

CEL-FI GO X

Cellular / LTE

Smart Signal Booster™



DATA SHEET

MODEL NUMBERS:
G32-2/4/5/12/13X
G32-1/3/5/7/8/20X

Cel-Fi GO X uses Nextivity's award-winning, network-safe Cel-Fi Smart Signal Booster technology to dramatically improve voice and data coverage in up to two (2) bands for 3G, 4G, and LTE. It is designed to improve indoor and outdoor cellular coverage when one bar is available outdoors, by allowing an antenna to be used to improve indoor cellular performance. Cel-Fi GO X is cost efficient and easy-to-deploy by an installer, and can be easily optimized and monitored by the Cel-Fi WAVE platform.

Benefits:

- **Superior Performance: 100dB Max Gain**
- **NEMA 4 Rated**
- **Multi-carrier Support with Carrier Switching app**
- **Carrier Approved for 3G / 4G / LTE for Voice and Data**
- **Unconditionally Network Safe**
- **SMA Antenna Connectors**
- **Cel-Fi WAVE Management Platform**



Cel-Fi WAVE is a smartphone app that will help you get the best performance from your Cel-Fi GO X.



Wireless Features

3G & 4G / LTE support (WCDMA / HSPA+ / LTE)
Supports two (2) bands simultaneously from a single operator
FDD
Up to 100dB system gain, per band
Peaceful coexistence with adjacent Wi-Fi (2.4 GHz & 5 GHz), femtocells, and cellular devices
Advanced digital echo-cancellation (>30dB) and channel select filtering algorithms
Automatic Gain Control (AGC) based on fast real-time echo-cancellation
Linear RF front end
Adaptive signal equalization
Uses Nextivity's 3rd-generation "ARES" chipset

System Features

SMA connectors for Donor and Server antennas
NEMA 4 rated enclosure and connectors
Support for BIAS-TEE power through Server port
Glanceable LED User Interface (UI)
Supporting smart phone application (WAVE)
Convection cooled cast aluminum chassis
Easy mounting capability
Mounting screws and anchors included

Mobile Network and Network Protection Features

Global band combinations available
Systems are pre-configured for a single carrier (network operator)
Supports multiple channels with bandwidths of 5/10/15/20 MHz per channel
Works with any user equipment (UE) on the configured network (no whitelist/blacklist)
Up to 40 MHz system relay bandwidth
Support for 3GPP Release 10 features
Provider-specific system: Cel-Fi distributes and boosts service only for the Operator PLMNIDs for which the device is authorized and configured
Secure and ciphered provisioning
System intelligence accurately establishes proper safe uplink power in real time
Uplink Muting Mode automatically shuts down uplink cellular transmissions when no active user equipment is detected
System shuts down upon Operator's network command or failure detection

Wireless Benefits

Clear and reliable cellular connections within coverage area up to 12,500 ft² (1000 m²) per system
Highest gain (100 dB) provides best coverage footprint
Advanced Echo-Cancellation allows Cel-Fi to transmit more power without feedback interference
Subscriber devices (UE) require less transmit power for improved battery life
Linearity eliminates IMD desense issues
Dynamic gain control ensures maximum gain — best coverage — at all times in ever changing RF environments, without user intervention
Nextivity purpose-built, high-performance, six core ASIC processor, provides best performance at lowest cost

System Benefits

Distribute and boost cellular coverage
 3G and 4G support, Voice and Data, network safe
 LED cues provide visual feedback for ease of setup and status
 Works with any subscriber device from the configured Operator

Mobile Network Benefits

Flexibly deploy on LTE, VoLTE, LTE-Advanced, and WCDMA networks, with multiple cellular bands, simultaneously
 Automatically adjusts channel bandwidths between 5MHz and 20MHz
 UE control is transparent and remains centralized in the network core (no gateways or third-party software)

Compliance

(check individual product version for specific regional compliance)

3GPP TS 25.143 Rel.10
 3GPP TS 36.143 Rel.10
 FCC Part 15, 20, 22, 24, 27
 ISED (Industrie Canada)
 Bluetooth SIG
 CE

System Management

(Software)

Supported by WAVE cloud portal
 WAVE Portal capability: Status (List and Map) Commissioning Diagnostics Software Updates
 Settings Reporting Alarms & Notifications

Antenna Ports

(Donor and Server)

699 – 2180 Mhz
 Impedance: 50 Ohm
 Return Loss: 8 dB
 Output Protection

Environmental

Operating temperature: 0° to 65° C
 Convection Cooling
 Relative humidity: 0% to 95%, noncondensing
 RoHS 2 (European and China compliant)
 WEEE
 NEMA 4
 Surface Temp at any point (30° ambient): 53° C

Dimensions

Height	Width	Length	Weight
43.5 mm	96.5 mm	272.5 mm	850g

Power

9.6 – 16.5V
 2A current draw
 16W nominal power consumption

Installation

Mounting hardware included

DC Power Plug and Jack

NEMA 4 rated power plugs and jack



Radio Performance

The GO system can boost up to two (2) bands concurrently. Either profile can be selected:
 A) One (1) High band boost and one (1) low band boost or B) Two (2) high bands boost

Band Variations:

(check product version for specific band support)

Model Number	G32-2/4/5/12/13X		G32-1/3/5/7/8/20X
Bands Supported	2, 4, 5, 12, 13		1, 3, 5, 7, 8, 20
Band	Downlink	Uplink	MHz
1	2110-2170 MHz	1920-1980 MHz	Up to 20MHz contiguous boost, HSPA or LTE
2	1930-1990 MHz	1850-1910 MHz	Up to 20MHz contiguous boost, HSPA or LTE
3	1805-1880 MHz	1710-1785 MHz	Up to 20MHz contiguous boost, HSPA or LTE
4	2110-2155 MHz	1710-1755 MHz	Up to 20MHz contiguous boost, HSPA or LTE
5	869-894MHz	824-849 MHz	Up to 15MHz contiguous boost, HSPA or LTE
7	2620-2690MHz	2500-2570 MHz	Up to 20MHz contiguous boost, LTE
8	925-960 MHz	880-915 MHz	Up to 15MHz contiguous boost
12	729-746 MHz	699-716 MHz	Up to 10MHz contiguous boost, LTE
13	746-756 MHz	777-787 MHz	Up to 10MHz contiguous boost, LTE
20	791-821 MHz	832-862 MHz	Up to 20MHz contiguous boost, LTE

