

Company profile & introduction

Feb. 2021



www.kdie87.com / www.kdie.co.kr
Tel. : 82-51-303-6900 / Fax. : 82-51-303-6949
E-mail : dmoh393@gmail.com, kukdong505-9@hanmail.net
41, Nakdong-daero 1330beon-gil, Sasang-gu, Busan, Republic of Korea (46910)

COMPANY INFORMATION

1. General information

極東産業 (KUK DONG Industrial Engineering)

Head office : 41, Nakdong-daero 1330beon-gil, Sasang-gu, Busan, Republic of Korea (〒 46910)

2nd factory : 76, modeok-ro, Sasang-gu, Busan (〒 46943)

3rd factory : 58, Nakdong-daero 1330beon-gil, Sasang-gu, Busan (〒 46910)

2. CEO

吳斗萬 (Du-man, Oh)

3. Foundation date

1987. 06. 09

4. Main product

Fuel injection pipe, Fluid machinery, Centrifugal pump, Exhaust gas pipe system

5. Employee

45 persons

6. Sales

6.3 million dollar

7. Customer

Hyundai Heavy Industries, Hyundai Mipo Dockyard, Hyundai Samho Industries,

Mitsui E&S Machinery Co., Ltd., Kawasaki Heavy Industries, LG Electronics Inc.

Hanjin Heavy Industries, ShinShin Machinery Co., Ltd., Hyosung

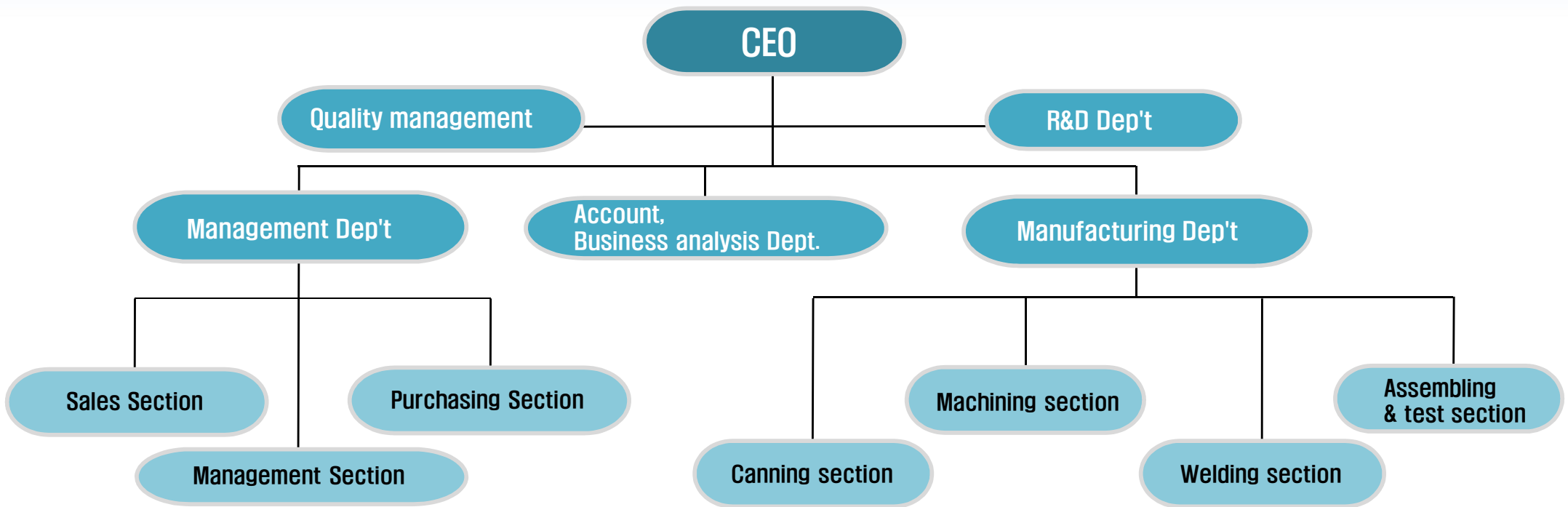
8. Contact

Homepage : www.kdie87.com / www.kdie.co.kr

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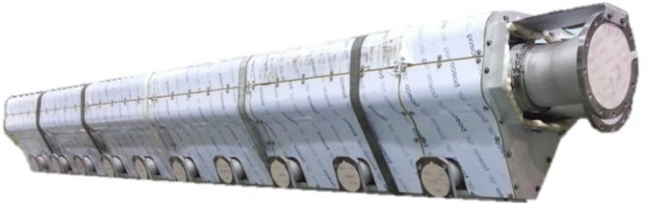
ORGANIZATION CHART



