

Products for LTE 2.6 / WiMAX applications

Edition: February 2012



LTE 2.6 / WiMAX

(Products covering >2.2 GHz)

1. 2.5 GHz Outdoor Antennas

Type No.	Description	Availability	Remarks
----------	-------------	--------------	---------

1.1 Omni / LogPer

800 10442	VPol	2500-2700 MHz	360°	11dBi	0°T	In serial production	Lightning protected
742 192V01	VPol	790-2690 MHz	65°	11 dBi	0°T	In serial production	LogPer antenna

1.2 Single-band antennas

800 10678	XPol	1710-2690 MHz	40°	19,5dBi	2°-10°T	3Q/2012	Ultra-Broadband adjustable
800 10711	XPol	1710-2690 MHz	65°	9,5dBi	2°T	2Q/2012	Length: 155mm, UBB
800 10761	XPol	1710-2690 MHz	65°	12dBi	4°T	In serial production	Length: 342mm, UBB
800 10681	XPol	1710-2690 MHz	65°	16,5dBi	0°-12°T	In serial production	Ultra-Broadband adjustable
800 10621V01	XPol	1710-2690 MHz	65°	18dBi	0°-12°T	In serial production	Ultra-Broadband adjustable, ESLS
800 10651	XPol	1710-2690 MHz	65°	19dBi	0°-6°T	In serial production	Ultra-Broadband adjustable
800 10679	XPol	1710-2690 MHz	85°	17dBi	2°-12°T	2Q/2012	Ultra-Broadband adjustable
800 10680	XPol	1710-2690 MHz	85°	19dBi	0°-6°T	4Q/2012	Ultra-Broadband adjustable

1.3 2-Multi-band antennas

800 10682	XXPol	1710-2690 MHz 1710-2690 MHz	65° 65°	16,5dBi 16,5dBi	0°-12°T 0°-12°T	In serial production	Ultra-Broadband adjustable Double X-Pol unit for 2 systems or MIMO applic.
800 10622	XXPol	1710-2690 MHz 1710-2690 MHz	65° 65°	18dBi 18dBi	0°-12°T 0°-12°T	In serial production	Ultra-Broadband adjustable Double X-Pol unit for 2 systems or MIMO applic. ESLS
800 10652	XXPol	1710-2690 MHz 1710-2690 MHz	65° 65°	19dBi 19dBi	0°-10°T 0°-10°T	In serial production	Like 80010622, but 2m
800 10644	XXPol	1710-2170 MHz 2490-2690 MHz	65° 60°	18dBi 18dBi	0°-10°T 0°-10°T	In serial production	Ultra-Broadband, split via filters to GSM/UMTS and LTE/WiMAX, 4 ports and 2 RET interfaces. Slim version , like a 1 column antenna
800 10689	XXPol	1710-2690 MHz 1710-2690 MHz	85° 85°	17dBi 17dBi	0°-10°T 0°-10°T	3Q/2012	Ultra-Broadband adjustable Double X-Pol unit for 2 systems or MIMO applic.

1.4 Dual-band antennas

800 10753	XXPol	790-960 MHz 1710-2690 MHz	65° 65°	8dBi 9dBi	0°T 0°T	2Q/2012	2-port, 320mm, UBB
800 10664	XXPol	790-960 MHz 1710-2690 MHz	65° 65°	15dBi 17,5dBi	0°-16°T 2°-10°T	In serial production	Like 80010665, but 1334mm

800 10665	XXPol	790-960 MHz 1710-2690 MHz	65° 65°	16dBi 18,5dBi	0°-10°T 0°-6°T	In serial production	Dual-band with one UBB High-band and one LTE800 compliant low-band, 4 ports separate adj. DT, 2m
800 10666	XXPol	790-960 MHz 1710-2690 MHz	65° 65°	17dBi 18,5dBi	0°-10°T 0°-6°T	In serial production	Like 80010665, but 2.6m
800 10693	XXPol	790-960 MHz 1710-2960 MHz	85° 85°	13,5dBi 17dBi	0°-12°T 0°-10°T	End of 2012	Dual-band with one UBB High-band and one LTE800 compliant low-band, 4 ports separate adj. DT, 1,3m
800 10694	XXPol	790-960 MHz 1710-2690 MHz	85° 85°	15,5dBi 18,5dBi	0°-10°T 0°-6°T	End of 2012	Like 80010693, but, 1.9m
800 10695	XXPol	790-960 MHz 1710-2690 MHz	85° 85°	16,5dBi 18,5dBi	0°-10°T 0°-6°T	End of 2012	Like 80010693, but 2.4m

1.5 Triple-band antennas

800 10690	XXXPol	790-960 MHz 1710-2690 MHz 1710-2690 MHz	65° 65° 65°	14,5dBi 15dBi 15dBi	0°-12°T 0°-12°T 0°-12°T	4Q/2012	Like 80010692, but 1,3m
800 10691	XXXPol	790-960 MHz 1710-2690 MHz 1710-2690 MHz	65° 65° 65°	16dBi 16dBi 16dBi	0°-10°T 0°-12°T 0°-12°T	In serial production	Like 80010692, but 2m
800 10692	XXXPol	790-960 MHz 1710-2690 MHz 1710-2690 MHz	65° 65° 65°	17dBi 17dBi 17dBi	0°-10°T 0°-10°T 2°-10°T	In serial production	2,6m triple-band Antenna with two stacked UBB high-bands and one LTE800 compliant low-band
800 10674	XXXPol	790-960 MHz 1710-2170 MHz 2490-2690 MHz	65° 65° 65°	15dBi 17dBi 16,5dBi	0°-16°T 2°-10°T 2°-10°T	In serial production	Like 80010675, but 1334mm
800 10675	XXXPol	790-960 MHz 1710-2170 MHz 2490-2690 MHz	65° 65° 65°	16dBi 18dBi 18dBi	0°-10°T 0°-6°T 0°-6°T	In serial production	2m triple-band antenna with ultra- broadband technology split by filters. 6 ports and 3 RET interfaces. LTE800 compliant.
800 10676	XXXPol	790-960 MHz 1710-2170 MHz 2490-2690 MHz	65° 65° 65°	17dBi 18dBi 18dBi	0°-10°T 0°-6°T 0°-6°T	In serial production	Like 80010675, but 2.6m
800 10727	XXXPol	1710-2690 MHz 1710-2690 MHz 1710-2690 MHz	65° 65° 65°	18dBi 18dBi 18dBi	0°-12°T 0°-12°T 0°-12°T	3Q/2012	3UBB, column array with 1,3m length

1.6 Quad-band antennas

800 10684	4XPol	790-960 MHz 1710-1880 MHz 1920-2170 MHz 2490-2690 MHz	65° 65° 65° 65°	14,5dBi 16,5dBi 17dBi 17dBi	0°-12°T 0°-10°T 0°-10°T 0°-10°T	3Q/ 2012	Quad-band antenna with 1,4m length, 8 ports and 4 RET interfaces.
800 10685	4XPol	790-960 MHz 1710-1880 MHz 1920-2170 MHz 2490-2690 MHz	65° 65° 65° 65°	16dBi 18dBi 18dBi 18dBi	0°-10°T 0°-6°T 0°-6°T 0°-6°T	In serial production	Like 80010684, but 2m
800 10804	4XPol	790-862 MHz 880-960 MHz 1710-2170 MHz 2490-2690 MHz	65° 65° 65° 65°	14,5dBi 15dBi 17,5dBi 16,5dBi	2°-14°T 2°-14°T 2°-10°T 2°-10°T	3Q/2012	Quad-band antenna with 1,4m length, 8 ports and 4 RET interfaces.

800 10805	4XPol	790-862 MHz 880-960 MHz 1710-2170 MHz 2490-2690 MHz	65° 65° 65° 65°	16dBi 16dBi 18dBi 18dBi	0°-10°T 0°-10°T 2°-8°T 2°-8°T	April 2012	Quad-band antenna with 2m length, 8 ports and 4 RET interfaces.
800 10686	4XPol	790-960 MHz 1710-1880 MHz 1920-2170 MHz 2490-2690 MHz	65° 65° 65° 65°	17dBi 18dBi 18dBi 18dBi	0°-10°T 0°-6°T 0°-6°T 0°-6°T	In serial production	Like 80010685, but 2.6m
800 10806	4XPol	790-862 MHz 880-960 MHz 1710-2170 MHz 2490-2690 MHz	65° 65° 65° 65°	16,5dBi 17dBi 18dBi 18dBi	0°-10°T 0°-10°T 2°-8°T 2°-8°T	4Q/2012	Like 80010805, but 2.6m

Note: All types are most probably available for trials or tests on request.
XPol antennas are designed to support 2x2 MIMO.
XXPol antennas are designed to support 4x2, 4x4 or 2x(2x2) MIMO.
Further dual- and triple-band antenna solutions are in development.

2. Indoor

800 10465	VVPol	790-960 MHz 1710-2700 MHz	90°	7dBi	0°T	In serial production	Wall mounted, replacement of 800 10248 with up to 2.7 GHz
800 10677	VXPol	790-960 MHz 1710-2700 MHz	90°	7dBi	0°T	In serial production	Wall mounted, 790-960 MHz VPol, 1710-2700 MHz XPol with integrated combiner to support 2x2 MIMO in the high band.
800 10433	VPol	3300-3800 MHz	90°	7dBi	0°T	In serial production	Wall and ceiling mounted
800 10249	VPol	790-960 MHz 1425-3800 MHz 5150-6000 MHz	360°	2dBi	0°T	In serial production	Ceiling mounted
741 573	VPol	1710-2700 MHz	360°	2dBi	0°T	In serial production	Frequency range increased up to 2700 MHz, ceiling mounted
800 10431	VPol	1710-2700 MHz	360°	2dBi	0°T	In serial production	New frequency, improved version of 738 454
800 10430	VPol	1710-6000 MHz	360°	2dBi	0°T	In serial production	Ceiling mounted, replacement of 741 573 with up to 6 GHz
800 10847	VPol	790-960 MHz 1710-2700 MHz	360°	2dBi	0°T	2Q/2012	
800 10748	VPol	876-960 MHz 1710-2700 MHz	360°	2dBi	0°T	In serial production	Replacement: 80010137 1 low-band + 1UBB high-band omni ceiling mounted
800 10749	VPol	876-960 MHz 1710-2700 MHz	360°	2dBi	0°T	In serial production	Replacement: 80010173 Like 80010748, different shape
800 10709	VHPol	790-960 MHz 1710-2700 MHz 2500-2700 MHz	360°	2dBi	0°T	In serial production	Low-band & UBB high-band in VPol + LTE/WiMAX high-band with VHPol to support 2x2 MIMO

