KATHREIN
SCALA DIVISION

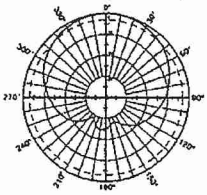
800 10121

Multiband Directional Antenna

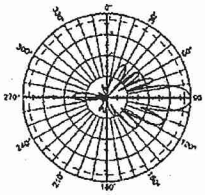
Kathrein's dual band antennas are ready for 3G applications, covering all existing wireless bands as well as all spectrum under consideration for future systems, AMPS, PCS and 3G/UMTS. These cross-polarized antennas offer diversity operation in the same space as a conventional 800 MHz antenna, and are mountable on our compact sector brackets.

- Wide band operation.
- Exceptional intermodulation characteristics.
- Remote control ready.
- Various gain, beamwidth and downtilt ranges.
- AISG compatible.
- High strength pultruded fiberglass radome.

806–960 MHz

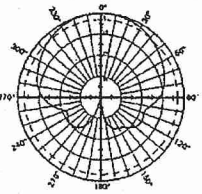


Horizontal pattern
±45°-polarization

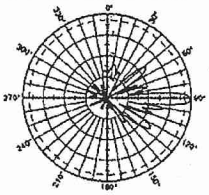


Vertical pattern
±45°-polarization
0.5°–12.5° electrical downtilt

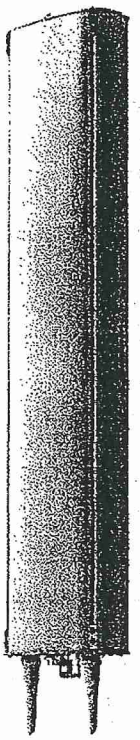
1710–2180 MHz



Horizontal pattern
±45°-polarization



Vertical pattern
±45°-polarization
0.5°–10° electrical downtilt



General specifications:

Frequency range	806–960 MHz 1710–2180 MHz
VSWR	<1.5:1
Impedance	50 ohms
Intermodulation (2x20w)	IM3: < -150 dBc
Polarization	+45° and -45°
Connector	4 x 7/16 DIN female
Isolation intrasystem intersystem	>30 dB >45 dB (806–960 // 1710–2180 MHz)
Weight	46.3 lb (21 kg)
Dimensions	54.5 x 10.3 x 5.9 inches (1384 x 262 x 149 mm)
Equivalent flat plate area	5.58 ft² (0.518 m²)
Wind survival rating*	120 mph (200 kph) sustained 150 mph (240 kph) in a 3 second burst
Shipping dimensions	67.6 x 12 x 8 inches (1716 x 304 x 204 mm)
Shipping weight	50.7 lb (23 kg)
Mounting	Fixed mount options are available for 2 to 4.6 inch (50 to 115 mm) OD masts.

See reverse for order information.

Specifications:	806–865 MHz	824–896 MHz	880–960 MHz	1710–1880 MHz	1850–1990 MHz	1920–2180 MHz
Average gain (dBi) Tilt	13.4 13.4 13.1 0° 6° 12°	13.6 13.6 13.4 0° 6° 12°	13.9 13.8 13.5 0° 6° 12°	16.4 16.4 16.2 0° 5° 10°	16.4 16.5 16 0° 5° 10°	16.4 15.9 15.3 0° 5° 10°
Front-to-back ratio	>23 dB (co-polar)	>23 dB (co-polar)	>23 dB (co-polar)	>23 dB (co-polar)	>23 dB (co-polar)	>23 dB (co-polar)
Maximum input power per input (at 50°C)	400 watts	400 watts	400 watts	250 watts	250 watts	250 watts
+45° and -45° polarization horizontal beamwidth	88° (half-power)	86° (half-power)	88° (half-power)	82° (half-power)	85° (half-power)	90° (half-power)
+45° and -45° polarization vertical beamwidth	15° (half-power)	14.5° (half-power)	13.5° (half-power)	7.1° (half-power)	6.8° (half-power)	6.5° (half-power)
Electrical downtilt continuously adjustable (manual or optional remote control)	0.5°–12.5°	0.5°–12.5°	0.5°–12.5°	0.5°–10°	0.5°–10°	0.5°–10°
Vertical Pattern–min. side-lobe suppression for first sidelobe above main beam average	0° 6° 12° T 16 16 16 dB 17 17 19 dB	0° 6° 12° T 16 16 16 dB 17 17 19 dB	0° 6° 12° T 14 14 13 dB 17 16 16 dB	0° 5° 10° T 17 17 16 dB 20 20 18 dB	0° 5° 10° T 17 18 16 dB 21 22 17 dB	0° 5° 10° T 18 16 16 dB 20 20 16 dB
Front-to-back ratio (copolar)	>23 dB	>23 dB	>23 dB	>23 dB	>23 dB	>23 dB
Cross polar ratio (typical) Main direction 0° Sector ±60° average ±60°	 18 dB >10 dB 16 dB	 18 dB >10 dB 16 dB	 20 dB >13 dB 19 dB	 17 dB >10 dB 17 dB	 16 dB >12 dB 19 dB	 15 dB >10 dB 19 dB

