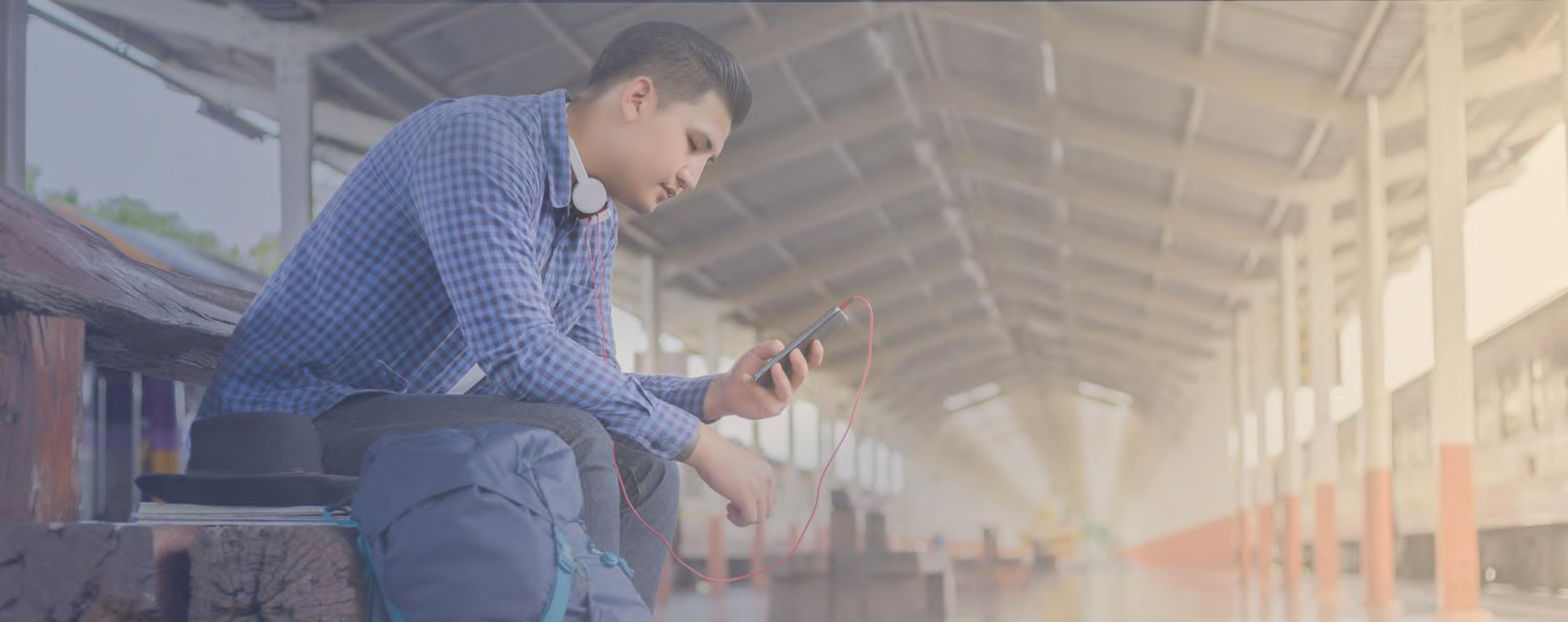




06/2020

RT Antenna & Accessories Guide

V1.2

Accessories and part numbers

Part No	Inventory Part Description
3623-0800	Cavity Filter 5.8GHz (NCH 105072), EN50155
3623-0801	Power splitter 2-6GHz (NCH 105102)
3623-0802	Hybrid coupler (NCH 105078)
3623-0803	RF Surge Protector, N-Type (NCH 104704)
3623-0810	Trackside Antenna, 13dBi, N-Connectors, incl. Fixing kit
3623-0811	Trackside Antenna, 18dBi , N-Connectors, incl. Fixing kit
3623-0812	Rooftop WLAN 2.4/5 MIMO 10dBi, LTE/UMTS, GPS Ant., EN50155
3623-0816	ITS WLAN 2.4/5 MIMO 9dBi, LTE/UMTS, GPS Ant.
3623-0813	Rooftop WLAN 12dBi EN50155
8623-0814	Antenna DualPol 2.4GHz/5GHz 8dBi ROUND
3623-0815	Antenna 4x4 Omni MIMO, inside, incl. Cables, EN50155
3623-0820	RF-Cable SPUMA 240-FR-01 QMA-W-PLUG 11 QMA-W-PLUG 2m
3623-0821	RF-Cable SPUMA 240-FR-01 QMA-W-STR-PLUG N-RA-PLUG 1m
3623-0822	RF-Cable SPUMA 240-FR-01 N-STR-PLUG N-R/A-PLUG 2m
3623-0823	RF-Cable SPUMA 400-FR-01 N-STR-PLUG N-STR-PLUG 4m

