

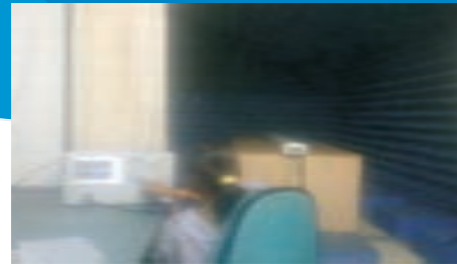
## Quality Assurance

Kadevi is an ISO 9001:2008 company having a stringent quality process adopted right from receipt of the raw material, work in process during manufacturing of components as well as mechanical & electronic and testing. All the design requirements are meticulously verified during manufacturing process including quality of soldering in accordance with QC/ Test plan and the compliance of the final product with design specifications ensured.

The electrical parameters like VSWR and Isolation of BTS antennas and MW antenna feeds are measured using network analyzer in Anechoic chamber which, by eliminating spurious signals caused by RF reflections, ensures accurate and error-free measurements.

The desired inter-modulation performance of BTS antenna are ensured through strict adherence to design and process controls in a dust free environment and finally verification of IM3 levels with a state-of-the-art passive IM analyzer.

The reflection of MW antennas are formed in a heavy duty hydraulic press using punch dies machined to high precision. The profile accuracy is measured with a precisely machined and calibrated template to ensure the specified RMS value.



VSWR and isolation testing using Vector Network Analyzer



IM3 testing using Passive Inter-modulation Analyzer

## Microwave Antenna Product Range

Frequency Range	0.3 M Diameter				0.6 M Diameter				1.2 M Diameter						
	Standard Performance	High Performance		Ultra High Performance		Standard Performance	High Performance		Ultra High Performance		Standard Performance	High Performance		Ultra High Performance	
		Single Polarised	Dual Polarised	Single Polarised	Dual Polarised		Single Polarised	Dual Polarised	Single Polarised	Dual Polarised		Single Polarised	Dual Polarised	Single Polarised	Dual Polarised
4.4 - 5.0 GHz	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5.925 - 6.425 GHz	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
6.425 - 7.125 GHz	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
7.125 - 7.725 GHz	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
7.7 - 8.5 GHz	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8.5 - 8.75 GHz	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10.7 - 11.7 GHz	✓	✓	—	—	—	—	—	—	—	—	—	—	—	—	—
12.75 - 13.25 GHz	✓	✓	—	—	—	—	—	—	—	—	—	—	—	—	—
14.4 - 15.35 GHz	✓	✓	—	—	—	—	—	—	—	—	—	—	—	—	—
17.7 - 19.7 GHz	✓	✓	—	—	—	—	—	—	—	—	—	—	—	—	—
21.2 - 23.6 GHz	✓	✓	—	—	—	—	—	—	—	—	—	—	—	—	—
24.25 - 26.5 GHz	✓	✓	—	—	—	—	—	—	—	—	—	—	—	—	—

## BTS Antenna Product Range

Description	Polarisation		Beam Width					Tilt				Gain
	Vertical	Cross	33°	65°	90°	105°	120°	Mechanical		Electrical		
								Fixed	Variable	Fixed	Variable	
900 MHZ sigle band GSM antennas	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
1800 MHZ sigle band GSM antennas	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
800 MHZ sigle band CDMA antennas	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
900/1800 MHZ dual band GSM antennas	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
1800/1800 MHZ dual band GSM antennas	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Six ports Tri-bank antennas 824 - 960 MHZ - 2 ports & 1710 - 2170 MHZ - 4 ports	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Kadevi reserves the right to change the specifications of the product range without prior notice.



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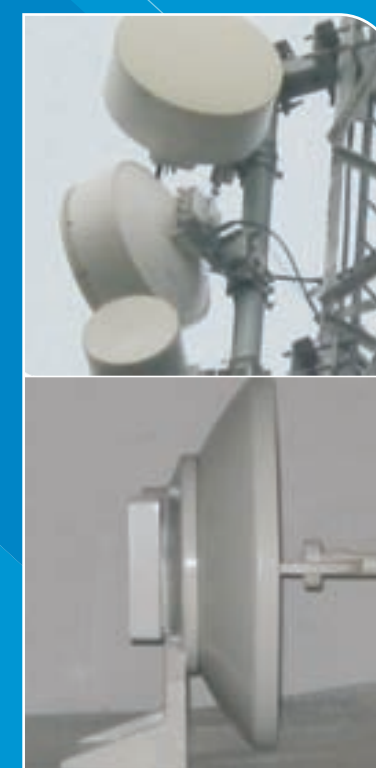
ISO 9001-2008, 14001-2004 & BS OHSAS 18001-2007  
CERTIFIED COMPANY



## Antenna Systems Division



## Base Station Antennas Microwave Antennas





# Base Station Antennas | Microwave Antennas

## About Kadevi

Kadevi was established in 1984 and started as a small scale industry manufacturing of Communication Antennas and Pneumatic Telescopic Masts. The objective of indigenous development of antennas in the MF, HF, VHF, UHF frequency bands catering essentially to defence requirements. During the course of four decades, several new antenna products were successfully developed and supplied.