Maximum DL in-band donor level -40dBm
 Maximum UL power 22dBm EIRP bands 1, 2, 3, 4, 7, 8
 Maximum UL power 20dBm EIRP band 5, 12, 13, 20
 Maximum DL power 10dBm per 5 MHz EIRP bands 1, 2, 3, 4, 7, 8
 Maximum DL power 10dBm per 5 MHz EIRP bands 5, 12, 13, 20
 LTE 5/10/15/20MHz and WCDMA 5MHz bandwidths

Log Periodic Outdoor Antenna

by WAVEFORM

SKU: ANT660-NF-LOGP11



Main Features:

- Wideband Log Periodic Antenna
- 50 Ω
- 7-11.5 dBi
- 600-6000 MHz

Specifications:

Electrical:

Frequency Range	600-698 MHz	698-960 MHz	1710-6000 MHz
Gain (Peak)	6.0 dBi \pm 1.0 dB	9.5 dBi \pm 0.5 dB	11.0 dBi \pm 0.5 dB
Horizontal Beamwidth	105 deg	95 deg	78 deg
Vertical Beamwidth	87 deg	68 deg	56 deg
VSWR	\leq 2.0	\leq 1.8	\leq 1.5
Front-to-Back Ratio		$>$ 15 dB	
Input Impedance		50 Ω	
Polarization		Vertical	
Power Rating (Peak)		50 W	

Mechanical:

Type	Directional
Radome Color	White
Radome Material	ABS (UV Stabilized)
Dimensions	440 x 205 x 60 mm
Connector Type	N-Female
Cable Type	RG58
Cable Length	300 mm
Net Weight	1.1 kg
Mounting Type	Pole
Mounting Material	Steel

Environmental:

Protection Class	IP65
Rated Wind Velocity	120 km/h
Operating Temperature	-40 to +60 deg C
Lightning Protection	DC Ground



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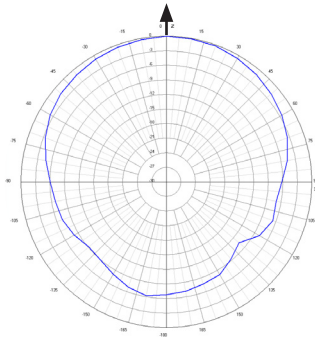
3411 W. Lake Center Drive,
Santa Ana, CA 92704

www.waveform.com
1-800-761-3041

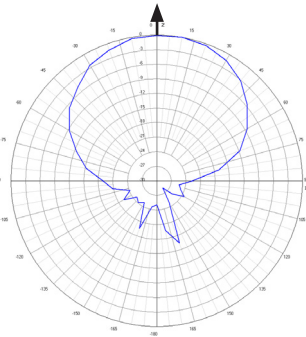
Log Periodic Outdoor Antenna

by WAVEFORM

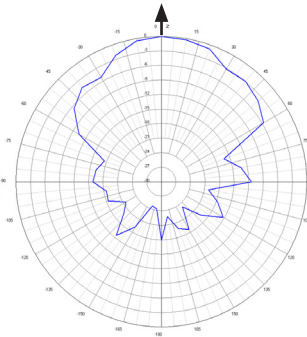
650 MHz



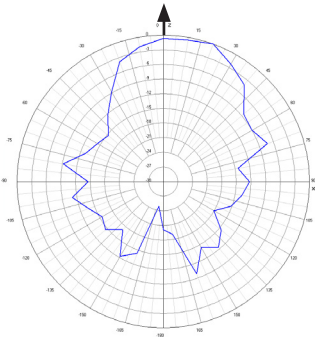
1950 MHz



3800 MHz

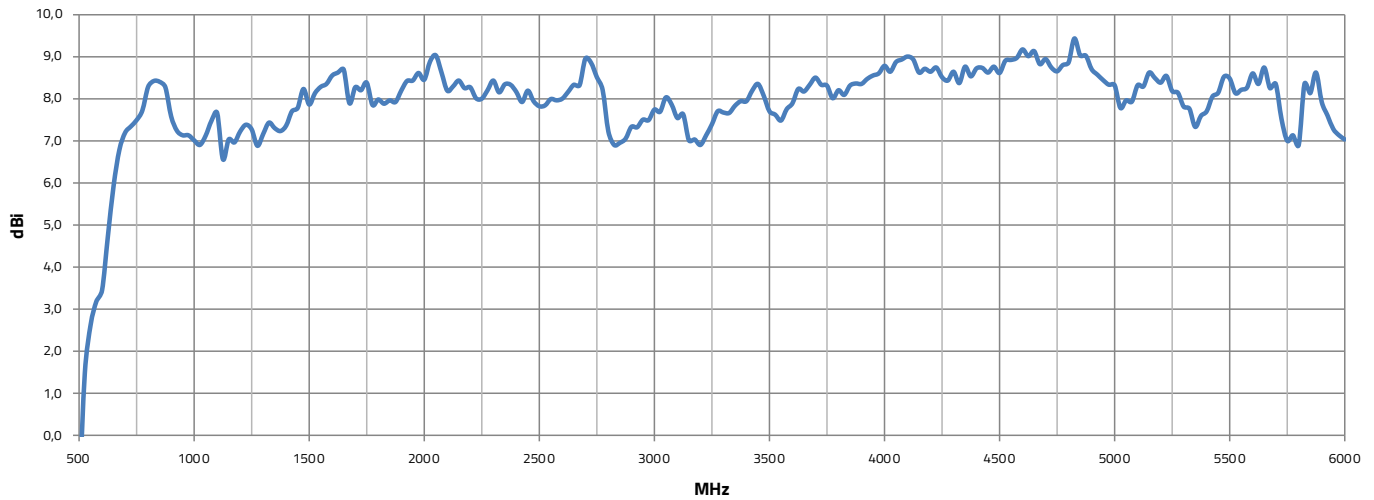


5400 MHz



Vertical Plane
"Top-down view"