3623-0800 Cavity Filter 5.8GHz

Function	5.8GHz band cavity bandpass filter. Approved for mounting inside trains and vehicles.
Product number	3623-0800 (NCH 105072)
Passband	5.720 – 5.855 GHz
Physical Dimensions	LxWxH: 82mm x 78mm x 30mm, without connectors and mounting bolts
Weight	185g
Material	Aluminum with powder coating
Color	White
Fixation holes	4 x $\phi 4.5$
Insertion loss in PB	<1dB
Return loss in PB	>15dB
Ripple in PB	<0.5dB
Rejection	>50dB @ 5500MHz >50dB @ 6100MHz >80dB @ 1000MHz-4GHz
Power	10W
Impedance	50 Ω
Connectors	2 x N(f)
Operation Temperature	-40°C ... +85°C
Storage Temperature	-55°C ... +85°C
Ingress Protection	IP66
Compliance	EN50155, IEC61373, EN45545-2, RoHS 2002/95/EC, REACH



3623-0801 Power splitter 2-6GHz

Function	2 – Way reactive Power Splitter. Approved for track side installation and inside trains.
Product number	3623-0801 (NCH 105102)
Frequency	2 - 6 GHz
Physical Dimensions	LxWxH: 120mm x 61mm x 28mm
Weight	235g
Material	Aluminum with powder coating, Mounting plate: SUS304
Color	White
Fixation holes	4 x $\phi 4.5$
Insertion loss	$\leq 3.3\text{dB}$ (incl. 3dB splitter loss)
Return loss	$\geq 18\text{dB}$
Amplitude balance	0.5dB
Isolation between output ports	$\geq 3\text{dB}$
Power	300W
Impedance	50 Ω
Connectors	3 x N(f)
Operation Temperature	-40°C ... +85°C
Storage Temperature	-55°C ... +85°C
Ingress Protection	IP67
Compliance	EN50155, IEC61373, EN45545-2, RoHS 2002/95/EC, REACH



3623-0802 Hybrid coupler

Function	3dB Hybrid Coupler. Approved for track side installation and inside trains.
Product number	3623-0802 (NCH 105078)
Frequency	4.8 - 6 GHz
Physical Dimensions	LxWxH: 88mm x 86mm x 30mm
Weight	280g
Material	Aluminum with powder coating
Color	White
Fixation holes	4 x $\phi 4.5$
Insertion loss	$\leq 3.5\text{dB}$ (incl. 3dB coupling loss)
Return loss	$\geq 15\text{dB}$
Amplitude balance	0.5dB
Isolation between ports	$\geq 22\text{dB}$
Power	20W
Impedance	50 Ω
Connectors	4 x N(f)
Operation Temperature	-40°C ... +85°C
Storage Temperature	-55°C ... +85°C
Ingress Protection	IP67
Compliance	EN50155, IEC61373, EN45545-2, RoHS 2002/95/EC, REACH