3. Train Antennas

870 10003	Train Antenna	790-2700 MHz	0dB	In serial production	With GPS
870 10007	Train Antenna	790-2700 MHz	0dB	In serial production	Without GPS
870 10010	Train Antenna	1710-3800 MHz	0dB	In serial production	Without GPS
870 10011	Train Antenna	1710-3800 MHz	0dB	In serial production	With GPS
860 10142	Low Noise Amplifier GPS		25 ± 2 dB	In serial production	

4. Antenna line and filter products

860 10017ff	2-/3-/4-way-splitter 694-2700 MHz; N; Indoor	In serial production	Increased frequency range
860 10100ff	2-/3-/4-way-splitter 694-3800 MHz; 7-16 / N; Indoor/Outdoor	In serial production	Several different splitters types, see data sheets
860 10130ff	2-way-splitter 380-3800 MHz; 7-16 / N; Indoor/Outdoor	In serial production	Extreme broadband solution
860 10020ff	2-way-tappers 790-2500 MHz; N; Indoor	In serial production	Increased frequency range, up to 2700 MHz VSWR < 2.2
860 10136ff	2-way-tappers 694-2700 MHz; N; Indoor	In serial production	
860 10150ff	2-way-tappers 694-2700 MHz; 7-16; Indoor/Outdoor	In serial production	Replacement of K63236067, K63236107, K63236157
782 11053ff 782 11063ff	Smart Bias Tees supporting 690-2700 MHz	In serial production	Redesign of existing types (78210253ff, 78210453ff) with increased frequency range
782 10577 782 10578	Bias Tee 690-2700 MHz	Available, but on request	Replacement: 793304 & 78210429
782 10504	Hybrid Combiner 2:1, 698-2690 MHz, 2 x 60W	In serial production	Low IM, broadband
782 10524	Hybrid Combiner 2:2, 698-2690 MHz, 2 x 150W	In serial production	Low IM, broadband
782 10534	Hybrid Combiner 4:4, 698-2690 MHz, 4 x 150W	Available	Low IM, broadband
782 10457ff	Dual-band Combiner 50-470 MHz/806-2500 MHz By-pass	In serial production	Different bypass solutions
782 10800	Dual-band Combiner 1710-2180/2400-2700 MHz	In serial production	Low loss (<0,1 dB), indoor & outdoor
782 11091ff	Dual-band Combiner 1710-2180/2400-2700 MHz	In serial production	
782 10660ff	Dual-band Combiner 470-960/1710-2700 MHz	In serial production	Low loss, indoor & outdoor, 4 different types
782 10680ff	Dual-band Combiner 380-960/1710-2700 MHz, high power	In serial production	Replacement of 78210250
782 11130ff	Triple-band Combiner 790-960/1710-2180/2490-2690 MHz,	Available	Low loss, indoor & outdoor, 4 different types
782 11190ff	Triple-band Combiner 791-862/880-960/1710-2690 MHz	March 2012	Low loss, indoor & outdoor, 4 different types
782 10640ff	Quad-band Combiner 900/1800/UMTS/LTE	In serial production	Low loss, indoor & outdoor, 4 different types
782 10900ff	SmartPlex Dual-Band Combiner 380-960/1710-2690 MHz	In serial production	More information re this particular device on request
782 10860	LTE TMA/MHA: Rx 2500-2570 / Tx 2620-2690 MHz, 12 dB	In serial production	FDD version, AISG 2.0

All types are most probably available for trials or tests on request.

Data sheet collection for all new releases and preliminary product proposals for LTE 2.6 / WiMAX applications only!

All other data sheets of serial production types please refer to our latest catalogue:

[“Catalog 698-6000 MHz Base Station Antennas, Filters, Combiners and Amplifiers for Mobile Communications \(99811767\)”](#)

and/or our website:

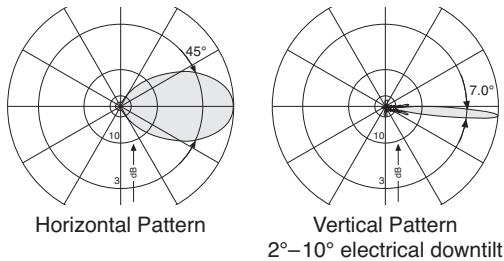
www.kathrein.de

Multi-band Panel 1710–2690
Dual Polarization X
Half-power Beam Width 40°
Adjust. Electrical Downtilt 2°–10°
 set by hand or by optional RCU (Remote Control Unit)

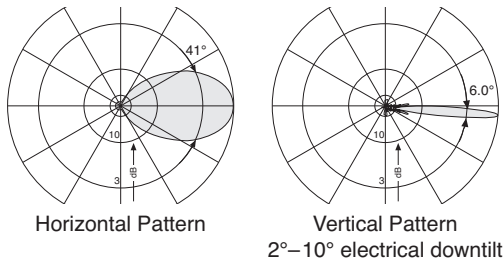
XPol Panel 1710–2690 40° 19.5dBi 2°–10°T

Type No.	80010678			
	1710–2690			
Frequency range	1710 – 1990 MHz	1920 – 2200 MHz	2200 – 2490 MHz	2490 – 2690 MHz
Polarization	+45°, –45°	+45°, –45°	+45°, –45°	+45°, –45°
Gain at 0° tilt	2 x 19.2 dBi	2 x 19.6 dBi	2 x 19.5 dBi	2 x 20.0 dBi
Horizontal Pattern:				
Half-power beam width	45°	41°	39°	36°
Front-to-back ratio, copolar	> 30 dB	> 30 dB	> 30 dB	> 30 dB
Cross polar ratio Sector 0° ±60°	Typically: 20 dB > 10 dB	Typically: 20 dB > 10 dB	Typically: 20 dB > 9 dB	Typically: 20 dB > 10 dB
Sidelobe suppression for sidelobes beside main beam	> 18 dB			
Vertical Pattern:				
Half-power beam width	7.0°	6.0°	5.2°	5.0°
Electrical tilt	2°–10°, continuously adjustable			
Sidelobe suppression for first sidelobe above main beam	≥ 15 dB	≥ 15 dB	≥ 15 dB	≥ 15 dB
Impedance	50 Ω			
VSWR	< 1.5			
Isolation, between ports	> 30 dB			
Intermodulation IM3	< –150 dBc (2 x 43 dBm carrier)			
Max. power per input	300 W (at 50 °C ambient temperature)			

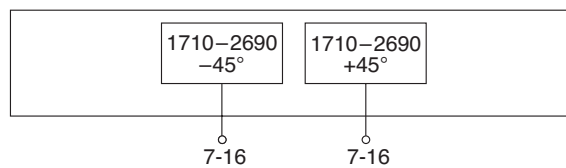
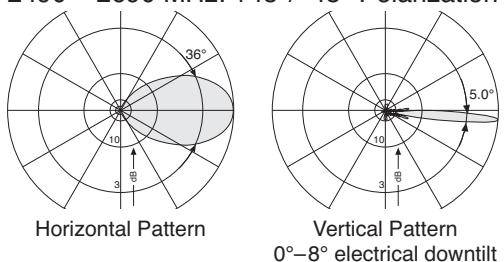
1710 – 1990 MHz: +45°/–45° Polarization



1920 – 2200 MHz: +45°/–45° Polarization



2490 – 2690 MHz: +45°/–45° Polarization



Mechanical specifications	
Input	2 x 7-16 female
Connector position	Bottom
Adjustment mechanism	1 x, Position bottom continuously adjustable
Wind load	Frontal: N (at 150 km/h) Lateral: N (at 150 km/h) Rearside: N (at 150 km/h)
Max. wind velocity	200 km/h
Height/width/depth	Approx. 1200 / 275 / 61 mm
Category of mounting hardware	M (Medium)
Weight	Approx. 12 kg / 14 kg (clamps incl.)
Packing size	Approx. 1685 x 221 x 107 mm
Scope of supply	Panel and 2 units of clamps for 42 – 115 mm diameter



936.A2716/b Subject to alteration.

Multi-band Panel Dual Polarization Half-power Beam Width Fixed Electrical Downtilt

1710–2690

X

65°

2°

KATHREIN

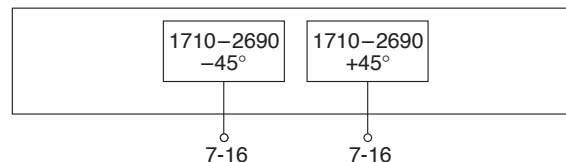
Antennen · Electronic

Preliminary Issue

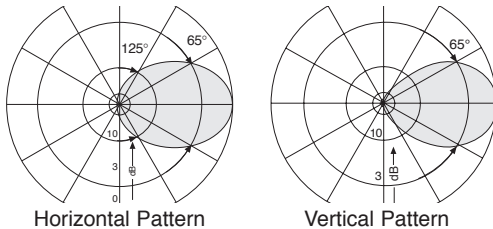
Product Proposal

XPol Panel 1710–2690 65° 9.5dBi 2°T

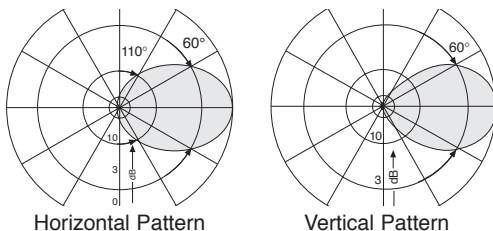
Type No.	80010711	
Frequency range	1710 – 2200 MHz 2200 – 2690 MHz	
Polarization	+45°, –45°	+45°, –45°
Gain	Approx. 2 x 9 dBi	Approx. 2 x 10 dBi
Horizontal Pattern:		
Half-power beam width	Approx. 65°	Approx. 60°
Front-to-back ratio, copolar	> 25 dB	> 25 dB
Vertical Pattern:		
Half-power beam width	Approx. 65°	Approx. 60°
Electrical tilt	2°, fixed	
Impedance	50 Ω	
VSWR	< 1.5	
Isolation, between ports	> 30 dB	
Intermodulation IM3	< –150 dBc (2 x 43 dBm carrier)	
Max. power per input	150 W (at 50 °C ambient temperature)	



1710 – 1990 MHz: +45°/–45° Polarization



2490 – 2690 MHz: +45°/–45° Polarization



Mechanical specifications

Input	2 x 7-16 female
Connector position*	Bottom or top
Wind load	Frontal: 50 N (at 150 km/h) Lateral: 13 N (at 150 km/h) Rearside: 55 N (at 150 km/h)
Max. wind velocity	200 km/h
Height/width/depth	155 / 155 / 69 mm
Category of mounting hardware	L (Light)
Weight	1.5 kg (tension bands incl.)
Packing size	257 x 172 x 92 mm
Scope of supply	Panel and 1 unit of tension bands for 45 – 125 mm diameter

* Inverted mounting:
Connector position top: Change drain hole screw.

