



# Solution for TETRA / TETRAPOL coverage

## RF Accessories





# Solution for Indoor TETRA coverage

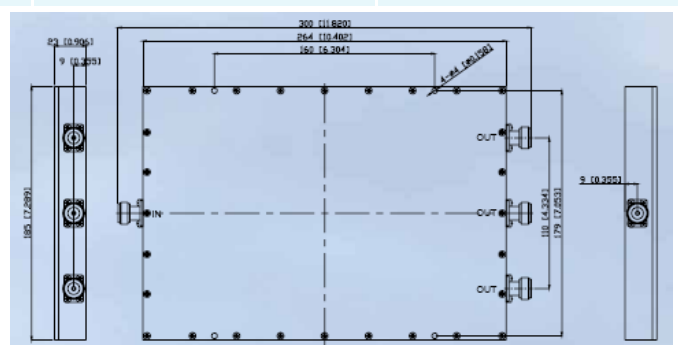
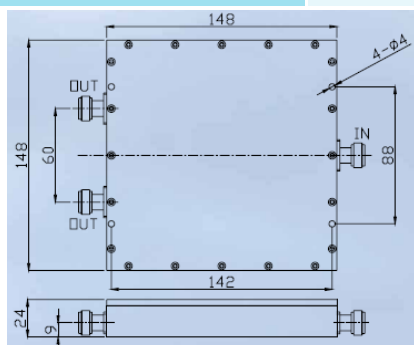
## TETRA / TETRAPOL RF Accessories

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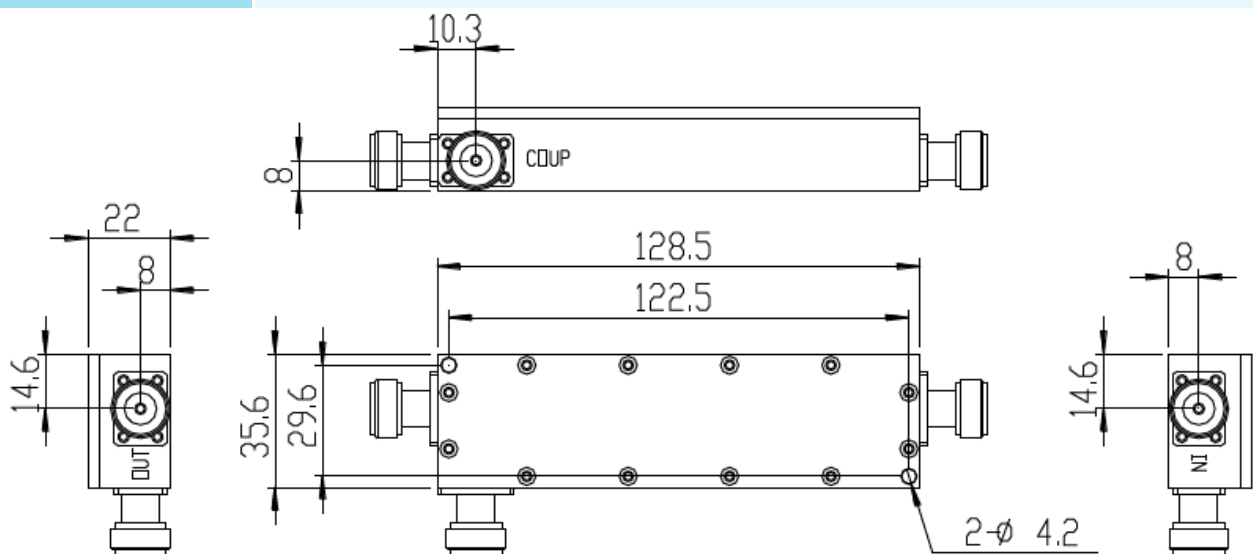