RoHS Lead-Free

10724-H
936.2686/b

* Mechanical design is based on environmental conditions as stipulated in EIA-222-F (June 1996) and/or ETS 300 019-1-4 which include the static mechanical load imposed on an antenna by wind at maximum velocity. See the Engineering Section of the catalog for further details.

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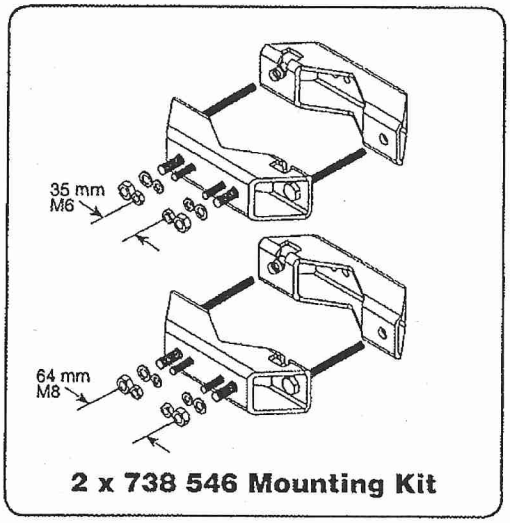
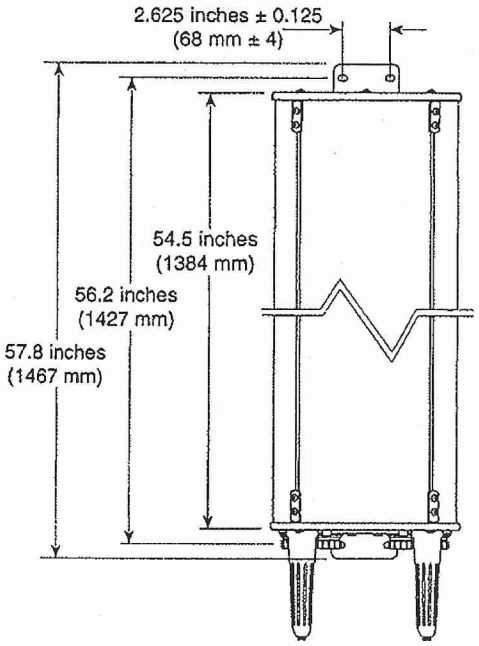
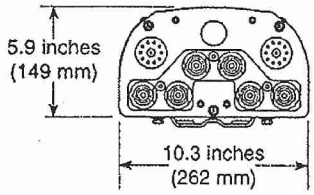
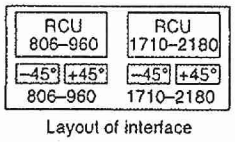


2 x 738 546 Mounting Kit







Layout of interface

Mounting Options:

Model	Description
2 x 738 546 (shown)	Mounting Kit for 2 to 4.6 inch (50 to 115 mm) OD mast.
850 10013	Tilt Mount Kit 0–15 degrees downtilt angle.