Antenna Broadside Gain (dBi) by Frequency (MHz)



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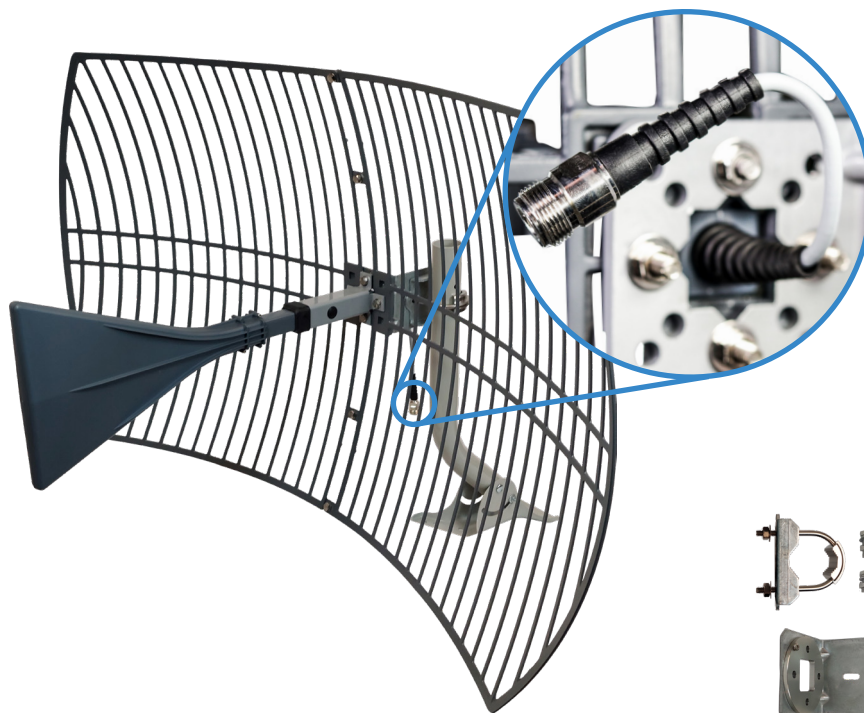
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Griddy: Grid Parabolic Antenna

by WAVEFORM

SKU: ANT66NF-GP



Main Features:

- Ultra Wideband
Grid Parabolic Antenna
- 50 Ω
- 12-26 dBi
- 600-6500 MHz

Specifications:

Electrical:

Frequency Range	600-960 MHz	1700-2700 MHz	3000-6500 MHz
Gain	14.5 dBi \pm 2.5 dB	21.5 dBi \pm 1.5 dB	24.5 dBi \pm 1.5 dB
Horizontal Beamwidth	20 deg	12 deg	7 deg
Vertical Beamwidth	23 deg	15 deg	9 deg
Front-to-Back Ratio	20 dB		
VSWR	1.6:1	1.5:1	1.4:1
Input Impedance	50 Ω		
Polarization	Horizontal or Vertical		
Maximum Power	100 W		

Mechanical:

Type	Directional
Radome Color	Grey
Radome Material	ASA Anti UV
Dimensions	610 x 990 x 410 mm
Connector Type	N-Female
Cable Type	RG58
Cable Length	25 cm
Net Weight	2.4 kg
Mounting Type	Pole
Mounting Material	Aluminum
Mounting Mast Diam.	38-50 mm

Environmental:

Protection Class	IP65
Rated Wind Velocity	210 km/h
Operating Temperature	-0 to +60 deg C
Lightning Protection	DC Ground



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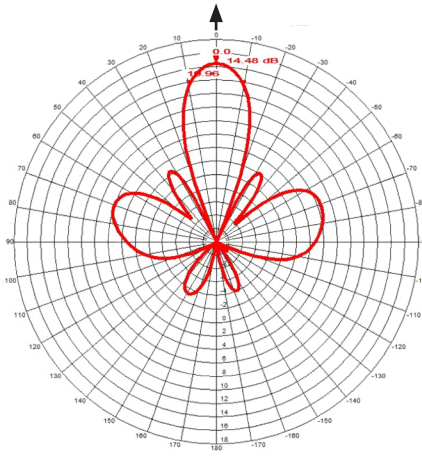
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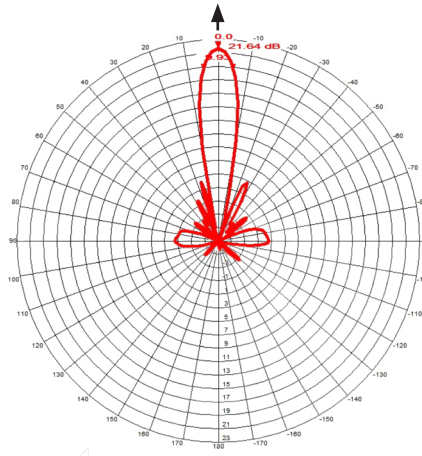
Griddy: Grid Parabolic Antenna

by WAVEFORM

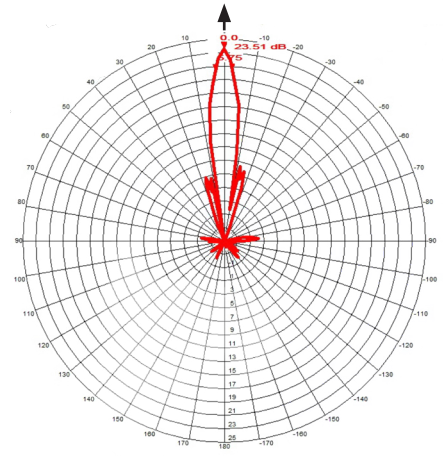
600-960 MHz



1710-2700 MHz



3000-6500 MHz



Vertical Plane
"Top-down view"