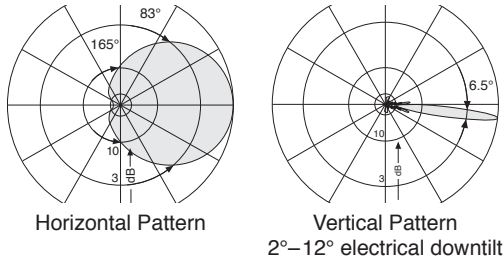
936.A2860 Subject to alteration.

Multi-band Panel 1710–2690
Dual Polarization X
Half-power Beam Width 85°
Adjust. Electrical Downtilt 2°–12°
 set by hand or by optional RCU (Remote Control Unit)

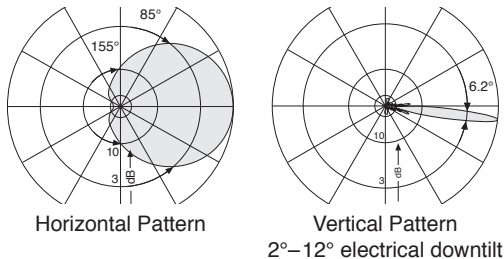
XPol Panel 1710–2690 85° 17dBi 2°–12°T

Type No.	80010679			
	1710–2690			
Frequency range	1710 – 1990 MHz	1920 – 2200 MHz	2200 – 2490 MHz	2490 – 2690 MHz
Polarization	+45°, –45°	+45°, –45°	+45°, –45°	+45°, –45°
Gain at 0° tilt	2 x 16.3 dBi	2 x 16.6 dBi	2 x 17.0 dBi	2 x 17.0 dBi
Horizontal Pattern:				
Half-power beam width	83°	85°	85°	85°
Front-to-back ratio (180°±30°)	> 23 dB	> 24 dB	> 24 dB	> 25 dB
Cross polar ratio Sector 0° ±60°	Typically: 20 dB > 10 dB	Typically: 20 dB > 10 dB	Typically: 20 dB > 10 dB	Typically: 20 dB > 10 dB
Vertical Pattern:				
Half-power beam width	6.5°	6.2°	5.2°	4.7°
Electrical tilt	2°–12°, continuously adjustable			
Sidelobe suppression for first sidelobe above main beam	0° ... 5° ... 10° T ≥ 17 ... 16 ... 16 dB	0° ... 5° ... 10° T ≥ 17 ... 17 ... 17 dB	0° ... 5° ... 10° T ≥ 17 ... 17 ... 17 dB	0° ... 5° ... 10° T ≥ 17 ... 17 ... 16 dB
Impedance	50 Ω			
VSWR	< 1.5			
Isolation, between ports	> 30 dB			
Intermodulation IM3	< –150 dBc (2 x 43 dBm carrier)			
Max. power per input	300 W (at 50 °C ambient temperature)			

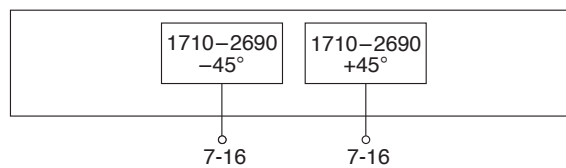
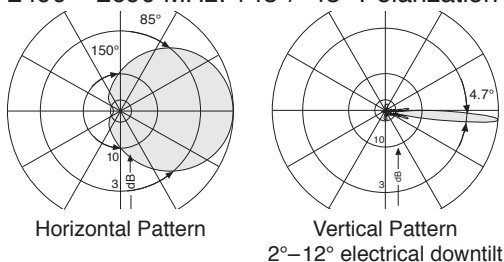
1710 – 1990 MHz: +45°/–45° Polarization



1920 – 2200 MHz: +45°/–45° Polarization



2490 – 2690 MHz: +45°/–45° Polarization



Mechanical specifications	
Input	2 x 7-16 female
Connector position	Bottom
Adjustment mechanism	1 x, Position bottom continuously adjustable
Wind load	Frontal: 370 N (at 150 km/h) Lateral: 135 N (at 150 km/h) Rearside: 420 N (at 150 km/h)
Max. wind velocity	200 km/h
Height/width/depth	1390 / 155 / 69 mm
Category of mounting hardware	M (Medium)
Weight	6 kg / 8 kg (clamps incl.)
Packing size	1685 x 172 x 92 mm
Scope of supply	Panel and 2 units of clamps for 42 – 115 mm diameter



936.A2733/b Subject to alteration.

Multi-band Panel
Dual Polarization
Half-power Beam Width
Adjust. Electrical Downtilt
 set by hand or by optional RCU (Remote Control Unit)

1710–2690

X

85°

0°–6°

KATHREIN

Antennen · Electronic

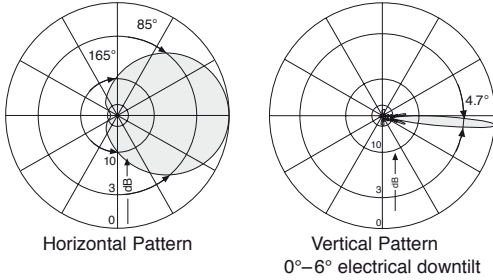
Preliminary Issue

Product Proposal

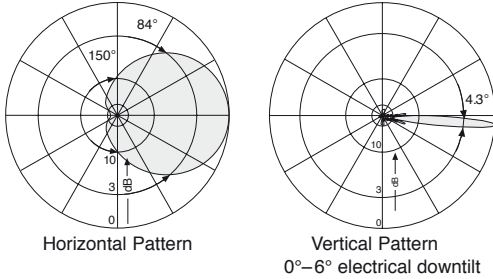
XPol Panel 1710–2690 85° 19dBi 0°–6°T

Type No.	800 10680			
Frequency range	1710–2690			
	1710 – 1990 MHz	1920 – 2200 MHz	2200 – 2490 MHz	2490 – 2690 MHz
Polarization	+45°, –45°	+45°, –45°	+45°, –45°	+45°, –45°
Gain at 0° tilt	2 x 18 dBi	2 x 18.5 dBi	2 x 18.5 dBi	2 x 19 dBi
Horizontal Pattern:				
Half-power beam width	85°	84°	80°	77°
Front-to-back ratio (180° ±30°)	> 23 dB	> 24 dB	> 24 dB	> 25 dB
Cross polar ratio Sector 0° ±60°	Typically: 25 dB > 10 dB	Typically: 25 dB > 10 dB	Typically: 25 dB > 10 dB	Typically: 25 dB > 10 dB
Vertical Pattern:				
Half-power beam width	4.7°	4.3°	4°	3.5°
Electrical tilt	0°–6°, continuously adjustable			
Sidelobe suppression – for first sidelobe above main beam	0° ... 3° ... 6° T ≥ 15 ... 16 ... 16 dB	0° ... 3° ... 6° T ≥ 15 ... 16 ... 16 dB	0° ... 3° ... 6° T ≥ 15 ... 16 ... 16 dB	0° ... 3° ... 6° T ≥ 15 ... 16 ... 16 dB
Impedance	50 Ω			
VSWR	< 1.5			
Isolation, between ports	> 30 dB			
Intermodulation IM3	< –150 dBc (2 x 43 dBm carrier)			
Max. power per input	300 W (at 50 °C ambient temperature)			

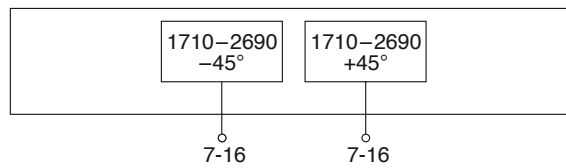
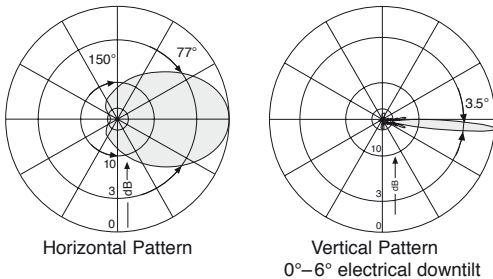
1710 – 1990 MHz: +45°/–45° Polarization



1920 – 2200 MHz: +45°/–45° Polarization



2490 – 2690 MHz: +45°/–45° Polarization



Mechanical specifications	
Input	2x 7-16 female
Connector position	Bottom
Adjustment mechanism	1 x, Position bottom continuously adjustable
Wind load (approx.)	Frontal: 520 N (at 150 km/h) Lateral: 140 N (at 150 km/h) Rearside: 520 N (at 150 km/h)
Max. wind velocity	200 km/h
Height/width/depth	Approx. 1998 / 155 / 70 mm
Weight	Approx. 11 kg (clamps incl.)
Packing size	Approx. 2235 x 172 x 92 mm
Scope of supply	Panel and 2 units of clamps for 50 – 115 mm diameter



936.A2781 Subject to alteration.