Section	Major Role	Persons	Section	Major Role	Persons
CEO	Management	1	R&D Center	R&D	4
Quality management	Quality Management	2	Machining section	Machining	10
Account, Business Analysis Dept.	Account, Business analysis	2	Assembling & Test section.	Painting, assembly, test	9
Management section	General Affairs	2	Canning section	Canning	7
Purchasing section	Purchasing	2	Welding section	Welding	8
Sales section	Sales	1			
Total Number of employee					45

PRODUCT (1/4)

EXHAUST GAS PIPE SYSTEM



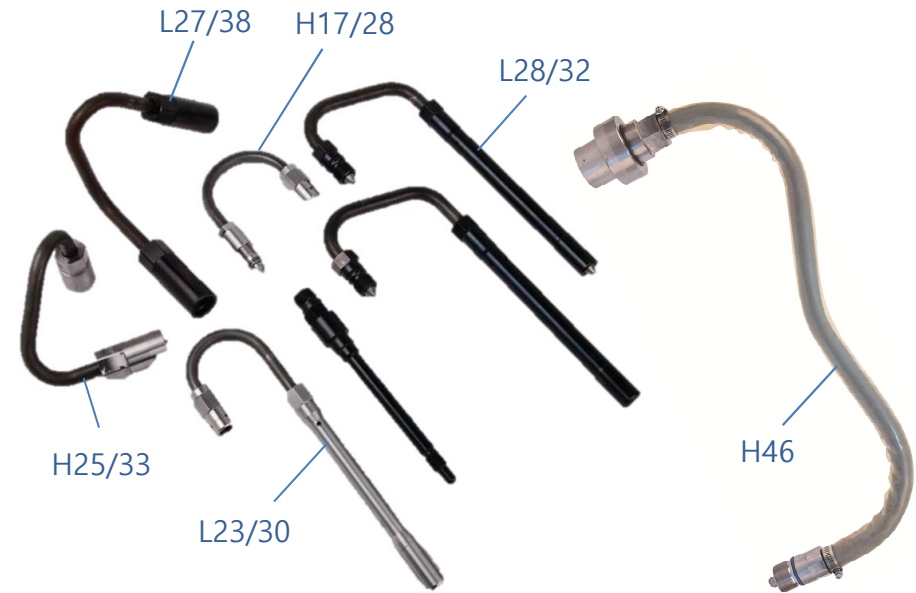
Engine model	Number of cylinder
H17/28	5 ~ 9
H21/32(P)	5 ~ 9
H25/33(P)	6 ~ 9
H32/40(P)	6 ~ 9
H32/40V(P)	12/14/16/18/20
H46P	8
H46V(P)	12
H54DFV	12

Engine model	Number of cylinder
L23/30	5 ~ 8 CYL.
L23/30H	5 ~ 8 CYL.
L28/32H	5 ~ 9 CYL.

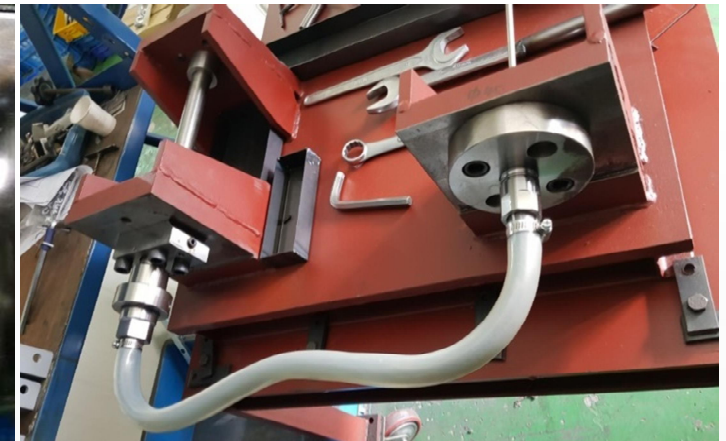


PRODUCT (2/4)