# INDOOR COUPLERS

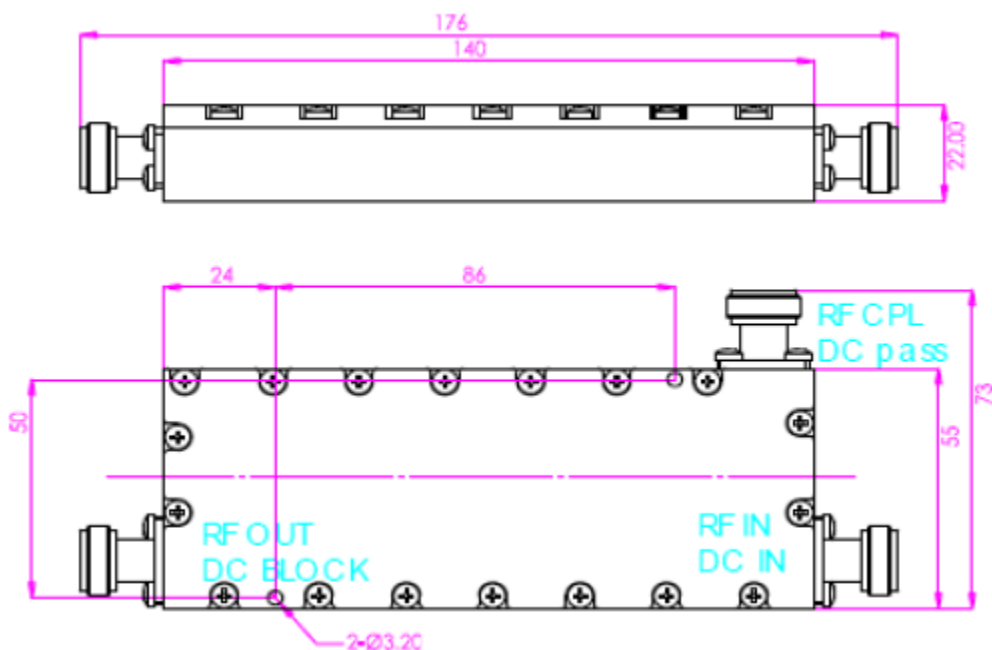
Balanced Power Splitters 380-520 MHz	Ref 602 670	Ref 602 671	Ref 602 672
Type	1/2-1/2 Splitter	1/3-1/3-1/3 Splitter	1/4-1/4-1/4-1/4 Splitter
Frequency range	100 - 500 MHz		
Division Ratio	3.01 dB	4.8 dB	6 dB
Insertion Loss	≤ 3.5 dB	≤ 5.8 dB	≤ 7.0 dB
Isolation	≥ 14 dB	≥ 18 dB	≥ 18 dB
Ripple in-band	≤ ±0.3 dB	≤ ±0.3 dB	≤ ±0.4 dB
Input Return Loss	≥ 18 dB		
Amplitude Balance	≤ 0.3 dB		≤ 0.4 dB
Phase Balance	≤ 5°		
Impedance	50 Ω		
IM3	≤ -140 dBc @ +43 dBm x 2		
Connectors	N female		
Power Rating	100 W		
Temperature	-30°C / +70°C		
Dimensions	148x148x24 mm	264x185x23 mm	320x230x23
Weight	0.82 kg	1.80 kg	2.60 kg