2-Multi-band Panel

Dual Polarization

Half-power Beam Width

Adjust. Electrical Downtilt

set by hand or by optional RCU (Remote Control Unit)

1710–2690

1710–2690

X

X

85°

85°

0°–10°

0°–10°

KATHREIN

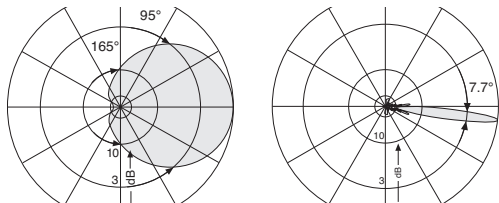
Antennen · Electronic

Preliminary Issue

XXPol Panel 1710–2690/1710–2690 85°/85° 17/17dBi 0°–10°/0°–10°T

Type No.	80010689			
	1710–2690			
Frequency range	1710 – 1990 MHz	1920 – 2200 MHz	2200 – 2490 MHz	2490 – 2690 MHz
Polarization	+45°, –45°; +45°, –45°	+45°, –45°; +45°, –45°	+45°, –45°; +45°, –45°	+45°, –45°; +45°, –45°
Gain at 0° tilt	2 x 15.8 dBi	2 x 16.3 dBi	2 x 17.0 dBi	2 x 17.0 dBi
Horizontal Pattern:				
Half-power beam width	95°	90°	85°	80°
Front-to-back ratio (180°±30°)	> 23 dB	> 24 dB	> 24 dB	> 25 dB
Cross polar ratio Sector 0° ±60°	Typically: 20 dB > 10 dB	Typically: 20 dB > 10 dB	Typically: 20 dB > 10 dB	Typically: 20 dB > 10 dB
Vertical Pattern:				
Half-power beam width	7.7°	6.9°	6.1°	5.8°
Electrical tilt	0°–10°, continuously adjustable			
Sidelobe suppression for first sidelobe above main beam	0° ... 5° ... 10° T ≥ 16 ... 16 ... 16 dB	0° ... 5° ... 10° T ≥ 16 ... 16 ... 16 dB	0° ... 5° ... 10° T ≥ 16 ... 16 ... 16 dB	0° ... 5° ... 10° T ≥ 16 ... 16 ... 16 dB
Impedance	50 Ω			
VSWR	< 1.5			
Isolation, between ports	> 30 dB			
Intermodulation IM3	< –150 dBc (2 x 43 dBm carrier)			
Max. power per input	300 W (at 50 °C ambient temperature)			

1710 – 1990 MHz: +45°/–45° Polarization

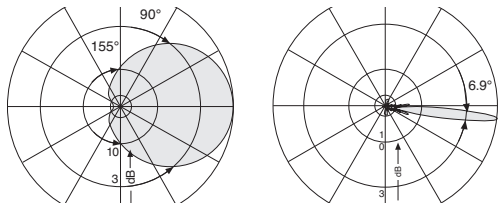


Horizontal Pattern

Vertical Pattern

0°–10° electrical downtilt

1920 – 2200 MHz: +45°/–45° Polarization

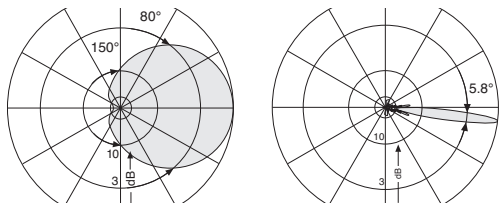


Horizontal Pattern

Vertical Pattern

0°–10° electrical downtilt

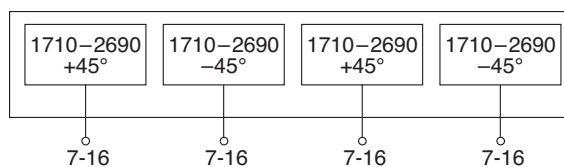
2490 – 2690 MHz: +45°/–45° Polarization



Horizontal Pattern

Vertical Pattern

0°–10° electrical downtilt



Mechanical specifications

Input	4 x 7-16 female
Connector position	Bottom
Adjustment mechanism	2x, Position bottom continuously adjustable
Wind load	Frontal: 720 N (at 150 km/h) Lateral: 165 N (at 150 km/h) Rearside: 740 N (at 150 km/h)
Max. wind velocity	200 km/h
Height/width/depth	Approx. 1415 / 323 / 71 mm
Category of mounting hardware	M (Medium)
Weight	Approx. 13 kg / 15 kg (clamps incl.)
Packing size	Approx. 1685 x 337 x 112 mm
Scope of supply	Panel and 2 units of clamps for 42 – 115 mm diameter



936.A2782/a Subject to alteration.

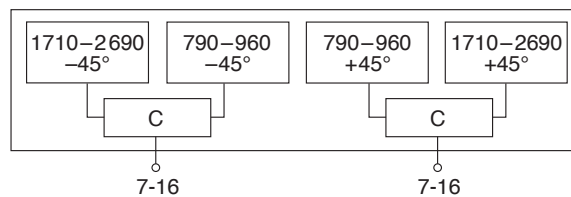
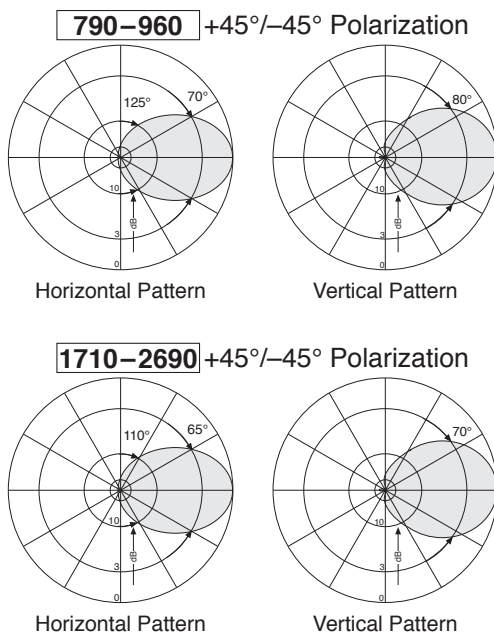
**Dual-band Panel
Dual Polarization
Half-power Beam Width
Fixed Electr. Downtilt**

790–960	1710–2690
X	X
65°	65°
0°	0°
C	

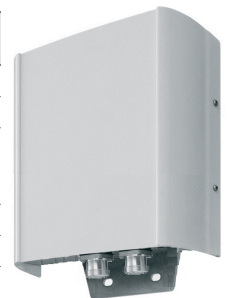
KATHREIN
Antennen · Electronic
Preliminary Issue

XXPol Panel 790–960/1710–2690 C 65°/65° 8/9dBi

Type No.	80010753							
	790–960			1710–2690				
Frequency range	790 – 862 MHz	824 – 894 MHz	880 – 960 MHz	1710 – 1880 MHz	1850 – 1990 MHz	1920 – 2170 MHz	2490 – 2690 MHz	
Polarization	+45°, –45°			+45°, –45°	+45°, –45°	+45°, –45°	+45°, –45°	
Average gain (dBi)	2 x 8.0 dBi			2 x 7.8 dBi	2 x 8.0 dBi	2 x 9.0 dBi	2 x 9.0 dBi	
Horizontal Pattern:								
Half-power beam width	70°			70°	65°	58°	55°	
Front-to-back ratio [dB]	Copolar: > 25	Copolar: > 25	Copolar: > 25	Copolar: > 25	Copolar: > 25	Copolar: > 25	Copolar: > 25	
Cross polar ratio Maindirection Sector	0° ±60°	Typically: 25 dB	Typically: 25 dB	Typically: 20 dB	Typically: 14 dB	Typically: 14 dB	Typically: 14 dB	Typically: 15 dB
Vertical Pattern:								
Half-power beam width	80°			80°	70°	60°	55°	
Impedance	50 Ω							
VSWR	< 1.5							
Isolation: Intrasystem	> 25 dB							
Intermodulation IM3	< –150 dBc (2 x 43 dBm carrier)							
Max. power	250 W (at 50 °C ambient temperature)				100 W (at 50 °C ambient temperature)			
Max. power per combined input	350 W (at 50 °C ambient temperature)							



Mechanical specifications	
Input	2 x 7-16 female (long neck)
Connector position	Bottom or top*
Wind load	Frontal: 95 N (at 150 km/h) Lateral: 35 N (at 150 km/h) Rearside: 130 N (at 150 km/h)
Max. wind velocity	200 km/h
Height/width/depth	340 / 295 / 105 mm
Category of mounting hardware	M (Medium)
Weight	4.5 kg / 6.5 kg (clamps incl.)
Packing size	377 x 287 x 165 mm
Scope of supply	Panel and 2 units of clamps for 42 – 115 mm diameter



* Inverted mounting:
Connector position top: Change drain hole screw.

936.A2866/b Subject to alteration.

Dual-band Panel

790–960

1710–2690

Dual Polarization

X

X

Half-power Beam Width

85°

85°

Adjust. Electr. Downtilt

0°–12°

0°–10°

set by hand or by optional RCU (Remote Control Unit)

KATHREIN

Antennen · Electronic

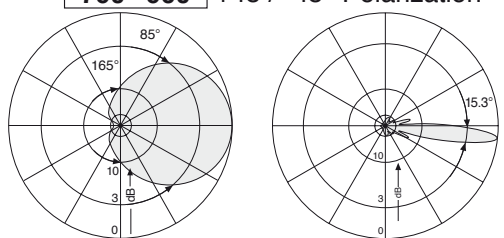
Preliminary Issue

Product Candidate

XXPol Panel 790–960/1710–2690 85°/85° 13.5/17dBi 0°–12°/0°–10°T

Type No.	800 10693							
Frequency range	790–960			1710–2690				
	790 – 866 MHz	824 – 896 MHz	880 – 960 MHz	1710 – 1880 MHz	1850 – 1990 MHz	1920 – 2200 MHz	2490 – 2690 MHz	
Polarization	+45°, –45°	+45°, –45°	+45°, –45°	+45°, –45°	+45°, –45°	+45°, –45°	+45°, –45°	+45°, –45°
Tilt	13.2 ... 13.1 ... 13.0 0° ... 6° ... 12°	13.3 ... 13.2 ... 13.1 0° ... 6° ... 12°	13.6 ... 13.5 ... 13.4 0° ... 6° ... 12°	16.2 ... 16.0 ... 15.8 0° ... 5° ... 10°	16.4 ... 16.2 ... 16.0 0° ... 5° ... 10°	17.0 ... 16.8 ... 16.5 0° ... 5° ... 10°	17.5 ... 17.3 ... 17.0 0° ... 5° ... 10°	
Horizontal Pattern:								
Half-power beam width	85°	85°	83°	86°	85°	83°	77°	
Front-to-back ratio, copolar (180°±30°)	> 25 dB	> 25 dB	> 25 dB	> 23 dB	> 23 dB	> 24 dB	> 25 dB	
Cross polar ratio								
Maindirection 0°	Typ. 25 dB	Typ. 25 dB	Typ. 25 dB	Typ. 16 dB	18 dB	18 dB	20 dB	
Sector ±60°	> 10 dB	> 10 dB	> 10 dB	> 10 dB	> 10 dB	> 10 dB	> 10 dB	
Vertical Pattern:								
Half-power beam width	15.7°	15.3°	15°	6.7°	6.3°	5.9°	5.2°	
Electrical tilt	0°–12°, continuously adjustable			0°–10°, continuously adjustable				
Sidelobe suppression for first sidelobe above main beam	0° ... 6° ... 12° T 16 ... 16 ... 16 dB	0° ... 6° ... 12° T 16 ... 16 ... 16 dB	0° ... 6° ... 12° T 18 ... 17 ... 16 dB	0° ... 5° ... 10° T 16 ... 16 ... 15 dB	0° ... 5° ... 10° T 16 ... 16 ... 15 dB	0° ... 5° ... 10° T 16 ... 16 ... 15 dB	0° ... 5° ... 10° T 16 ... 16 ... 15 dB	
Impedance	50 Ω							
VSWR	< 1.5							
Isolation: Intrasystem	> 30 dB			> 28 dB				
Isolation: Intersystem	> 40 dB (790–960 // 1710–2690 MHz)							
Intermodulation IM3	< –150 dBc (2 x 43 dBm carrier)							
Max. power per input	500 W (at 50 °C ambient temperature)			250 W (at 50 °C ambient temperature)				
Total power	1000 W (at 50 °C ambient temperature)			500 W (at 50 °C ambient temperature)				