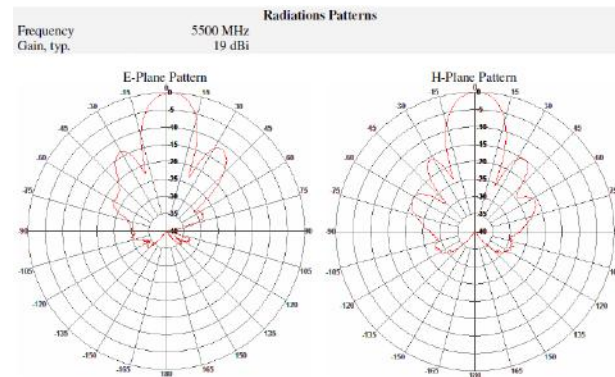
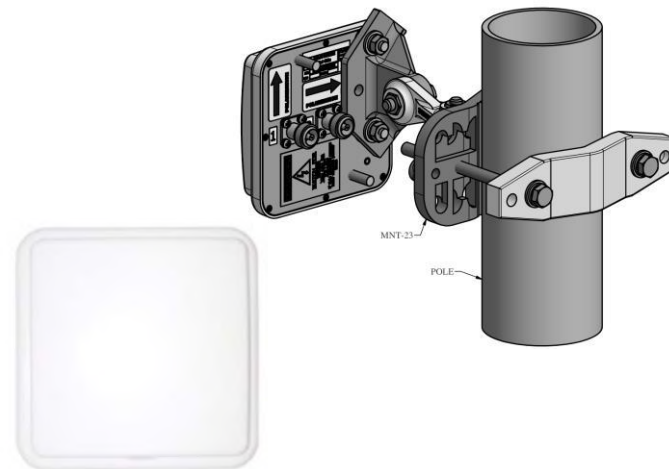
3623-0803 RF Surge Protector, N-Type

Function	Single or multi-channel transmitters and/or Receivers, maintenance free, and multi-strike compatible for 2.0-6.0 GHz., Weatherproof when installed
Product number	3623-0803 (NCH 104704)
Passband	2.0 – 6.0 GHz
Physical Dimensions	LxWxH: 69.1mm x 18.5mm x 18.5mm
Weight	185g
Color	Grey
Mount	Bulkhead
Insertion loss in PB	$\leq 0.1\text{dB}$ typical ($\leq 0.2\text{dB}$ MAX.)
Return loss in PB	$\geq 20\text{dB}$ typical
VSWR	≤ 1.2 to 1 typical (≤ 1.3 to 1 MAX.)
Surge LET through voltage	10kA IEC 61000-4-5 8/20 μs waveform $\leq \pm 3$ volts for 3kA @ 8/20 μs waveform
Power	10W
Connectors	2 x N(f)
Operation Temperature	-40°C ... +85°C
Storage Temperature	-40°C ... +85°C
Ingress Protection	IP65
Compliance	IEC 60529, BELLCORE #TA-NWT-000487, PROCEDURE 4.11, Wind Drifen (120 MPH), RAIN INTRUSION TEST



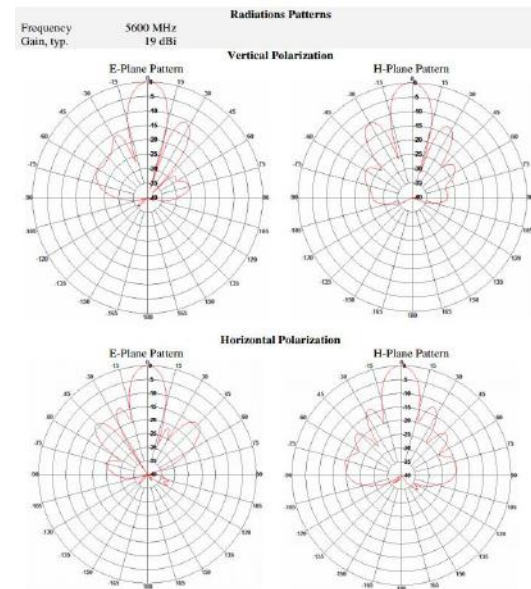
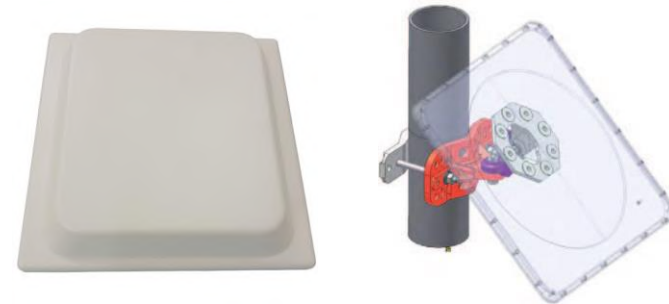
3623-0810 Trackside Antenna 13dBi Dual-Pol