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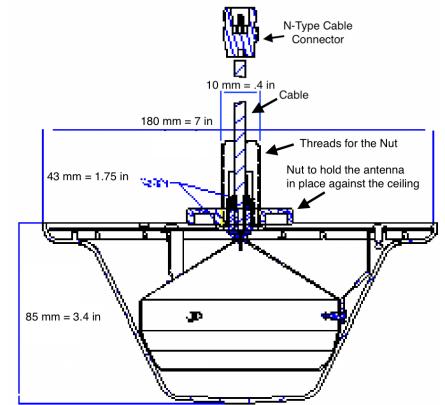
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Dome Antenna

by WAVEFORM

SKU: ANT627NF-DOME



Main Features:

- Dome Antenna
- 50 Ω
- 3.0-5.5 dBi
- 600-6000 MHz

Specifications:

Electrical:

	600-960 MHz	1710-2700 MHz	2700-6000 MHz
Frequency Range	600-960 MHz	1710-2700 MHz	2700-6000 MHz
Gain (Peak)	2.5 dBi \pm 1 dB	5.5 dBi \pm 1.5 dB	5.0 dBi \pm 1 dB
Horizontal Beamwidth	360 deg		
Vertical Beamwidth	90 deg		
VSWR	\leq 1.7	\leq 1.5	\leq 1.5
Input Impedance	50 Ω		
Polarization	Vertical		
PIM (IM3)	\leq -140 dBm @ 33 dBm*2		
Maximum Power	50 W		

Mechanical:

Type	Omnidirectional
Radome Color	White
Radome Material	UV-Protected ABS
Dimensions	186 mm ϕ x 86 mm
Connector Type	N-Female
Cable Type	RG58
Cable Length	30 cm (12 inch)
Net Weight	275 g
Mounting Type	Ceiling
Mounting Material	ABS

Environmental:

Protection Class	IP52
Operating Temperature	-40 to +60 deg C
Limit Temperature	-55 to +70 deg C
Lightning Protection	DC Ground



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Dome Antenna

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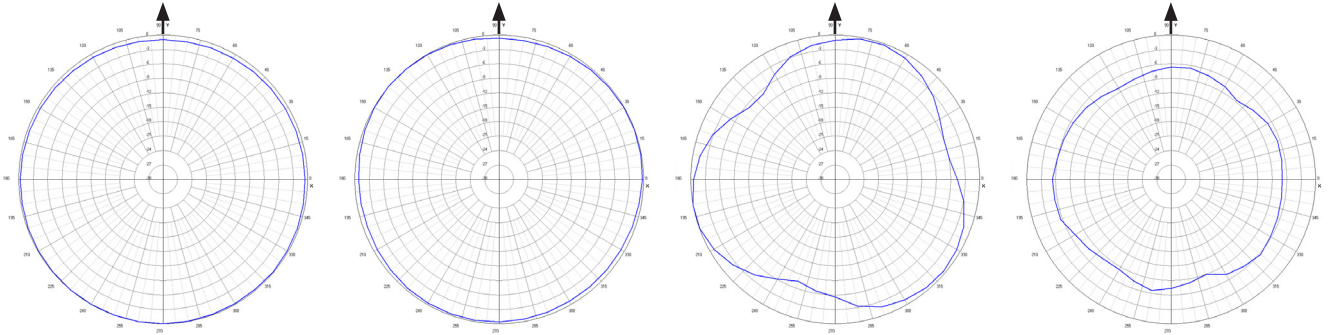
650 MHz