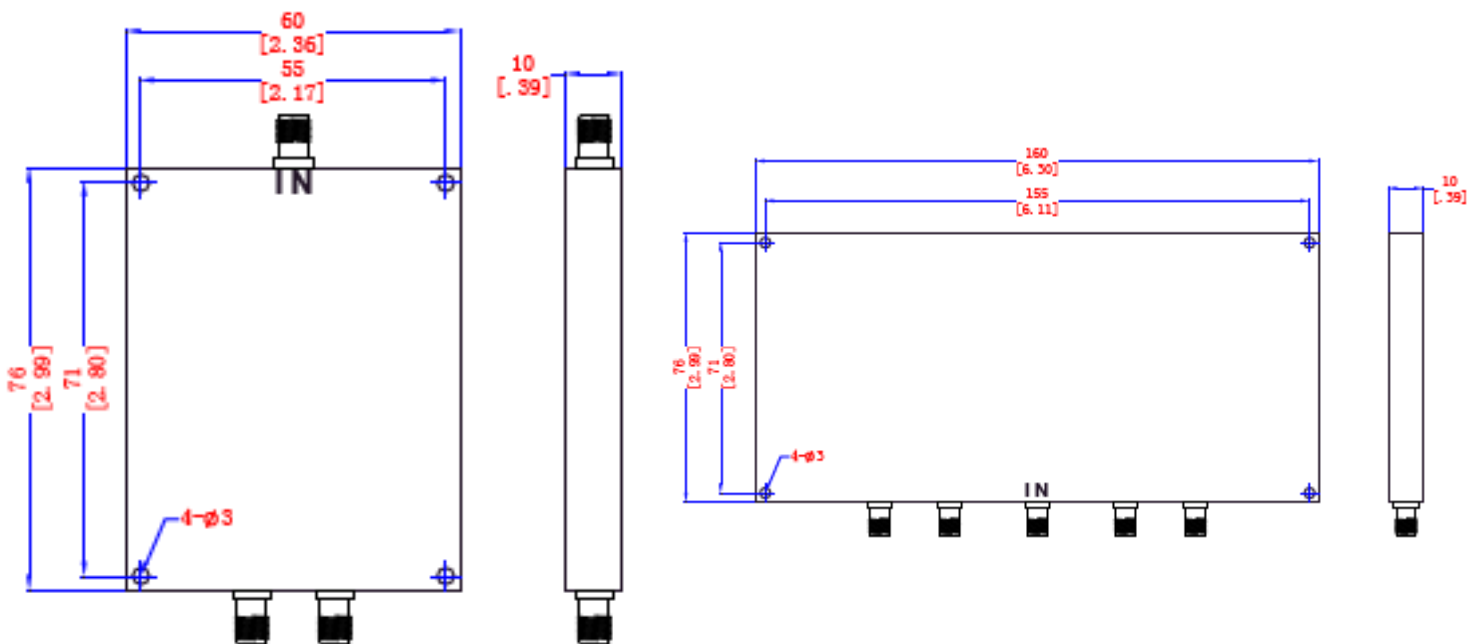
Unbalanced Power Splitters 380-520 MHz	Ref 602 673	Ref 602 674	Ref 602 688	Ref 602 675
Type	1/3-2/3 Splitter	1/4-3/4 Splitter	1/5-4/5 Splitter	1/10-9/10 Splitter
Frequency range	380 - 520 MHz			
Coupling	5.0 dB	6.0 dB	7.0 dB	10.0 dB
Insertion Loss	≤ 2.4 dB	≤ 1.95 dB	≤ 1.5 dB	≤ 1.0 dB
Ripple in-band	≤ ±1.0 dB			
Isolation	≥ 20 dB			
Return Loss	≥ 20 dB			
Impedance	50 Ω			
Connectors	N female			
Power Rating	50 W			
Temperature	-10°C / +50°C			
Size	128.5 x 35.6 x 22 mm <sup>3</sup>			
Weight	0.24 kg			



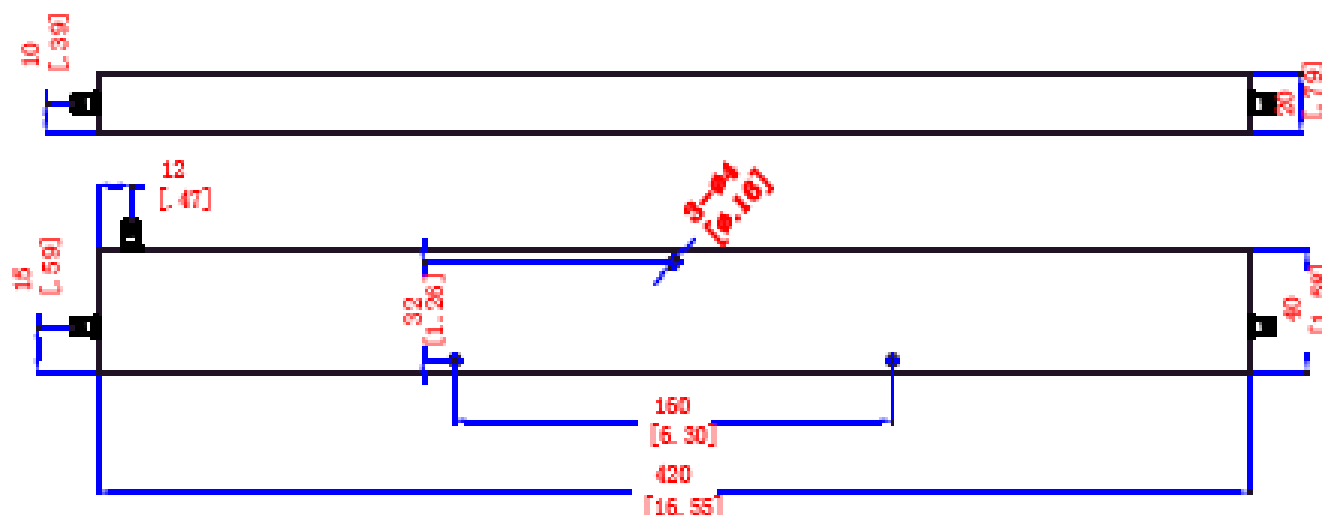
<b>Special Coupler 10dB 380-520 MHz for TETRA Boosters</b>	<b>Ref 602 669</b>
DC Pass / DC Block	DC block on 9/10 access - DC pass on 1/10 access
Frequency range	380 - 520 MHz
Coupling	10.0 ± 1.0 dB
Insertion Loss	≤ 1.0 dB
Directivity	≥ 20 dB
VSWR	≤ 1.3
Impedance	50 Ω
Connectors	N female
Power Rating	200 W
Temperature	-25°C / +65°C
Size	140 x 55 x 22 mm <sup>3</sup>
Weight	0.25 kg