Function	5 GHz Dual Polarized Antenna designed to provide full coverage for the 5 GHz frequency band.
Product number	3623-0810 (NCH 105180)
Frequency Range	4.9 – 6.1 GHz
Physical Dimensions	LxWxH: 112mm x 112mm x 33.5mm
Weight	147g
Material	Aluminum Backplane
Color	White (front)
Connector	2x N, female
GAIN typ.	H-pol 14.5dBi V-pol 13.5 dBi
Polarization typ.	Dual Pole Linear, Vertical & Horizontal +/- 45° (diamond shape)
3dB Beam-With typ.	H-Plane typ. 35° E-Plane typ. 35°
Front to Back Ratio min	-20dB
Port to Port Isolation min	-24dB
Input Power max.	50W MAX.
Impedance	50 Ω
Mount	MNT-23 included
Operation Temperature	-55°C ... +65°C
Storage Temperature	-55°C ... +65°C
Ingress Protection	IP67
Compliance	Salt Fog IEC 68-2-11, Humidity ETS 300019-1-4, EN302085(Ann.A.1.1)



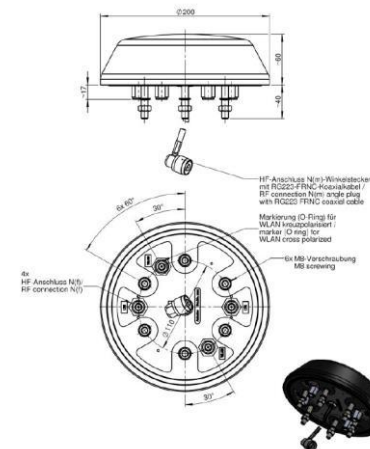
3623-0811 Trackside Antenna 18dBi Dual-Pol

Function	Dual Polarized Antenna designed to provide full coverage for the 5 GHz frequency band.
Product number	3623-0811 (NCH 104949)
Frequency Range	4.9 – 6.1 GHz
Physical Dimensions	LxWxH: 155mm x 155mm x 28mm
Weight	380g
Material	Aluminum Backplane with UV Protected PC radome
Color	grey
Connector	2x N-type female
GAIN typ.	4.9 - 5.875 GHz @ 19 dBi 5.875 - 6.1 GHz @ 19 dBi
Polarization typ.	Dual: Linear, Vertical & Horizontal
3dB Beam-With typ.	H-Plane 16° E-Plane 16°
Front to Back Ratio mi	ETSI TS2ETSI TS2
Input Power max.	10W MAX.
Impedance	50 Ω
Mount	MNT-22 included
Operation Temperature	- 55°C to + 65°C
Ingress Protection	IP67
Compliance	Salt Fog IEC 68-2-11, Humidity ETS 300019-1-4, EN302085(Ann.A.1.1)



3623-0812 Rooftop WLAN 2.4/5 MIMO 10dBi, LTE/UMTS, GPS Ant.

Function	Multiband-Train Antenna - WLAN 2.4/5.8 (MIMO) - LTE 700 (MIMO) - GSM-R - GSM 1800 - UMTS - LTE 2600 (MIMO) - GPS - GLONASS - Galileo - BeiDou
Product number	3623-0812
Frequency Range	WLAN 2.4 -2.5 GHz, 5.18 – 5.835 GHz
Physical Dimensions	D, H: 200mm, 60mm
Weight	1500g
Material	Plastic case UV-resistance
Color	Black
Connector	5x N, female
GAIN typ.	WLAN 2.4 GHz 9.1 dBi WLAN 5.8 GHz 10.1 dBi
Polarization typ.	WLAN Crosspolar, Vertical
Input Power max.	50 W
Impedance	50 Ω
Operation Temperature	-60°C ... +85°C
Storage Temperature	-60°C ... +85°C
Ingress Protection	IP6x
Compliance	EN 50155, EN 50122-1, EN 50124, IEC 60068, IEC 61373, ISO 20653, ISO 9227, EN 45545-2 2014/30/EU; 2006/28/EC; 2002/95/EC