1950 MHz

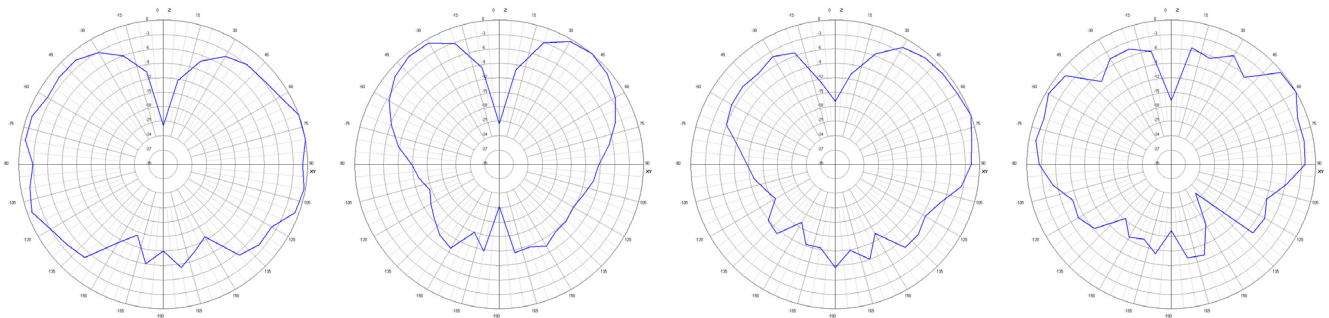
3800 MHz

5400 MHz

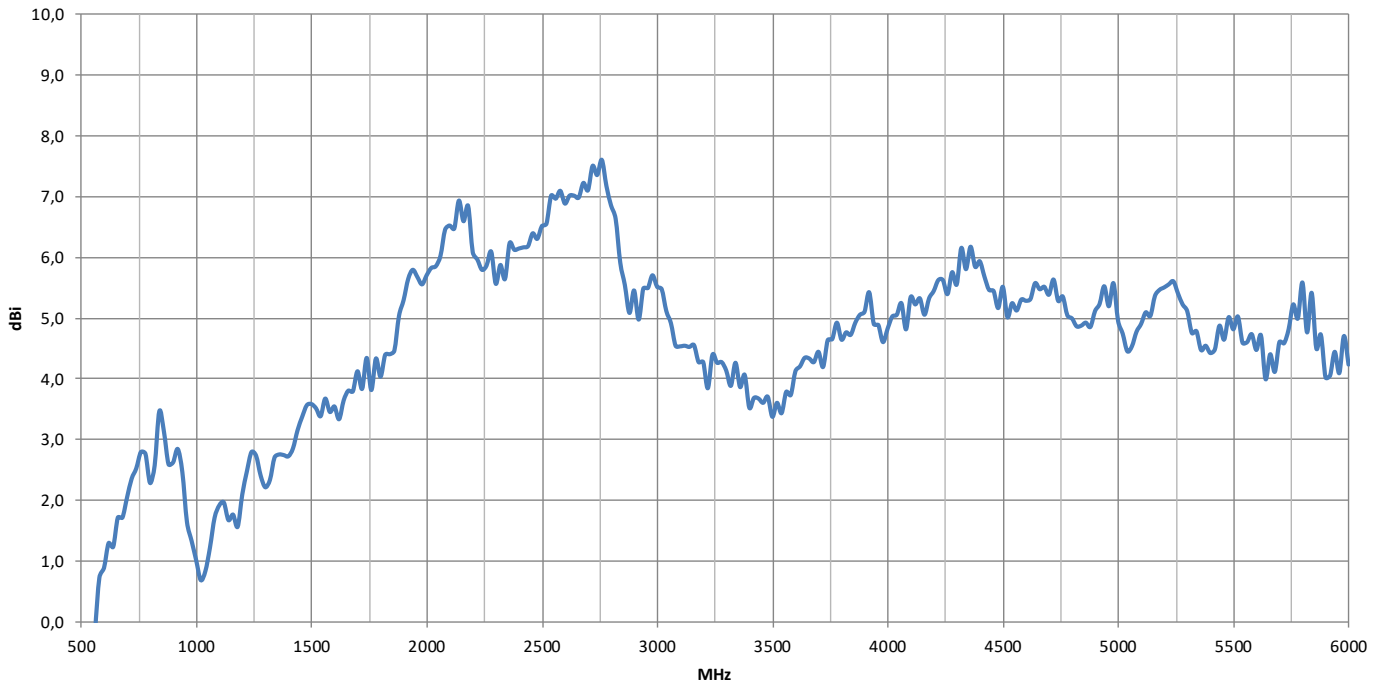
Vertical Plane
"Top-down view"



Horizontal Plane
"Side-on view"



Antenna Peak Gain (dBi) by Frequency (Mhz)



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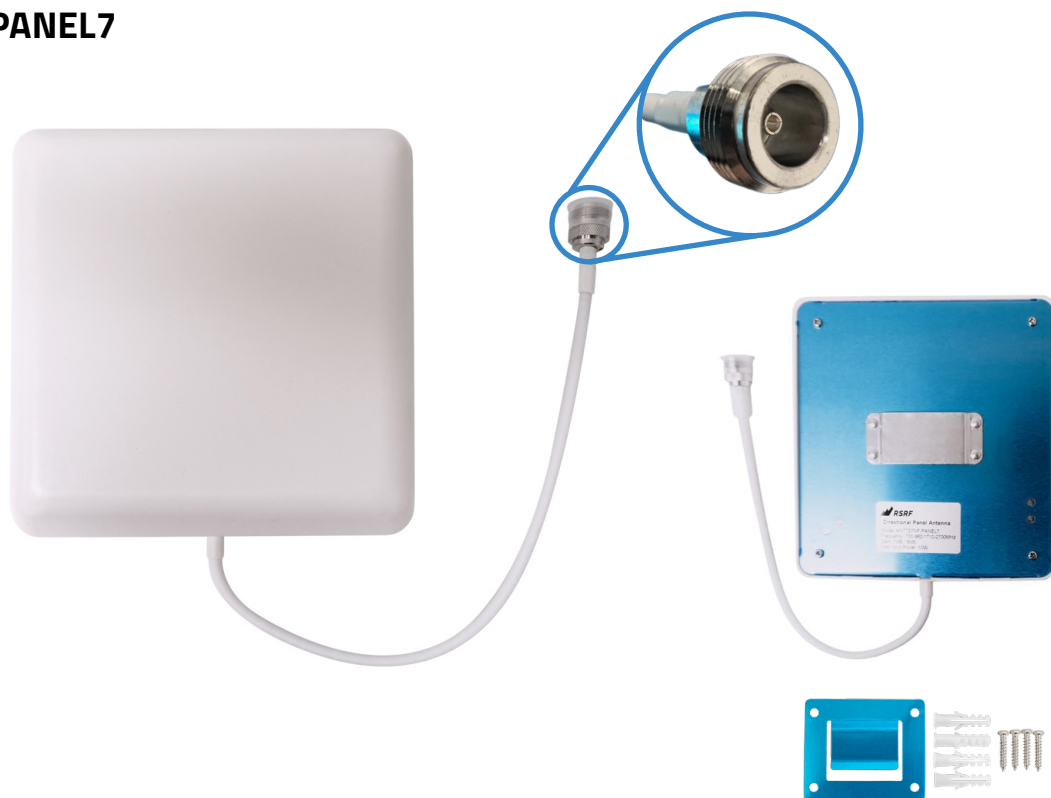
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Panel Antenna

by WAVEFORM

SKU: ANT627NF-PANEL7



Main Features:

- Panel Antenna
- 50 Ω
- 7-8 dBi
- 600-6000 MHz

Specifications:

Electrical:

Frequency Range	600-960 MHz	1710-2700 MHz	2700-6000 MHz
Gain (Peak)	7 dBi \pm 1.0 dB	8 dBi \pm 1.0 dB	7.7 dBi \pm 1.5 dB
Horizontal Beamwidth	90 \pm 15 deg	75 \pm 12 deg	80 \pm 20 deg
Front-to-Back Ratio	\geq 6 dB	\geq 8 dB	\geq 10 dB
VSWR	\leq 1.4		
Input Impedance	50 Ω		
Polarization	Vertical		
PIM (IM3)	\leq -107 dBm @ 33 dBm*2		
Maximum Power	50 W		

Mechanical:

Type	Directional
Radome Color	White
Radome Material	ABS Plastic
Dimensions	210 x 180 x 44 mm
Connector Type	N-Female
Cable Type	RG58
Cable Length	30 cm (12 in.)
Net Weight	430 g
Mounting Type	Wall Mount
Mounting Material	Steel

Environmental:

Protection Class	IP52
Relative Humidity	5 to 95 %
Rated Wind Velocity	210 km/h
Operating Temperature	-40 to +70 deg C



