust Harsh-Environment Routing**: For cable paths requiring stronger mechanical margin and thermal survivability.
- **Phase-Sensitive RF Assemblies**: For interconnects requiring stable RF behavior in demanding environments.

CONSTRUCTION SPECIFICATION

Item	Name	Material & Process	Diameter mm
1	Center Conductor	**Silver-plated copper**	**1.40**
2	Dielectric	**LD PTFE**	**3.75**
3	Inner Shield	**Silver-plated copper tape**	**3.95**
4	Interlayer	**LD PTFE**	**4.20**
5	Outer Shield	**Silver-plated copper wire**	**4.65**
6	Outer Jacket	**PI + PTFE**	**5.40**

ELECTRICAL CHARACTERISTICS

Operating Frequency	**26.5 GHz**
Cutoff Frequency	**31 GHz**
Impedance	**50 Ω**
Velocity of Propagation	**83 %**
Shielding Effectiveness	**> 90 dB**
Dielectric Withstanding Voltage	**1500 VDC**

ATTENUATION AND TRANSMISSION POWER

Frequency (MHz)	1000	2000	3000	6000	8000	10000	12400	18000	26500
Attenuation (dB/100 m)	**24.3**	**34.6**	**42.7**	**61.1**	**71.0**	**79.9**	**89.5**	**109.2**	**134.5**
Average Power (kW)	**1.050**	**0.737**	**0.598**	**0.418**	**0.359**	**0.320**	**0.285**	**0.234**	**0.190**

K1 = 0.754593 **K2** = 0.000440 **Formula:** Attenuation = K1 × √F(MHz) + K2 × F(MHz)

MECHANICAL AND ENVIRONMENTAL CHARACTERISTICS

Static Bending Radius	**27 mm**
Dynamic Bending Radius	**54 mm**
Weight	**0.060 kg/m**
Storage Temperature	**-55°C to +125°C**
High-Temp Endurance	**400°C @ 400 s**