Balanced Power Splitter 140 – 2000 MHz	Ref 602 676	Ref 602 677
Type	1/2-1/2 Splitter	1/4-1/4-1/4-1/4 Splitter
Frequency Range	140-2000 MHz	
Impedance	50 Ω	
Insertion Loss	≤ 1.3 dB	≤ 2.5 dB
VSWR	≤ 1.30	≤ 1.50
Isolation Rate	≥ 18 dB	
Connectors	SMA female	
Input Power	20 W	
Temperature	-20°C / +50°C	
Size	76 x 60 x 10 mm <sup>3</sup>	76 x 160 x 10 mm <sup>3</sup>
Weight	0.200 kg	0.400 kg



<b>Directional Coupler 140 – 2000 MHz</b>	<b>Ref 602 678</b>
Type	1/10-9/10 Splitter
Frequency Range	140-2000 MHz
Impedance	50 Ω
Insertion Loss	≤ 1.0 dB
VSWR	≤ 1.40
Coupling	20 ± 1.5 dB
Connectors	SMA female
Input Power	20 W
Temperature	-20°C / +50°C
Size	420 x 14 x 10 mm <sup>3</sup>
Weight	0.500 kg







# OUTDOOR COUPLERS

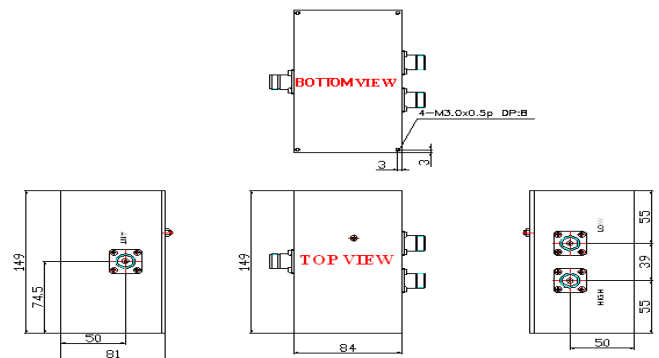
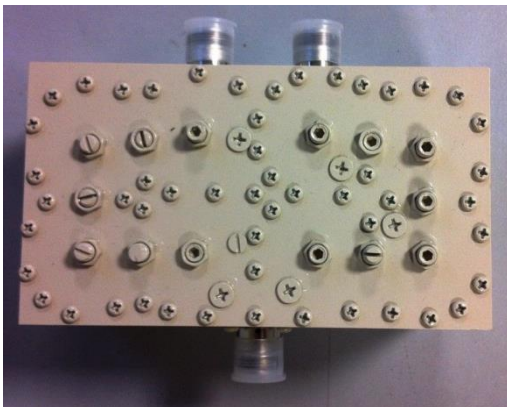
Directional Couplers 330-520 MHz	Ref 602 689
Frequency range	330 - 520 MHz
Coupling	3.0 dB $\pm$ 0.3 dB
Isolation	$\geq$ 36 dB
VSWR	$\leq$ 1.06
Connectors	7/16 socket
Power Rating	$\leq$ 1000 W
Temperature	-40°C / +70°C
Ingress Protection	IP 68
Weight	1.4 kg