790–960 +45°/–45° Polarization

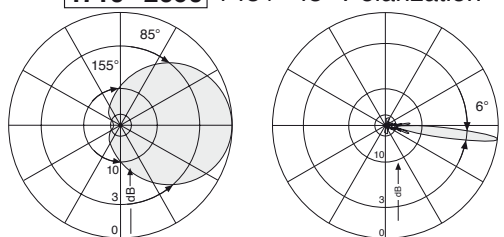


Horizontal Pattern

Vertical Pattern

0°–12° electrical downtilt

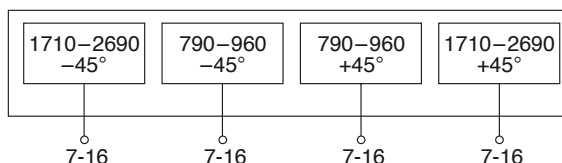
1710–2690 +45°/–45° Polarization



Horizontal Pattern

Vertical Pattern

0°–10° electrical downtilt



Mechanical specifications

Input	4 x 7-16 female
Connector position	Bottom
Adjustment mechanism	2 x, Position bottom continuously adjustable
Wind load	Frontal: 650 N (at 150 km/h) Lateral: 240 N (at 150 km/h) Rearside: 700 N (at 150 km/h)
Max. wind velocity	200 km/h
Height/width/depth	1334 / 299 / 152 mm
Weight	18.5 kg (clamps incl.)
Packing size	1646 x 350 x 192 mm
Scope of supply	Panel and 2 units of clamps for 50 – 115 mm diameter



936.A2751 Subject to alteration.

Dual-band Panel

790–960

1710–2690

Dual Polarization

X

X

Half-power Beam Width

85°

85°

Adjust. Electr. Downtilt

0°–10°

0°–6°

set by hand or by optional RCU (Remote Control Unit)

KATHREIN

Antennen · Electronic

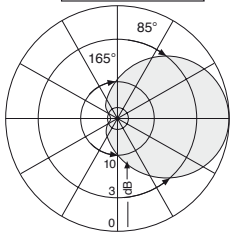
Preliminary Issue

Product Candidate

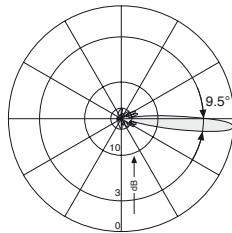
XXPol Panel 790–960/1710–2690 85°/85° 15.5/18.5dBi 0°–10°/0°–6°T

Type No.	800 10694							
Frequency range	790–960			1710–2690				
	790 – 866 MHz	824 – 896 MHz	880 – 960 MHz	1710 – 1880 MHz	1850 – 1990 MHz	1920 – 2200 MHz	2490 – 2690 MHz	
Polarization	+45°, –45°	+45°, –45°	+45°, –45°	+45°, –45°	+45°, –45°	+45°, –45°	+45°, –45°	
Average gain (dBi)	14.6 ... 14.6 ... 14.5	14.9 ... 15.0 ... 14.8	15.3 ... 15.4 ... 15.5	17.3 ... 17.5 ... 17.4	17.5 ... 17.7 ... 17.4	17.9 ... 18.2 ... 17.7	18.1 ... 18.5 ... 18.3	
Tilt	0° ... 5° ... 10°	0° ... 5° ... 10°	0° ... 5° ... 10°	0° ... 3° ... 6°	0° ... 3° ... 6°	0° ... 3° ... 6°	0° ... 3° ... 6°	
Horizontal Pattern:								
Half-power beam width	85°	85°	83°	86°	85°	83°	77°	
Front-to-back ratio, copolar (180°±30°)	> 25 dB	> 25 dB	> 25 dB	> 25 dB	> 25 dB	> 25 dB	> 25 dB	
Cross polar ratio	Typically:	Typically:	Typically:	Typically:	Typically:	Typically:	Typically:	
Maindirection 0°	25 dB	25 dB	25 dB	16 dB	20 dB	18 dB	22 dB	
Sector ±60°	> 10 dB	> 10 dB	> 10 dB	> 10 dB	> 10 dB	> 10 dB	> 10 dB	
Vertical Pattern:								
Half-power beam width	9.7°	9.5°	9.0°	4.6°	4.4°	4.2°	3.5°	
Electrical tilt	0°–10°, continuously adjustable			0°–6°, continuously adjustable				
Min. sidelobe suppression for first sidelobe above main beam	0° ... 5° ... 10° T 18 ... 16 ... 14 dB	0° ... 5° ... 10° T 18 ... 16 ... 15 dB	0° ... 5° ... 10° T 18 ... 17 ... 16 dB	0° ... 3° ... 6° T 16 ... 16 ... 15 dB	0° ... 3° ... 6° T 16 ... 16 ... 16 dB	0° ... 3° ... 6° T 16 ... 16 ... 16 dB	0° ... 3° ... 6° T 16 ... 16 ... 16 dB	
Impedance	50 Ω							
VSWR	< 1.5							
Isolation: Intrasystem	> 30 dB			> 30 dB				
Isolation: Intersystem	> 40 dB (790–960 // 1710–2690 MHz)							
Intermodulation IM3	< –150 dBc (2 x 43 dBm carrier)							
Max. power per input	500 W (at 50 °C ambient temperature)			250 W (at 50 °C ambient temperature)				
Total power	1000 W (at 50 °C ambient temperature)			500 W (at 50 °C ambient temperature)				

790–960 +45°/–45° Polarization

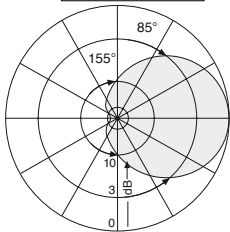


Horizontal Pattern

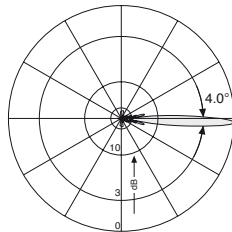


Vertical Pattern
0°–10° electrical downtilt

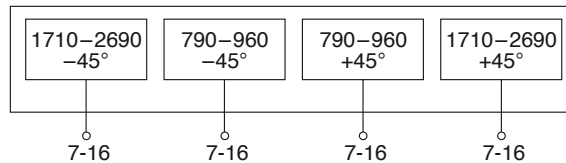
1710–2690 +45°/–45° Polarization



Horizontal Pattern

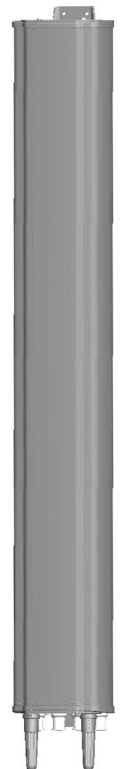


Vertical Pattern
0°–6° electrical downtilt



Mechanical specifications

Input	4 x 7-16 female
Connector position	Bottom
Adjustment mechanism	2 x, Position bottom continuously adjustable
Wind load	Frontal: 1020 N (at 150 km/h) Lateral: 410 N (at 150 km/h) Rearside: 1080 N (at 150 km/h)
Max. wind velocity	200 km/h
Height/width/depth	1997 / 299 / 152 mm
Weight	27.5 kg (clamps incl.)
Packing size	2318 x 350 x 192 mm
Scope of supply	Panel and 2 units of clamps for 50 – 115 mm diameter



936.A2752 Subject to alteration.

Dual-band Panel

Dual Polarization

Half-power Beam Width

Adjust. Electr. Downtilt

set by hand or by optional RCU (Remote Control Unit)

790–960

1710–2690

X

X

85°

85°

0°–10°

0°–6°

KATHREIN

Antennen · Electronic

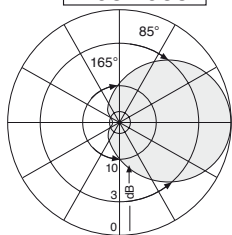
Preliminary Issue

Product Candidate

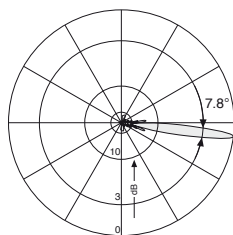
XXPol Panel 790–960/1710–2690 85°/85° 16.5/18.5dBi 0°–10°/0°–6°T