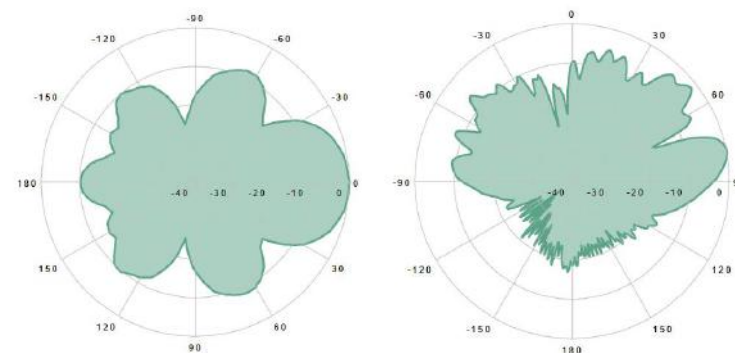
3623-0816 ITS WLAN 2.4/5 MIMO 9dBi, LTE/UMTS, GPS Ant.

Function	Coach Multiband ITS Antenna - WLAN 2.4/5.8 (MIMO) - LTE 700 (MIMO) - GSM-R - GSM 1800 - UMTS - LTE 2600 (MIMO) - GPS L1/GLONASS
Product number	3623-08xx
Frequency Range	WLAN 2.4-2.5 GHz/4.9-5.9 GHz LTE 698-960 MHz/1710-2700/3400-3800/5150-5950 MHz GPS: 1565-1608 MHz
Physical Dimensions	D, H: 137mm, 90mm
Weight	1.4kg
Material	Aluminium base, Radome: UV-stable rugged thermoplastics
Color	White
Connector	6 x QMA plug with pigtailes (48cm)
GAIN typ.	WLAN 9 dBi LTE 2.4..6.8 dBi GNSS @3.0 VDC: 26 dB (typical)
Polarization typ.	Linear Vertical, GNSS: Right hand circular
Input Power max.	50 W
Impedance	50 Ω
Installation	1-inch OD, 3/4-inch long (.75") zinc stud mount with jam nut
Operation Temperature	-40°C ... +85°C
Ingress Protection	IP67
Compliance	



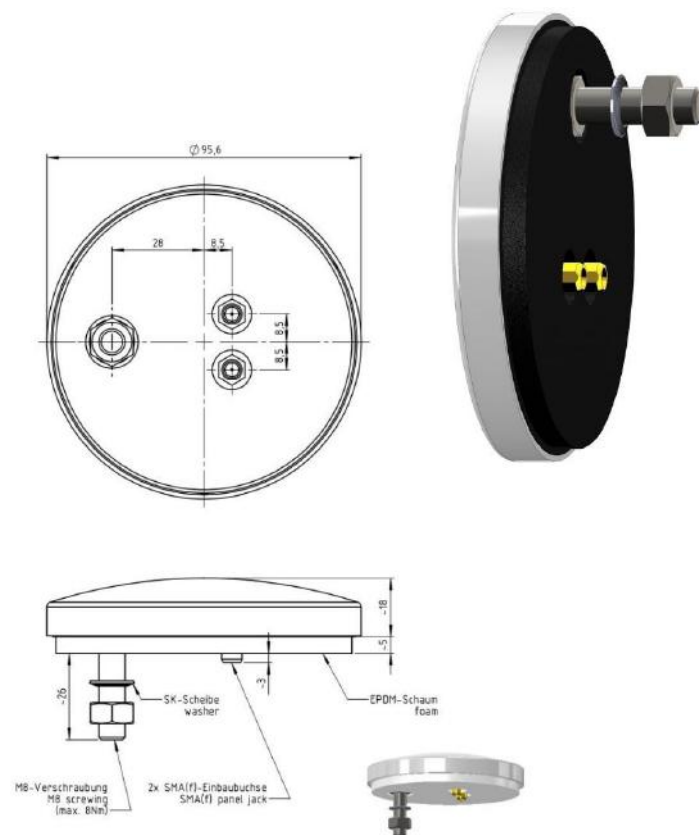
3623-0813 Rooftop WLAN 12dBi

Function	Railway rooftop directional high gain antenna for WiFi-5 bands. Designed for use with dedicated trackside/tunnel antennas. Supports the 4.9 to 5.975 GHz Bands.
Product number	3623-0813
Frequency Range	4.9 – 5.15 GHz, 5.15 – 5.975 GHz
Physical Dimensions	LxWxH: 260mm x 100mm x 90mm
Weight	1400g
Material	Plastic case UV-resistance
Color	Black
Connector	N, female
GAIN	12 dBi
Polarization typ.	WLAN Crosspolar, Vertical
3dB Beam-With	H 48°, V 17°/16°
Input Power max.	50 W
Impedance	50 Ω
Operation Temperature	-40°C ... +85°C
Storage Temperature	-40°C ... +85°C
Ingress Protection	IP65, IP67
Compliance	EN 50155:2004, DIN 5510-2, BS 6853, NF F16-101/102, EN 45545-2.