# DIPLEXERS

TETRA Diplexers		Ref 509 735	Ref 509 654	Ref 509 736
Frequency range	Access 1	380 - 400 MHz	410 – 430 MHz	380 - 400 MHz
	Access 2	410 – 430 MHz	450 – 470 MHz	450 – 470 MHz
Insertion loss		≤ 1 dB		
Ripple		≤ 0.7 dB		
Return loss		≥ 20 dB		
Rejection for each access		> 50 dB		
Input power		≤ 20 W		
Impedance		50 Ω nominal		
Dimensions		84 x 149 x 81 mm		
Weight		2 kg		
RF Connector		Nf		
Operating temperature		- 10°C to + 60°C		
Environmental Protection		IP 52 (indoor)		





# ANTENNAS

Omni 380-470 MHz	Ref 602 918	Ref 602 919
<b>Electrical Features</b>		
Type	Colinear	
Frequency range	380-430 MHz	420-470 MHz
Impedance	50 Ω	
Radiation (H-plane) beamwidth @ -3dB	360° Omnidirectional	
Radiation (E-plane) beamwidth @ -3dB	40°	
Polarization	Linear Vertical	
Gain	5.15 dBi	
Max Power (CW) @ 30°C	75 W	
Grounding Protection	All metal parts are DC-grounded, the inner conductor shows a DC short	
Connector	N-female with rubber protection	
<b>Mechanical Features</b>		
Materials	White cylindrical fiberglass radome Ø28.6 mm, anodized 6063-T5 aluminum, brass, stainless steel, copper, EPDM rubber	
Wind Load @ 150 km/h	53 N	
Wind Resistance	180 Km/h	
Wind Surface	0.044 m <sup>2</sup>	
Height (approx..)	1380 mm	
Weight (approx..)	1215 g	1200 g
Temperature	-40°C / +80°C	
Mounting mast	Side mast whit "V" bolt Ø 35-54 mm	
Boom / Dipole / Element Diameter	Ø 32 mm / Ø 24 mm / Ø 12 mm	



Wide-Band Yagi 380-470 MHz	Ref 602679	Ref 602680	Ref 602681	Ref 602682	Ref 602683	Ref 602684	Ref 602685
<b>Electrical Features</b>							
Type	Dipole	3 elements Yagi		6 elements Yagi		10 elements Yagi	
Frequency range	380-470 MHz	380-440 MHz	400-470 MHz	380-440 MHz	400-470 MHz	380-440 MHz	400-470 MHz
Impedance	50 Ω						
Radiation (H-plane) beamwidth @ -3dB	200°	125°	125°	70°	70°	50°	50°
Radiation (E-plane) beamwidth @ -3dB	68°	65°	65°	55°	55°	45°	45°
Front to back ratio	≥ 8 dB	≥ 17 dB	≥ 17 dB	≥ 17 dB	≥ 17 dB	≥ 18 dB	≥ 18 dB
Polarization	Linear Vertical	Linear Vertical or Horizontal					
Gain	4.5 dBi	7 dBi	7 dBi	11 dBi	11 dBi	14 dBi	14 dBi
Max Power (CW) @ 30°C	150 W						
Grounding Protection	All metal parts are DC-grounded, the inner conductor shows a DC short						
Connector	N-female with rubber protection						
<b>Mechanical Features</b>							
Materials	Anodized 6063-T5 Aluminium, PDM rubber, thermoplastic UV stabilized, Chromed Brass						
Wind Load @ 150 km/h	48 N	65 N	63 N	100 N	96 N	150 N	142 N
Wind Resistance	200 Km/h	180 Km/h	180 Km/h	150 Km/h	150 Km/h	120 Km/h	120 Km/h
Wind Surface	0.033 m <sup>2</sup>	0.048 m <sup>2</sup>	0.047 m <sup>2</sup>	0.078 m <sup>2</sup>	0.075 m <sup>2</sup>	0.121 m <sup>2</sup>	0.115 m <sup>2</sup>
Dimensions W x h	380 x 340 mm	565 x 400 mm	525 x 375 mm	1180 x 400 mm	1130 x 375 mm	2125 x 400 mm	2000 x 375 mm
Turning radius	240 mm	460 mm	420 mm	1050 mm	1000 mm	1990 mm	1860 mm
Weight	950 g	1130 g	1100 g	1540 g	1490 g	2120 g	2040 g
Temperature	-40°C / +60°C						
Mounting mast	Ø 35-52 mm						
Boom / Dipole / Element Diameter	Ø 32 mm / Ø 24 mm / Ø 12 mm						