Type No.	800 10695							
Frequency range	790–960			1710–2690				
	790 – 866 MHz	824 – 896 MHz	880 – 960 MHz	1710 – 1880 MHz	1850 – 1990 MHz	1920 – 2200 MHz	2490 – 2690 MHz	
Polarization	+45°, –45°	+45°, –45°	+45°, –45°	+45°, –45°	+45°, –45°	+45°, –45°	+45°, –45°	
Average gain (dBi)	15.6 ... 15.6 ... 15.5	15.9 ... 16.0 ... 15.8	16.3 ... 16.4 ... 16.2	17.3 ... 17.5 ... 17.4	17.5 ... 17.7 ... 17.4	17.9 ... 18.2 ... 17.7	18.1 ... 18.5 ... 18.3	
Tilt	0° ... 5° ... 10°	0° ... 5° ... 10°	0° ... 5° ... 10°	0° ... 3° ... 6°	0° ... 3° ... 6°	0° ... 3° ... 6°	0° ... 3° ... 6°	
Horizontal Pattern:								
Half-power beam width	85°	85°	83°	86°	85°	83°	77°	
Front-to-back ratio, copolar (180°±30°)	> 25 dB	> 25 dB	> 25 dB	> 25 dB	> 25 dB	> 25 dB	> 25 dB	
Cross polar ratio	Typically:	Typically:	Typically:	Typically:	Typically:	Typically:	Typically:	
Maindirection 0°	25 dB	25 dB	25 dB	16 dB	20 dB	18 dB	22 dB	
Sector ±60°	> 10 dB	> 10 dB	> 10 dB	> 10 dB	> 10 dB	> 10 dB	> 10 dB	
Vertical Pattern:								
Half-power beam width	8.1°	7.8°	7.5°	4.6°	4.4°	4.2°	3.5°	
Electrical tilt	0°–10°, continuously adjustable			0°–6°, continuously adjustable				
Min. sidelobe suppression for first sidelobe above main beam	0° ... 5° ... 10° T 18 ... 16 ... 14 dB	0° ... 5° ... 10° T 18 ... 16 ... 15 dB	0° ... 5° ... 10° T 18 ... 17 ... 16 dB	0° ... 3° ... 6° T 16 ... 16 ... 15 dB	0° ... 3° ... 6° T 16 ... 16 ... 16 dB	0° ... 3° ... 6° T 16 ... 16 ... 16 dB	0° ... 3° ... 6° T 16 ... 16 ... 16 dB	
Impedance	50 Ω							
VSWR	< 1.5							
Isolation: Intrasystem	> 30 dB			> 30 dB				
Isolation: Intersystem	> 40 dB (790–960 // 1710–2690 MHz)							
Intermodulation IM3	< –150 dBc (2 x 43 dBm carrier)							
Max. power per input	500 W (at 50 °C ambient temperature)			250 W (at 50 °C ambient temperature)				
Total power	1000 W (at 50 °C ambient temperature)			500 W (at 50 °C ambient temperature)				

790–960 +45°/–45° Polarization

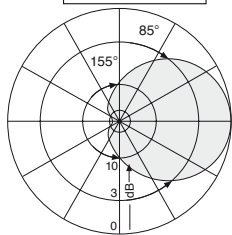


Horizontal Pattern

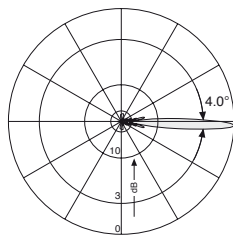


Vertical Pattern
0°–10° electrical downtilt

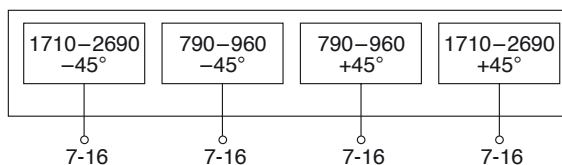
1710–2690 +45°/–45° Polarization



Horizontal Pattern



Vertical Pattern
0°–6° electrical downtilt



Mechanical specifications

Input	4 x 7-16 female
Connector position	Bottom
Adjustment mechanism	2 x, Position bottom continuously adjustable
Wind load	Frontal: 1270 N (at 150 km/h) Lateral: 510 N (at 150 km/h) Rearside: 1340 N (at 150 km/h)
Max. wind velocity	200 km/h
Height/width/depth	2483 / 299 / 152 mm
Weight	34 kg (clamps incl.)
Packing size	2806 x 350 x 192 mm
Scope of supply	Panel and 2 units of clamps for 50 – 115 mm diameter



936.A2753 Subject to alteration.

Triple-band Panel

Dual Polarization

Half-power Beam Width

Adjust. Electr. Downtilt

790-960	1710-2690	1710-2690
X	X	X
65°	65°	65°
0°-12°	0°-12°	0°-12°

KATHREIN

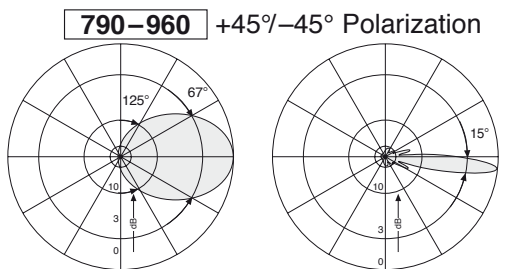
Antennen · Electronic

Preliminary Issue

set by hand or by optional RCU (Remote Control Unit)

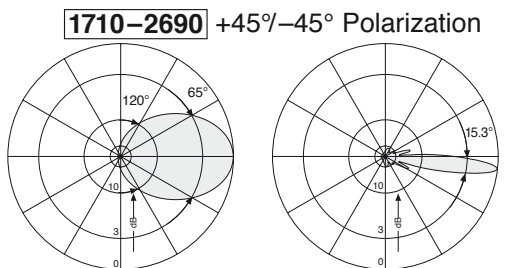
XXXPol Panel 790-960/1710-2690/1710-2690 65°/65°/65° 14.5/15/15dBi 0°-12°/0°-12°/0°-12°T

Type No.	80010690							
Frequency range	790-960		1710-2690		1710-2690			
	790 - 866 MHz	824 - 896 MHz	880 - 960 MHz	1710 - 1880 MHz	1850 - 1990 MHz	1920 - 2200 MHz	2490 - 2690 MHz	
Polarization	+45°, -45°	+45°, -45°	+45°, -45°	+45°, -45°	+45°, -45°	+45°, -45°	+45°, -45°	
Average gain (dBi)	14.2 ... 14.1 ... 14.0	14.3 ... 14.2 ... 14.1	14.6 ... 14.5 ... 14.4	14.2 ... 14.0 ... 13.8	14.4 ... 14.2 ... 14.0	15.0 ... 14.8 ... 14.5	15.0 ... 14.8 ... 14.5	
Tilt	0° ... 6° ... 12°	0° ... 6° ... 12°	0° ... 6° ... 12°	0° ... 6° ... 12°	0° ... 6° ... 12°	0° ... 6° ... 12°	0° ... 6° ... 12°	
Horizontal Pattern:								
Half-power beam width	69°	68°	67°	67°	65°	63°	62°	
Front-to-back ratio, copolar (180°±30°)	> 25 dB	> 25 dB	> 25 dB	> 25 dB	> 25 dB	> 25 dB	> 25 dB	
Cross polar ratio								
Maindirection	0°	Typ. 25 dB	Typ. 25 dB	Typ. 25 dB	Typ. 16 dB	18 dB	18 dB	20 dB
Sector	±60°	> 10 dB	> 10 dB	> 10 dB	> 10 dB	> 10 dB	> 10 dB	> 10 dB
Vertical Pattern:								
Half-power beam width	15.7°	15.3°	15°	15.7°	15.3°	15°	14°	
Electrical tilt	0°-12°, continuously adjustable				0°-12°, continuously adjustable			
Min. sidelobe suppression for first sidelobe above main beam	0° ... 6° ... 12° T 16 ... 16 ... 16 dB	0° ... 6° ... 12° T 16 ... 16 ... 16 dB	0° ... 6° ... 12° T 18 ... 17 ... 16 dB	0° ... 6° ... 12° T 16 ... 16 ... 15 dB	0° ... 6° ... 12° T 16 ... 16 ... 16 dB	0° ... 6° ... 12° T 16 ... 16 ... 16 dB	0° ... 6° ... 12° T 16 ... 16 ... 16 dB	
Impedance	50 Ω							
VSWR	< 1.5							
Isolation: Intrasystem	> 30 dB				> 28 dB			
Isolation: Intersystem	> 30 dB (790-960 // 1710-2690 MHz) > 30 dB (1710-2690 // 1710-2690 MHz)							
Intermodulation IM3	< -150 dBc (2 x 43 dBm carrier)							
Max. power per input	500 W (at 50 °C ambient temperature)				200 W (at 50 °C ambient temperature)			
Total power	1000 W (at 50 °C ambient temperature)				400 W (at 50 °C ambient temperature)			



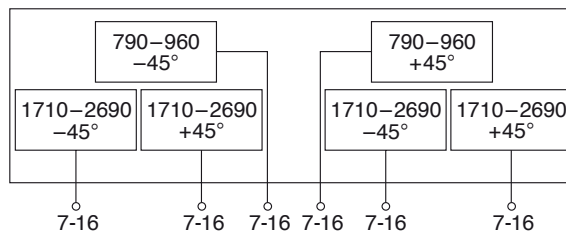
Horizontal Pattern

Vertical Pattern
0°-12° electrical downtilt



Horizontal Pattern

Vertical Pattern
0°-12° electrical downtilt



Mechanical specifications

Input	6 x 7-16 female (long neck)
Connector position	Bottom
Adjustment mechanism	3x, Position bottom continuously adjustable
Wind load	Frontal: 650 N (at 150 km/h) Lateral: 240 N (at 150 km/h) Rearside: 700 N (at 150 km/h)
Max. wind velocity	200 km/h
Height/width/depth	1334 / 299 / 152 mm
Category of mounting hardware	M (Medium)
Weight	21 kg / 23 kg (clamps incl.)
Packing size	1633 x 330 x 192 mm
Scope of supply	Panel and 2 units of clamps for 50 - 115 mm diameter



936.A2615/c Subject to alteration.