Order Information:

Model	Description
800 10121	Antenna with 7/16 DIN connectors

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Tower Mounted Amplifier

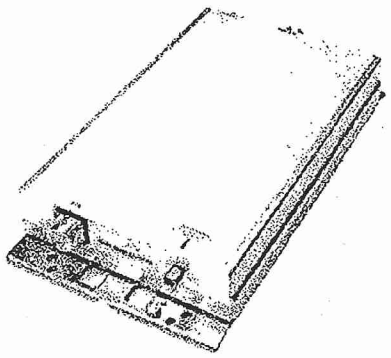
Dual Band 1900 MHz with 850 MHz Bypass

Preliminary

Part Number:	Up-link: 1850-1910 MHz Down-link: 1930-1990 MHz Bypass: 824-894 MHz	Gain: 12 dB Noise Figure: < 1.7 dB

The Powerwave® TMA-DD 1900/850 is a dual band Tower Mounted Amplifier (TMA) to be installed near the antenna. Deployed in an AMPS, GSM, GPRS, EDGE and CDMA network it will increase capacity and coverage as well as extend the battery life time for the handsets. The TMA System will provide enhanced coverage and improved up-link signal quality. Appropriate for new rollouts by optimizing coverage with a reduced number of BTSs or as an upgrade to existing BTSs for enhancing the existing coverage.

Extended band TMA facilitates simplified logistics, especially when the frequency bands are scattered. The unit comprises of high Q band-pass filters, dual balanced low noise amplifiers with circuits for active bias, supervision, alarms and lightning protection circuit. The Powerwave patented design with all active components integrated within the filter body provides an extremely reliable, compact and lightweight TMA solution. The vented enclosure design is employed to prevent the effect of condensation, thereby guaranteeing long, reliable, maintenance-free service in all environmental conditions. These TMAs offer an easy to install, maintenance free, cost effective solution for coverage enhancement and increased quality in mobile communication networks.



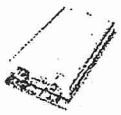
Key Benefits:

- 850 MHz Bypass
- Improved Network Quality
- Increased Coverage
- State of the Art Performance
- Excellent Power Handling
- Low Tx Loss
- Exceptional Reliability

BASE STATION SYSTEMS

COVERAGE SYSTEMS

Tower Mounted Amplifier



Technical Specifications

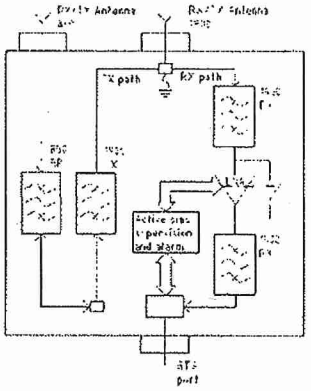
Product Number	LGP214nn	
850 MHz	Bypass (MHz)	824-894
	Return loss* (dB)	> 20
	Insertion loss* (dB)	< 0.3
1900 MHz		
Up-link	Frequency range, full band (60 MHz)	1850-1910
	Nominal gain (dB)	12
	Return loss* (dB)	> 20
	Noise figure* (dB)	< 1.7
	Output 3rd order Intercept Point* (dBm)	> +23
Down-link	Frequency range, full band (60 MHz)	1930-1990
	Insertion loss* (dB)	< 0.6
	Return loss* (dB)	> 20
Intermodulation	2 Tx@x43 dBm (dBc)	<-158
Alarm Functionality	Two levels,individually supervised LNAs	
Power Consumption	@12 VDC	1.2 W

* Typical

All specifications subject to change without notice. Please contact your Powerwave representative for complete performance data.

Mechanical Specifications

Size,W x H x D (without mounting plate)	235 x 366 x 66 mm (9.2 x 14.4 x 2.6 in)
Weight	6.4 kg (14.1 lbs)
Color	Off white (NCS 1502-R)
Housing	Aluminum
RF-connectors	DIN 7/16 female.
Mounting kit	Mounting kit for pole and wall is included
Temperature range	-40 °C to +65 °C (-40 °F to +149 °F)
MTBF	>1 million hours
Safety	UL 60 950
Ingress protection, IP 65	EN 60 529
Environmental	ETS 300 019
EMC	FCC Part 15



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Powerwave technologies

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