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Panel Antenna

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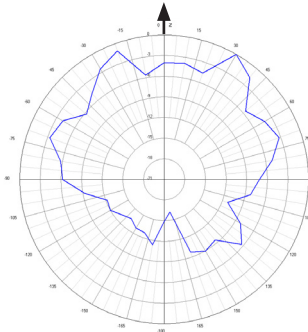
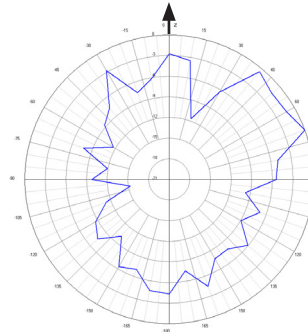
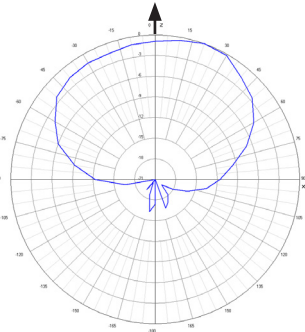
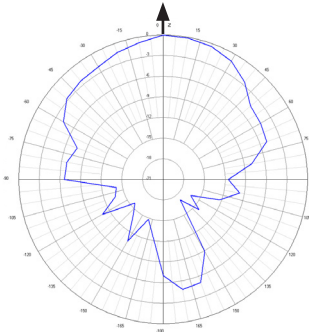
650 MHz

1950 MHz

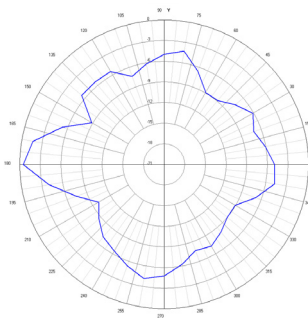
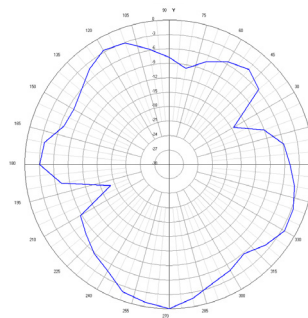
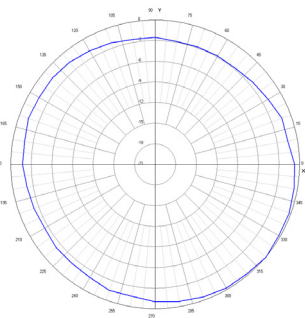
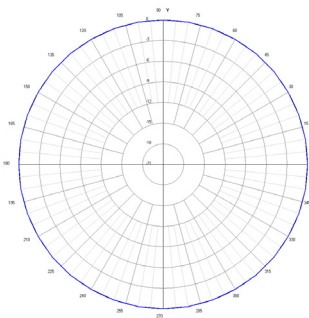
3800 MHz

5400 MHz

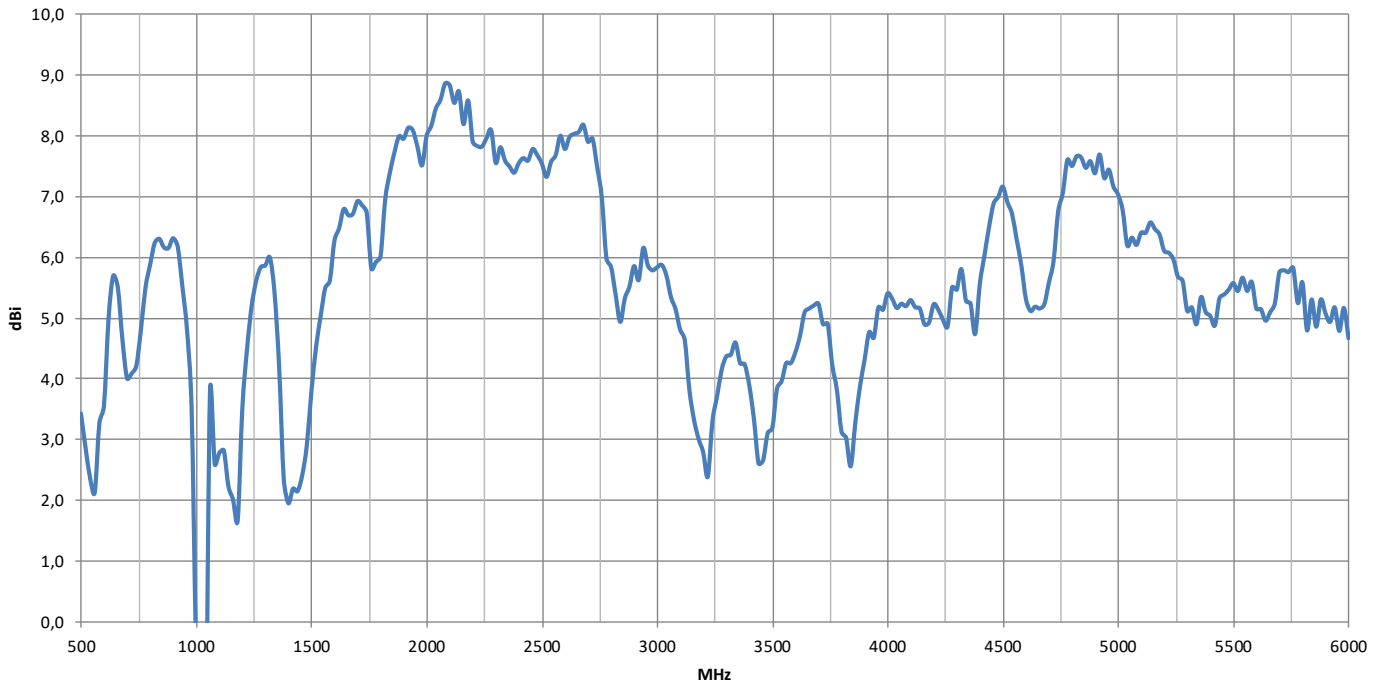
Vertical Plane
"Top-down view"
(normalized to peak gain)