Quad-band Panel

Dual Polarization

Half-power Beam Width

Adjust. Electr. Downtilt

set by hand or by optional RCU (Remote Control Unit)

790-960 1710-1880 1920-2170 2490-2690

X X X X

65° 65° 65° 65°

0°-12° 0°-10° 0°-10° 0°-10°

KATHREIN

Antennen · Electronic

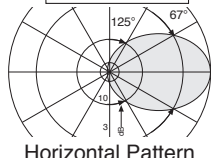
Preliminary Issue

XXXXPol Panel 790-960/1710-1880/1920-2170/2490-2690 65°/65°/65°/65° 14.5/16.5/17/17dB_i 0°-12°/0°-10°/0°-10°/0°-10°T

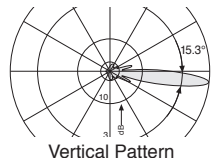
Type No.	80010684					
Frequency range	790 - 862 MHz	824 - 896 MHz	880 - 960 MHz	1710 - 1880 MHz	1920 - 2170 MHz	2490 - 2690 MHz
Polarization	+45°, -45°	+45°, -45°	+45°, -45°	+45°, -45°	+45°, -45°	+45°, -45°
Average gain (dBi)	16.8 ... 16.7 ... 16.5	17.0 ... 17.0 ... 16.8	17.1 ... 17.2 ... 17.0	17.8 ... 17.8 ... 17.5	17.8 ... 17.8 ... 17.4	17.8 ... 17.8 ... 17.6
Tilt	0° ... 6° ... 12°	0° ... 6° ... 12°	0° ... 6° ... 12°	0° ... 5° ... 10°	0° ... 5° ... 10°	0° ... 5° ... 10°
Horizontal Pattern:						
Half-power beam width	69°	68°	67°	67°	63°	62°
Front-to-back ratio, copolar (180°±30°)	> 25 dB	> 25 dB	> 25 dB	> 25 dB	> 25 dB	> 25 dB
Cross polar ratio						
Maindirection	0°	20 dB	20 dB	20 dB	18 dB	20 dB
Sector	±60°	> 10 dB	> 10 dB	> 10 dB	> 10 dB	> 10 dB
Vertical Pattern:						
Half-power beam width	15.7°	15.3°	15°	6.7°	5.9°	5.2°
Electrical tilt, continuously adjust.	0°-12°					
Sidelobe suppression for first sidelobe above main beam	0° ... 6° ... 12° T 16 ... 16 ... 16 dB	0° ... 6° ... 12° T 16 ... 16 ... 16 dB	0° ... 6° ... 12° T 18 ... 17 ... 16 dB	0° ... 5° ... 10° T 16 ... 16 ... 15 dB	0° ... 5° ... 10° T 16 ... 16 ... 15 dB	0° ... 5° ... 10° T 16 ... 16 ... 15 dB
Impedance	50 Ω			50 Ω	50 Ω	50 Ω
VSWR	< 1.5			< 1.5	< 1.5	< 1.5
Isolation: Intrasystem	> 30 dB			> 28 dB	> 28 dB	> 28 dB
Isolation: Intersystem	> 30 dB (1710-1880 // 1920-2170 MHz) > 35 dB (790-960 // 1710-2170 MHz) > 38 dB (2490-2690 // 790-960 ... 1710-2170 MHz)					
Intermodulation IM3	< -150 dBc (2 x 43 dBm carrier)					
Max. power per input	500 W*			200 W*	200 W*	200 W*
Total power	1000 W*			400 W*		

* (at 50 °C ambient temperature)

790-960 +45°/-45° Polarization



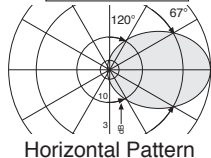
Horizontal Pattern



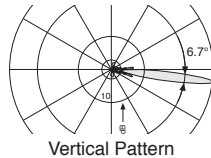
Vertical Pattern

0°-12° electrical downtilt

1710-1880 +45°/-45° Polarization



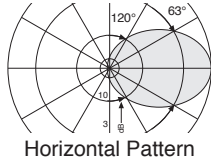
Horizontal Pattern



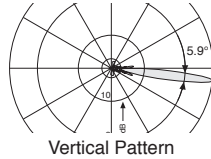
Vertical Pattern

0°-10° electrical downtilt

1920-2170 +45°/-45° Polarization



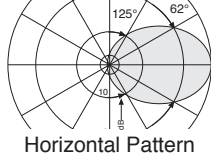
Horizontal Pattern



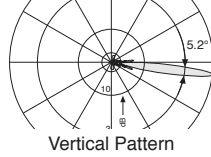
Vertical Pattern

0°-10° electrical downtilt

2490-2690 +45°/-45° Polarization

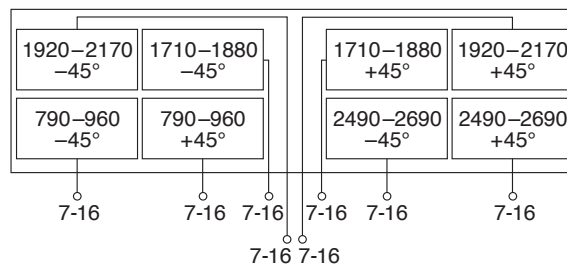


Horizontal Pattern



Vertical Pattern

0°-10° electrical downtilt



Mechanical specifications

Input	8 x 7-16 female (long neck)
Connector position	Bottom
Adjustment mechanism	4x, Position bottom continuously adjustable
Wind load	Frontal: 650 N (at 150 km/h) Lateral: 240 N (at 150 km/h) Rearside: 700 N (at 150 km/h)
Max. wind velocity	200 km/h
Height/width/depth	1334 / 300 / 152 mm
Category of mounting hardware	M (Medium)
Weight	20.5 kg / 22.5 kg (clamps incl.)
Packing size	1633 x 322 x 190 mm
Scope of supply	Panel and 2 units of clamps for 42 - 115 mm diameter



936.A2614/c Subject to alteration.

Quad-band Panel

Dual Polarization

Half-power Beam Width

Adjust. Electr. Downtilt

set by hand or by optional RCU (Remote Control Unit)

790-862 880-960 1710-2170 2490-2690

X X X X

65° 65° 65° 65°

2°-14° 2°-14° 2°-10° 2°-10°

KATHREIN

Antennen · Electronic

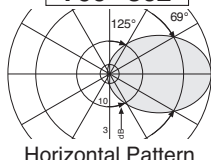
Preliminary Issue

XXXXPol Panel 790-862/880-960/1710-2170/2490-2690 65°/65°/65°/65° 14.5/15/17.5/16.5dBi 2°-14°/2°-14°/2°-10°/2°-10°T

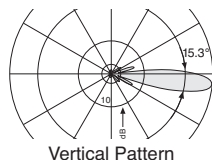
Type No.	80010804					
	790-862	880-960	1710-2170	1710-2170	2490-2690	2490-2690
Frequency range	790 - 862 MHz	880 - 960 MHz	1710 - 1880 MHz	1850 - 1990 MHz	1920 - 2170 MHz	2490 - 2690 MHz
Polarization	+45°, -45°	+45°, -45°	+45°, -45°	+45°, -45°	+45°, -45°	+45°, -45°
Average gain (dBi)	14.5 ... 14.4 ... 14.2	14.8 ... 14.6 ... 14.4	17.0 ... 16.9 ... 16.6	17.4 ... 17.3 ... 16.8	17.5 ... 17.4 ... 16.8	16.5 ... 16.4 ... 16.0
Tilt	2° ... 7° ... 14°	2° ... 7° ... 14°	2° ... 5° ... 10°	2° ... 5° ... 10°	2° ... 5° ... 10°	2° ... 5° ... 10°
Horizontal Pattern:						
Half-power beam width	69°	67°	65°	63°	65°	65°
Front-to-back ratio, copolar (180°±30°)	> 27 dB	> 27 dB	> 25 dB	> 25 dB	> 25 dB	> 25 dB
Cross polar ratio	Typically: 25 dB	Typically: 25 dB	Typically: 18 dB	Typically: 21 dB	Typically: 21 dB	Typically: 23 dB
Maindirection	0°					
Sector	±60°	> 8 dB	> 9 dB	> 9 dB	> 9 dB	> 9 dB
Vertical Pattern:						
Half-power beam width	15.3°	13.3°	6.2°	5.8°	5.7°	4.8°
Electrical tilt, continuously adjust.	2°-14°	2°-14°	2°-10°			2°-10°
Sidelobe suppression for first sidelobe above main beam	2° ... 7° ... 14° 16 ... 16 ... 16 dB	2° ... 7° ... 14° 15 ... 15 ... 15 dB	2° ... 5° ... 10° T 14 ... 15 ... 16 dB	2° ... 5° ... 10° T 14 ... 16 ... 17 dB	2° ... 5° ... 10° T 16 ... 16 ... 17 dB	2° ... 5° ... 10° T 15 ... 16 ... 17 dB
Impedance	50 Ω	50 Ω	50 Ω			50 Ω
VSWR	< 1.5	< 1.5	< 1.5			< 1.5
Isolation: Intrasystem	> 30 dB	> 30 dB	> 28 dB			> 28 dB
Isolation: Intersystem	> 30 dB (790-862 // 880-960 // 1710-2170 // 2490-2690 MHz)					
Intermodulation IM3	< -150 dBc (2 x 43 dBm carrier)					
Max. power per input	500 W*	500 W*	200 W*			200 W*
Total power	1000 W*	1000 W*	400 W*			400 W*

* (at 50 °C ambient temperature)

790-862 +45°/-45° Polarization



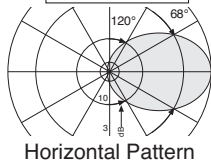
Horizontal Pattern



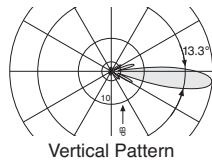
Vertical Pattern

2°-14° electrical downtilt

880-960 +45°/-45° Polarization



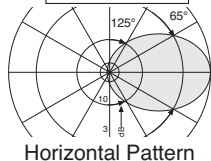
Horizontal Pattern



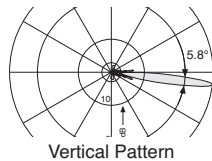
Vertical Pattern

2°-14° electrical downtilt

1710-2170 +45°/-45° Polarization



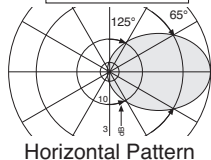
Horizontal Pattern



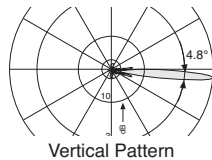
Vertical Pattern

2°-10° electrical downtilt

2490-2690 +45°/-45° Polarization

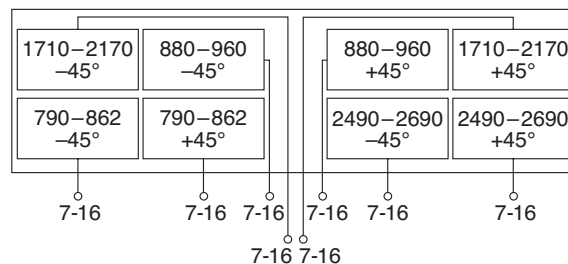


Horizontal Pattern



Vertical Pattern

2°-10° electrical downtilt



Mechanical specifications

Input	8 x 7-16 female (long neck)
Connector position	Bottom
Adjustment mechanism	4x, Position bottom continuously adjustable
Wind load	Frontal: 700 N (at 150 km/h) Lateral: 270 N (at 150 km/h) Rearside: 730 N (at 150 km/h)
Max. wind velocity	200 km/h
Height/width/depth	1403 / 300 / 152 mm
Category of mounting hardware	M (Medium)
Weight	21 kg / 23 kg (clamps incl.)
Packing size	1726 x 322 x 190 mm
Scope of supply	Panel and 2 units of clamps for 42 - 115 mm diameter



936.A2906 Subject to alteration.