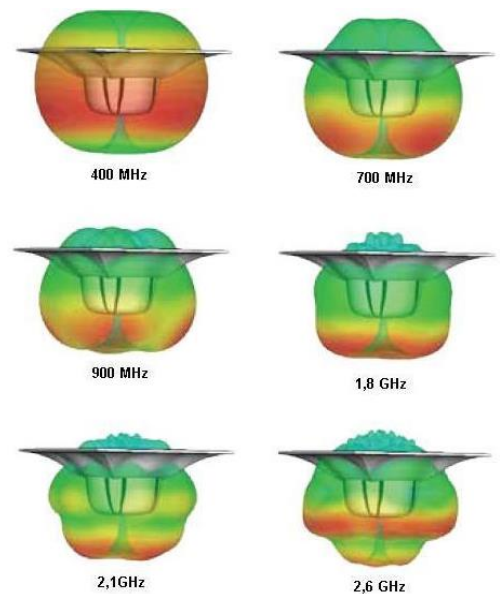
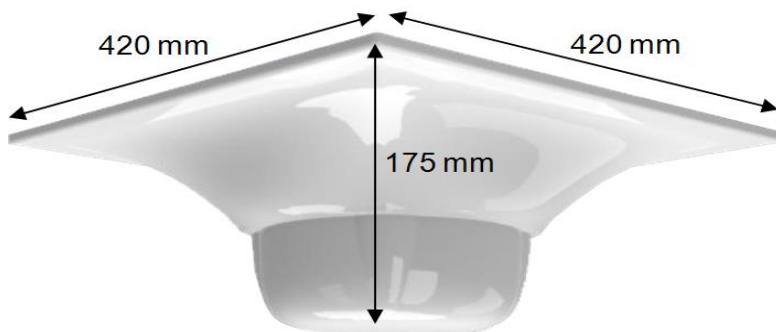


TETRA Indoor Ceiling Mount Antenna 380-430 MHz	Ref 602 686
<b>Electrical Features</b>	
Frequency range	380 - 430 MHz
Impedance	50 $\Omega$
VSWR	$\leq 2.0:1$
Power Rating	50 W
Polarization	Vertical
Forward gain	2 dBi
Radiation (H-plane) beamwidth @ -3dB	360°
Radiation (E-plane) beamwidth @ -3dB	90°
IM3	$\leq -140$ dBc @ +37 dBm x 2
<b>Mechanical Features</b>	
Connector	N female
Element	FR4 Printed Circuit
Radome	ABS White Fire Retardant
Size	$\varnothing$ 231 mm / h 81 mm
Weight	400 g





<b>Broadband Indoor Ceiling Mount Antenna 380-2600 MHz</b>	<b>Ref 602 693</b>		
<b>Electrical Features</b>			
Frequency range	380 - 2600 MHz		
Impedance	50 Ω		
VSWR	≤ 2.3:1		
Power Rating	25 W		
Polarization	Vertical		
Forward gain	1 dBi @ 400 MHz	4.5 dBi @ 900 MHz	6.5 dBi @ ≥ 1800 MHz
Radiation	Omnidirectional		
<b>Mechanical Features</b>			
Connector	N female		
Radome	ABS White		
Size	175mm x 420mm x 420mm		



TETRA Indoor Wall Mount Antenna 380-470 MHz	Ref 602 687
<b>Electrical Features</b>	
Frequency range	380 - 470 MHz
Impedance	50 Ω
VSWR	≤ 2.0:1
Front to back ratio	8 dB
Power Rating	50 W
Polarization	Vertical & Horizontal
Forward gain	4 dBi
Radiation (H-plane) beamwidth @ -3dB	130°
Radiation (E-plane) beamwidth @ -3dB	120°
IM3	≤ -140 dBc @ +37 dBm x 2
<b>Mechanical Features</b>	
Connector	N female
Materials	Aluminium, PTFE
Radome / Fasteners	ABS White Fire Retardant / Stainless Steel A2-70
Size	30 cm x 32 cm x 14 cm
Weight	400 g





# Solution for Indoor TETRA coverage

## TETRA / TETRAPOL RF Accessories

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