Horizontal Plane
"Head-on view"
(normalized to peak gain)



Antenna Broadside Gain (dBi) by Frequency (MHz)



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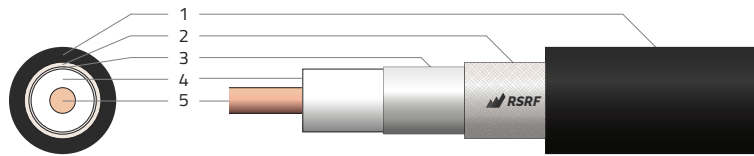
RS400 N-Male to N-Male Coaxial Cable

by WAVEFORM

SKU: RS400-X

Main Features:

- N-Male connectors
- 0-6000 MHz
- 50 Ω
- 10.16 mm diam. cabling



#	Description	Material	Diameter (mm)
1	Jacket	PE	10.16
2	Outer Shield	Tinned Copper Braid	8.1
3	Inner Shield	Bonded Aluminum Foil	8.1
4	Dielectric	PTFE	7.24
5	Inner Conductor	Copper Clad Aluminum	2.74

Specifications:

Electrical:

Input Impedance	50 Ω
Frequency Range	0 - 6000 MHz
VSWR	≤ 1.4
Capacitance	< 78.4 pF/m
Velocity	85 %
Shielding	> 90 dB
Power Rating (Peak)	16 kW

RF Attenuation (per 30 ft):

600 MHz	0.9 dB
900 MHz	1.2 dB
1800 MHz	1.7 dB
2100 MHz	1.8 dB
2500 MHz	2.0 dB
3000 MHz	2.3 dB
4000 MHz	2.7 dB
5000 MHz	3.0 dB
6000 MHz	3.4 dB

Mechanical:

Jacket Color	Black
Cable Diameter	10.16 mm
Cable Length	Varying
Bending Radius	51 mm
Connector Type	N-Male
Connector Diameter	20.3 mm
Net Weight	0.10 kg/m

Environmental:

Burial Rated?	No
UV Rated?	Yes
Operating Temperature	-40 to +85 deg C



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RS200 N-Male Ultraflex Jumper Cables

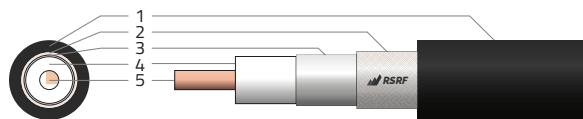
by WAVEFORM

**SKUs: (1 ft), RS200-NM-NM-1
(3 ft), RS200-NM-NM-3
(5 ft), RS200-NM-NM-5**



Main Features:

- N-Male connectors
- 0-6000 MHz
- 50 Ω
- 4.95 mm diam. cabling



#	Description	Material	Diameter (mm)	Plating
1	Jacket	PE	4.95	N/A
2	Outer Shield	Copper Braid	3.66	N/A
3	Inner Shield	Aluminum Foil	3.07	N/A
4	Dielectric	PTFE	2.95	N/A
5	Inner Conductor	Copper	1.12	Gold
	N Body	Brass	20.3	Nickel
	Crimping Suite	Brass	N/A	Nickel
	Gasket	Silicon Rubber	N/A	N/A

Specifications:

Electrical:

Input Impedance	50 Ω
Frequency Range	0 - 6000 MHz
VSWR	≤ 1.2
Capacitance (pF/m)	< 80.4
Velocity	83 %
Shielding	> 90 dB
Power Rating (Peak)	2.5 kW

Environmental:

Protection Class	IP67
Burial Rated?	No
UV Rated?	Yes
Operating Temps.	-25 to +70 deg C

RF Attenuation (per 5 ft):

600 MHz	0.40 dB
900 MHz	0.50 dB
1800 MHz	0.71 dB
2100 MHz	0.77 dB
2500 MHz	0.84 dB
3000 MHz	0.93 dB
4000 MHz	1.08 dB
5000 MHz	1.22 dB
6000 MHz	1.34 dB

Mechanical:

Jacket Color	Black
Cable Type	RS200 (LMR200)
Cable Diameter	4.95 mm
	0.30 m (1 ft)
Cable Length	0.90 m (3 ft)
	1.50 m (5 ft)
Bending Radius	12.7 mm
Connector Type	N-Male
Connector Diameter	20.3 mm
	0.09 kg (for 1 ft)
Net Weight	0.11 kg (for 3 ft)
	0.15 kg (for 5 ft)
NFPA Rated?	No
ROHS Compliant?	Yes



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50 Ohm Lightning Surge Protector Kit

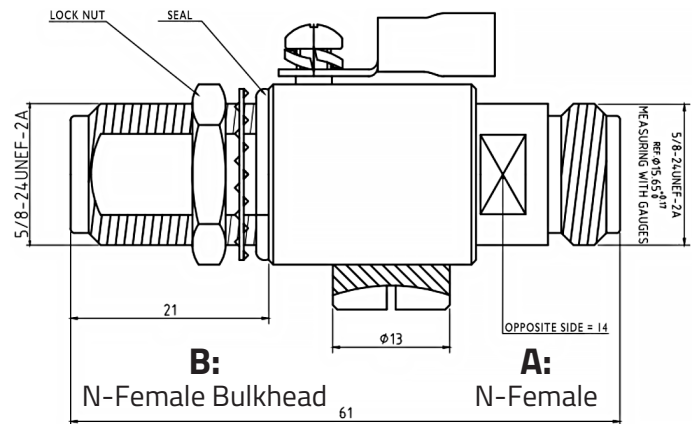
by WAVEFORM

SKU: WF-LSP-50-KIT



Main Features:

- N-Female to N-Female Bulkhead Surge Protector
- 0-6000 MHz Frequency Support
- 50 Ω Impedance
- 5 ft 10 AWG Grounding Wire
- 5 ft RS240 N-Male to N-Male Jumper Cable



Surge Protector Specifications:

Electrical:

Frequency Range	0 - 6000 MHz
VSWR (DC)	≤ 1.25
Insertion Loss	≤ 0.25 dB
Input Impedance	50 Ω
Insulation Resistance	≥ 5000 M Ω
Transmission Power	200 W
Gas Tube Breakdown Voltage (DC)	90 V
Withstanding Voltage (50 Hz, at sea level)	≥ 2500 V RMS
Working Voltage (50 Hz, at sea level)	≤ 1000 V RMS
Maximum Impulse Discharge Current (8/20 μ s)	20 KA 2000 J
Contact Resistance (Center Contact)	≤ 0.4 m Ω
Contact Resistance (Outer Contact)	≤ 0.2 m Ω

Mechanical:

Dimensions	22.7 mm \varnothing x 61.0 mm
Connector A Type	N-Female
Connector B Type	N-Female Bulkhead
Connector Body	Nickel Plated Brass
Body	Nickel Plated Brass
Pin Material	Gold Plated Brass
O-Ring Material	Rubber
Ground Connection	By Feedthrough or Screw Terminal
Net Weight	0.13 kg
NFPA Rated?	No
ROHS Compliant?	Yes

Environmental:

Protection Class	IP67
Operating Temperature	-55 to +155 deg C



WAVEFORM

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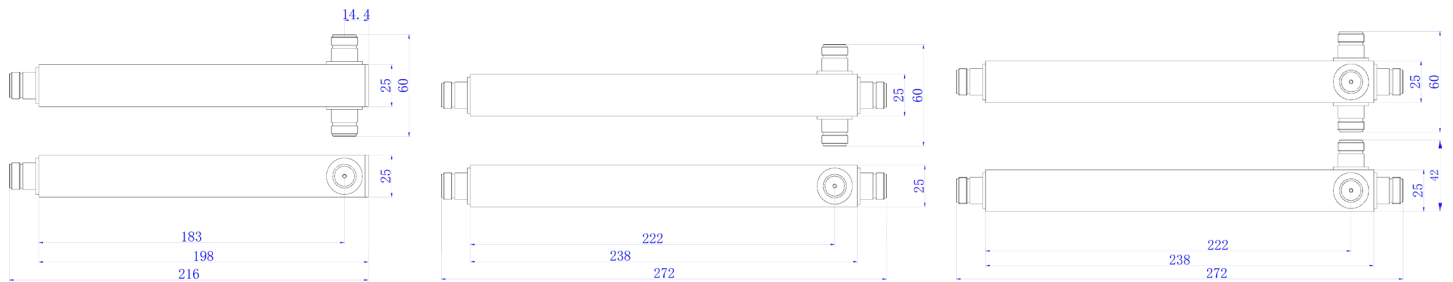
N-Female Signal Splitter (2-Way, 3-Way, 4-Way)

by WAVEFORM

SKU: SPLT640NF-x

Main Features:

- 600-4000 MHz
- 50 Ω
- 300 W Power Handling



Specifications:

Electrical:

SKU	SPLT640NF-2	SPLT640NF-3	SPLT640NF-4
# of Splits	2-Way	3-Way	4-Way
Frequency Range	600-4000 MHz		
Input Impedance	50 Ω		
Insertion Loss (Typical)	≤ 0.3 dB		
Distribution Loss	3.0 dB	4.8 dB	6.0 dB
VSWR	≤ 1.25		
PIM (IM3)	≤ -154 dBc @ +43 dBm*2		
Power Rating (Average)	300 W		

Environmental:

Applied Environment	Indoor / Outdoor
Protection Class	IP65
Relative Humidity	5 to 95 %
Operating Temperature	-25 to +70 deg C

Mechanical:

SKU	SPLT640NF-2	SPLT640NF-3	SPLT640NF-4
Connector Type	N-Female		
Connector Material	Copper		
Cavity Color	Black		
Cavity Material	Silver Plated Aluminum		
Inner Conductor Material	Silver Plated Copper		
Dimensions	216 x 60 x 25 mm	272 x 60 x 25 mm	272 x 60 x 42 mm
Net Weight	0.34 kg	0.43 kg	0.48 kg



WAVEFORM

3411 W. Lake Center Drive,
Santa Ana, CA 92704

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SMA-Male to N-Female Pigtail Adapter

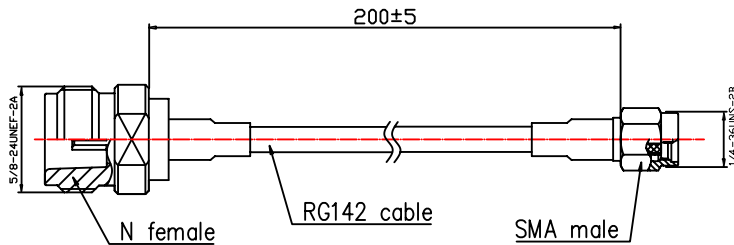
by WAVEFORM

SKU: PTA-SMAM-NF



Main Features:

- SMA-Male to N-Female connector
- 0-6000 MHz
- 50 Ω
- 4.95 mm diam. cabling



Section Description	Material	Plating
SMA Body	Brass	Gold/Nickel
N Body	Brass	Gold/Nickel
Crimping Suite	Copper Alloy	Nickel
Inner Conductor	Brass	Gold/Silver
Jacket	FEP	
Gasket	Silicone Rubber	
Dielectric	PTFE	

Specifications:

Electrical:		Mechanical:		Environmental:	
Input Impedance	50 Ω	Jacket Color	Tan	Burial Rated?	No
Frequency Range	600 - 6000 MHz	Cable Type	RG142	UV Rated?	No
VSWR	≤ 1.2	Cable Diameter	4.95 mm	Operating Temperature	-65 to +165 deg C
Capacitance	< 29.4 pF/m	Cable Length	20 cm		
Velocity	70 %	Bending Radius	25.4 mm		
Shielding	> 88 dB	Connector A Type	SMA-Male		
Power Rating (Peak)	5 kW	Connector A Angle	Straight		
Insertion Loss (Typical)	< 0.7 dB @ 6000 MHz	Connector A Diameter	7.9 mm		
		Connector B Type	N-Female		
		Connector B Angle	Straight		
		Connector B Diameter	15.7 mm		
		Net Weight	29 g		



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