3623-0814 ANTENNA DUALPOL 2.4GHz/5GHz 8dBi ROUND

Function	Dual band MIMO transmitting and receiving train antenna for indoor use
Product number	3623-0814
Frequency Range	2.4 – 2.5 GHz, 5.18 – 5.5835 GHz
Physical Dimensions	D, H: 96mm, 23mm
Weight	120g
Material	Plastic case UV-resistance
Color	light grey
Connector	2x SMA(f)
GAIN	2.4 GHz 8.4 dBi / 5.8 GHz 9.1 dBi
Polarization typ.	vertical / horizontal
Input Power max.	50 W
Impedance	50 Ω
Mounting	1 x M8 bolt
Operation Temperature	-40°C ... +80°C
Storage Temperature	-40°C ... +80°C
Ingress Protection	IP65, IP64
Compliance	EN 50155, IEC 61373, EN 45545-2, ECE R118



3623-0815 Antenna 4x4 Omni MIMO, incl. Cables

Function	Small omni-directional 4x4 MIMO cabinet/ceiling mount antenna, Supports Wifi 2.4 / 5 GHz bands.
Product number	3623-0815
Frequency Range	2.3 – 2.5 GHz, 4.-9 – 5.975 GHz
Physical Dimensions	D, H: 145mm, 33.2mm
Weight	920 g
Material	PC (Polycarbonate)
Color	grey
Connector	4x QMA plug (m), Cable RADOX_RF_316, 1,5m
GAIN	2.4 GHz 1 dBi / 5.8 GHz 3.5 dBi
Polarization typ.	vertical
Input Power max.	10 W
Impedance	50 Ω
Operation Temperature	-45°C ... +85°C
Storage Temperature	-45°C ... +85°C
Ingress Protection	IP68, IP69
Compliance	EN 50155, EN 45545-2, EN 60068-2-1/2, 60068-2-30, EN 60068-2-11/14, IEC 62262



3623-0820

RF-Cable QMA-W-PLUG QMA-W-PLUG 2m

Function	QMA to QMA cable assembly
Product number	3623-0820
Frequency Range	2.3 – 2.5 GHz, 4.-9 – 5.975 GHz
Lenght	2m
Cable loss	1.4dB
Cable type	SPUMA_240-FR-01
Connector 1	QMA-W-50 straight
Connector 2	QMA-W-50 straight



3623-0821

RF-Cable QMA-W-PLUG N-TYPE-PLUG 1m

Function	QMA to N-type cable assembly
Product number	3623-0821
Frequency Range	2.3 – 2.5 GHz, 4.-9 – 5.975 GHz
Lenght	1m
Cable loss	0.7dB
Cable type	SPUMA_240-FR-01
Connector 1	QMA-W-50 straight
Connector 2	N-Type straight



3623-0822

RF-Cable N-STR-PLUG N-R/A-PLUG 2m

Function	QMA to N-type cable assembly
Product number	3623-0822
Frequency Range	2.3 – 2.5 GHz, 4.-9 – 5.975 GHz
Lenght	2m
Cable loss	1.4dB
Cable type	SPUMA_240-FR-01
Connector 1	N-Type straight
Connector 2	N-Type angled



3623-0823

RF-Cable N-STR-PLUG N-STR-PLUG 4m

Function	QMA to N-type cable assembly
Product number	3623-0823
Frequency Range	2.3 – 2.5 GHz, 4.-9 – 5.975 GHz
Lenght	4m
Cable loss	1.4dB
Cable type	SPUMA_400-FR-01
Connector 1	N-Type straight
Connector 2	N-Type straight



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