Quad-band Panel

Dual Polarization

Half-power Beam Width

Adjust. Electr. Downtilt

set by hand or by optional RCU (Remote Control Unit)

790-862 880-960 1710-2170 2490-2690

X X X X

65° 65° 65° 65°

0°-10° 0°-10° 2°-8° 2°-8°

KATHREIN

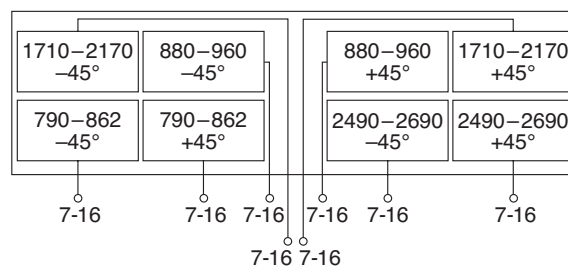
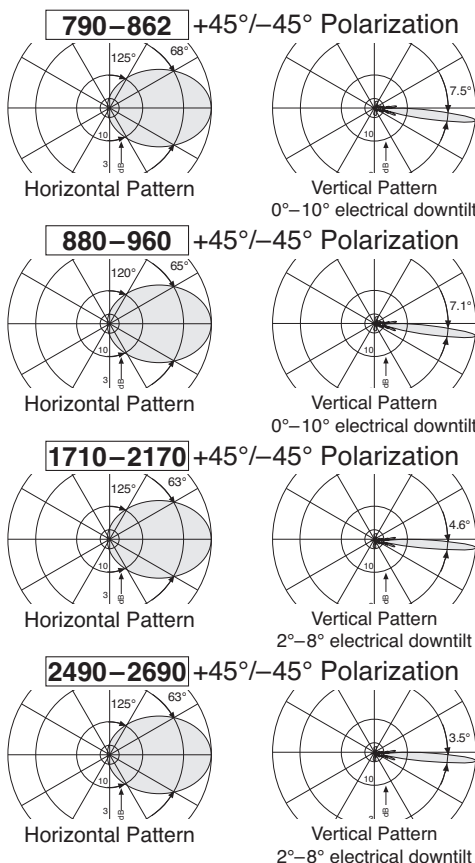
Antennen · Electronic

Preliminary Issue

XXXXPol Panel 790-862/880-960/1710-2170/2490-2690 65°/65°/65°/65° 16.5/17/18/18dBi 0°-10°/0°-10°/2°-8°/2°-8°T

Type No.	80010806					
	790-862	880-960	1710-2170		2490-2690	
Frequency range	790 - 862 MHz	880 - 960 MHz	1710 - 1880 MHz	1850 - 1990 MHz	1920 - 2170 MHz	2490 - 2690 MHz
Polarization	+45°, -45°	+45°, -45°	+45°, -45°	+45°, -45°	+45°, -45°	+45°, -45°
Average gain (dBi)	16.5 ... 16.4 ... 16.2	16.8 ... 16.9 ... 16.7	18.0 ... 18.0 ... 17.6	18.0 ... 18.0 ... 17.5	18.1 ... 18.1 ... 17.4	17.8 ... 17.8 ... 17.6
Tilt	0° ... 5° ... 10°	0° ... 5° ... 10°	2° ... 4° ... 8°	2° ... 4° ... 8°	2° ... 4° ... 8°	2° ... 4° ... 8°
Horizontal Pattern:						
Half-power beam width	68°	65°	62°	63°	62°	63°
Front-to-back ratio, copolar (180°±30°)	> 27 dB	> 27 dB	> 25 dB	> 25 dB	> 25 dB	> 25 dB
Cross polar ratio	Typically: 22 dB	Typically: 22 dB	Typically: 18 dB	Typically: 22 dB	Typically: 23 dB	Typically: 25 dB
Main direction	0°					
Sector	±60°					
Vertical Pattern:						
Half-power beam width	7.5°	7.1°	4.8°	4.6°	4.4°	3.5°
Electrical tilt, continuously adjust.	0°-10°	0°-10°	2°-8°			2°-8°
Sidelobe suppression for first sidelobe above main beam	0° ... 5° ... 10° 18 ... 16 ... 15 dB	0° ... 5° ... 10° 18 ... 17 ... 15 dB	2° ... 4° ... 8° 18 ... 16 ... 16 dB	2° ... 4° ... 8° T 18 ... 18 ... 17 dB	2° ... 4° ... 8° T 18 ... 17 ... 17 dB	2° ... 4° ... 8° T 18 ... 18 ... 18 dB
Impedance	50 Ω	50 Ω	50 Ω			50 Ω
VSWR	< 1.5	< 1.5	< 1.5			< 1.5
Isolation: Intrasystem	> 30 dB	> 30 dB	> 28 dB			> 28 dB
Isolation: Intersystem	> 30 dB (790-862 // 880-960 // 1710-2170 // 2490-2690 MHz)					
Intermodulation IM3	< -150 dBc (2 x 43 dBm carrier)					
Max. power per input	250 W*	250 W*	200 W*			200 W*
Total power	500 W*	500 W*	400 W*			400 W*

*(at 50 °C ambient temperature)



Mechanical specifications	
Input	8 x 7-16 female (long neck)
Connector position	Bottom
Adjustment mechanism	4x, Position bottom continuously adjustable
Wind load	Frontal: 1380 N (at 150 km/h) Lateral: 520 N (at 150 km/h) Rearside: 1490 N (at 150 km/h)
Max. wind velocity	200 km/h
Height/width/depth	2622 / 300 / 152 mm
Category of mounting hardware	H (Heavy)
Weight	35 kg / 37 kg (clamps incl.)
Packing size	2951 x 322 x 190 mm
Scope of supply	Panel and 2 units of clamps for 50 - 115 mm diameter



936.A2901 Subject to alteration.

Dual-band Omni Antenna 790–960/1710–2700 Vertical Polarization V Indoor and outdoor use

KATHREIN
Antennen · Electronic
Preliminary Issue

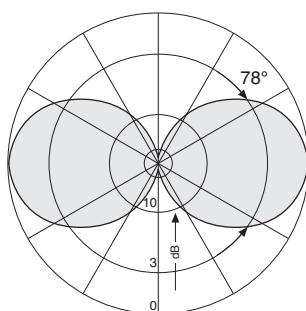
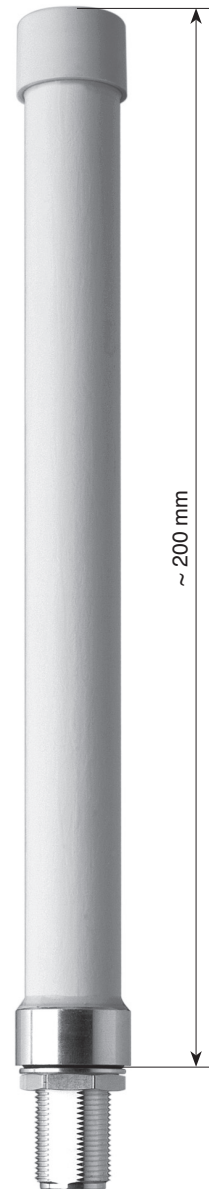
Product Candidate

VPol Omni 790–960/1710–2700 360° 2dBi

Type No.	80010847
Input	1 x N female
Connector position	Bottom or top
Frequency range	790 – 960 MHz / 1710 – 2700 MHz
VSWR	< 2.0
Gain	2 dBi
Impedance	50 Ω
Intermodulation IM3	< -150 dBc (2 x 43 dBm carrier)
Polarization	Vertical
Max. power	50 W (at 50 °C ambient temperature)
Weight	~ 250 g
Radome diameter	30 mm
Height	~ 200 mm

Material: Radiator: Brass.
Radome: Fiberglass, colour: White.

Mounting: One hole mounting (16 mm diameter) to surfaces of max. 10 mm thickness.



Vertical Pattern

936.A2932 Subject to alteration.

791 - 862 MHz
LTE 800

880 - 960 MHz
GSM 900

1710 - 2690 MHz
GSM 1800 / UMTS 2100 / LTE 2600

- Designed for co-sitting purposes
- Enables feeder sharing
- Can be used as a combiner near the BTS or in a reciprocal function near the antenna
- Suitable for indoor or outdoor applications
- Wall or mast mounting
- Available as a single unit, or for XPol antennas as a double unit
- Built-in lightning protection
- External DC Stop available as an accessory

Technical Data

Type No.	78211190 Single Unit	78211192 Single Unit
	78211191 Double Unit	78211193 Double Unit
Pass band Band 1 Band 2 Band 3	791 - 862 MHz 880 - 960 MHz 1710 - 2690 MHz	
Insertion loss Port 1 ↔ Port 4 Port 2 ↔ Port 4 Port 3 ↔ Port 4	< 0.3 dB (791 - 862 MHz) < 0.3 dB (880 - 960 MHz) < 0.3 dB (1710 - 2960 MHz)	
Isolation Port 1 ↔ Port 2 Port 1 ↔ Port 3 Port 2 ↔ Port 3	> 50 dB > 50 dB > 50 dB	
VSWR	< 1.2 (791 - 862 / 880 - 960 / 1710 - 2690 MHz)	
Impedance	50 Ω	
Input power Band 1 / Band 2 / Band 3	< 300 W / < 300 W / < 300 W	
Intermodulation products	< -160 dBc (3 rd order; with 2 x 20 W)	
Temperature range	-40 ... +60 °C	
Connectors	7-16 female (long neck)	
Application	Indoor or outdoor (IP 66)	
DC/AISG transparency	By-pass (max. 2500 mA)	Stop
	By-pass (max. 2500 mA)	Stop
	By-pass (max. 2500 mA)	By-pass (max. 2500 mA)
Lightning protection	3 kA, 10/350 μs pulse	
Mounting	Wall mounting: With 4 screws (max. 8 mm diameter) Mast mounting: With additional clamp set	
Weight	Single unit: ??? kg / Double unit: ??? kg	
Packing size	Single unit: ??? x ??? mm / Double unit: ??? x ??? mm	
Dimensions (w x h x d)	Single unit: ??? x ??? mm / Double unit: ??? x ??? mm (without connectors, without mounting brackets)	

Subject to alteration.

936.A2900