Some of the products developed were Import substitutes which resulted in a substantial saving of scarce foreign exchange at the time. The company was also awarded Import substitution awards by ELICINA and AP State Government. Basing on its core strength in design, manufacture and testing of antennas, Kadevi has enlarged its antenna product line by the addition to its portfolio of Base Station Panel & Microwave antennas required for the telecom industry. Subsequently the company further expanded its wings into various manufacturing & service fields. Kadevi has rapidly grown to a large scale industry just in 3 years and have received several awards and became pioneer in all fields. Today the company is having 1000 plus strong manpower.

### Manufacturing Divisions

- Towers & Galvanising
- Telescopic & Guyed Masts
- Antenna Systems
- Steel Rolling Mill
- Fasteners
- AC Generators
- DC Generators

### Service Divisions

- Transmission & Distribution
- Tower Installations
- EPC & TSP



Kadevi is having a rare combination of full scaled infrastructure under one roof with state of art in house facilities right from manufacturing of steel sections, fabrication of towers & structures, Hot dip galvanising, Fasteners & Generators at Anikreddipally Plant. These facilities are fully equipped to ensure the highest level of quality and delivery timelines of customer.

## Research & Development

Kadevi has in-house full scaled R & D centre with experienced team to develop custom made antennas to any specifications in HF, VHF, UHF & MW frequency meeting all parameters prescribed by the customers. Any new design we receive from our technology partner we develop the sample antennas as per the specifications and subsequently productionised for the bulk quantity. Kadevi has developed Omni direction whip antennas frequency band 824 to 896 MHz for Tata Tele services for their WLL project & supplied 15000 whip antennas used for wireless telephone booth's supported by CDMA technology in the year 2002.

## Technology Partner

Kadevi has tied up with Shanghai Trustele Technology Co. Ltd, a part of Trustele Group in China, for obtaining the technology for BTS antennas and Microwave antennas. Trustele Group, a renowned name in China has a wide product range which includes BTS antenna, Microwave antenna, RF equipments and accessories and indoor coverage systems. They have been supplying BTS antennas since 2000 and Microwave antennas since 2006. BTS antennas of various specifications numbering over 600000 are installed in the cellular networks in China and other parts of the world. Their prestigious clientele comprises China Mobile, China Unicom, China Telecom & NEC in China. In the domestic market, the antennas are sold under the brand name of Yaxin. Exports of the antennas are made under the "Antel" brand name by Haining Antel Technology, also a part of Trustele Group. They have supplied several thousands of BTS antennas to BSNL in India which are now operating in their network.

## Microwave Antennas

Microwave parabolic antennas produce highly directional beams and are used in point-to-point communication systems. Kadevi offers these antennas in the frequency band ranging from 4.40 GHz to 28.5 GHz and in the sizes of 0.3 m, 0.6 m and 1.2 m diameter. Both single polarized and dual polarized versions are available. As the increasing use of Microwave links witnessed day after day for effective control of RF interference, Kadevi's MW antennas are offered in three performance grades viz. Standard Performance (SP), High Performance (HP) and Ultra High Performance (UHP). SP antennas are unshrouded and provide economical and reliable service in systems where a high degree of back and side radiation suppression is not necessary. HP antennas have shrouds to improve the radiation pattern performance. These are suited for systems where a good level of side lobe suppression and good F/B ratio are required. UHP antennas are similar in construction to HP antennas. Additionally, with specially designed and tuned feed system, the antennas provide very high Cross polarisation discrimination and exhibit the best directional characteristics. These are therefore suited to the systems using extensive frequency reuse in digital transmissions.



**Shearing Machine:**  
For cutting Aluminium / MS Plates into required sizes.



**Hydraulic Press Machine:**  
For forming of dish profile.



**Shroud Cutting Machine:**  
For trimming of shroud.



**Powder Coating Unit**



**Microwave Antenna Assembly**

## Base Station Panel Antennas

Having been associated with Telecom operators as a leading supplier of Telecom towers, Kadevi understands the antenna solutions required for general and specific applications. Accordingly, a wide range of panel antennas are offered which incorporate value-added features like

- Cross polarisation for polarisation diversity
- Dual band feature
- 8-port Tri-band features in a single antenna
- Fixed and variable mechanical tilt
- Fixed and variable electrical tilt
- Cost-effective, beam-shaping for improvement of coverage for urban and sub-urban areas.

The antennas are designed to meet specific applications based on cell site requirements and to facilitate optimization of network planning. Thus we can offer vertical polarised and cross polarised antennas with beam widths of 33°, 65°, 90°, 105°, 120°, with gain ranging from 12 dBi to 21 dBi, with fixed mechanical/electrical tilt, variable mechanical / electrical tilt and remote electrical tilt.



## Production Process



**Film Covering Machine:**  
For covering aluminium sheet with self adhesive film.



**Turret Punch Machine:**  
For punching of holes on reflector panel.



**Press Brake Machine:**  
For bending of reflector panel.



**Pultrusion-Machine**



**Cable Stripping Machine:**  
For stripping the co-axial cables.



**BTS Antenna Networking**



**BTS Antenna Radom Fixing**