HIGH PRESSURE FUEL INJECTION –PIPE & BLOCK



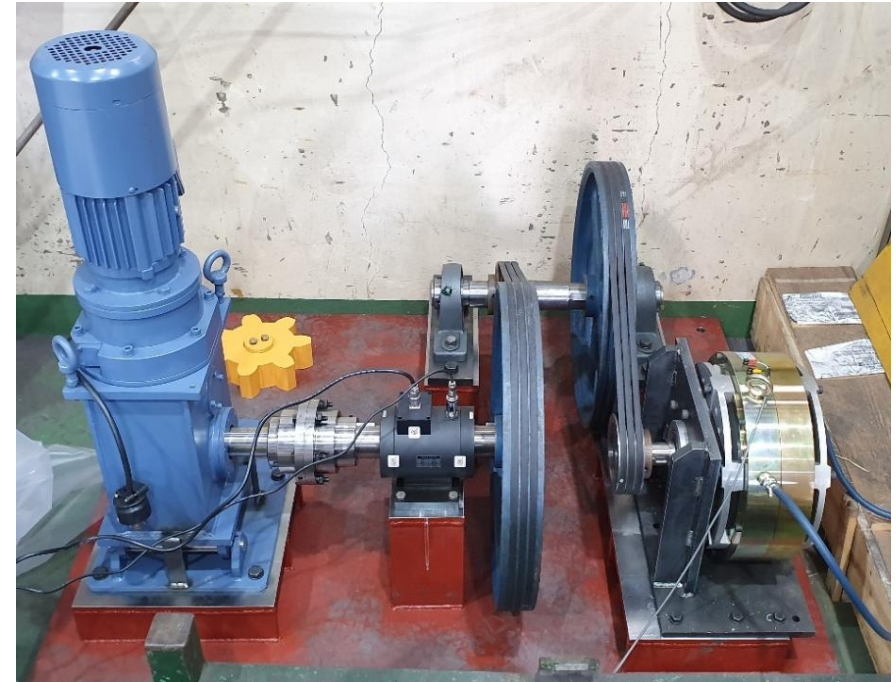
- Material : ST52.4 NBK, E235 NBK, ST37.4, SCM440
- Procedure :
 - Cutting & Machining → 1st Forming & Machining
 - Assembly → Machining → 2nd Forming & Machining
 - Bending → Inspection(Internal endoscope) → Cleaning
 - Autofrettage + Hyd.test → Packing
- Test : Autofrettage – Max. 4,900bar x 10sec
Hyd. Test – Max. 3,200bar x 10min



TURNING GEAR



H32



Turning gear -Test bench

- Features
 - 1) Grease-based lubrication
 - 2) Hand driven handle
 - 3) Applied Planetary gear (Compact size)
- Specification
 - 1) Rotation : 5.5~7.5rpm
 - 2) Torque : Min. 760Nm
 - 3) Motor : 4P, 0.75kW, 3x240/440V 60Hz, IP55, Insulation – F class

PRODUCT (4/4)

COOLING WATER CENTRIFUGAL PUMP



H32



H46V



H54DF

- Capacity : Max.600m³/h, Head : ~100m
- Features : Gear driven, High efficiency, Highly reliable
- Use : Marine diesel engine cooling, etc

LDCL JCW CIRCULATION PUMP

Certificate of Approval
from MAN E&S



- Capacity : Max.390m³/h, Head : 0.8bar
- Features : Fluid temperature 140°C,
- Use : LDCL JCW system circulation, Marine installation, Build on a 2-stroke diesel engine

EQUIPMENT

Production equipment

Name	Model	Q'ty
MCT	H-UNIT 8	2
	V-UNIT 6.5	1
CNC Turning M/C	V850	1
Automatic welding unit	TIG 350A 8kW	1
CNC LATHE WITH MILLING HEAD AND COUNTERSPINDLE	MT253S/1000	1
CNC Lathe	SKT-28	2
CNC Lathe	QUICK TURN 28N	1
CNC Lathe	SKT160C	1
Milling M/C (UNIT 5)	DMB-U5A	1
Milling M/C (UNIT 2)	WHACHEON	1
580 Lathe	HL-580	3
480 Lathe	HL-580	1
Radial drilling M/C	DRD-1100	1
Plasma cutters	DS-60A	1
High speed cutting M/C	YS-16A	1
Hydraulic Forming M/C	SHF-40	1
Gun-Drill	SMGC-300	1
	SMGK-600CNC	1
ECM M/C	HS-REC	1
AFM M/C	VECTOR 150 / 200	1 / 1

Name	Model	Q'ty
Tig welding M/C	500A	14
Pipe bending M/C	MB43-TRI	1
CO ₂ welding M/C	500A	7
CO ₂ welding M/C	350A	3
Electric welding M/C	180A	1
Robot, Positioner	HA06, AX-2PF	2
Hydraulic Press	400 TON	1
Power Press	120 TON	1
Bench drill	HDT-410,370	8
Cutters (for press)	MK45	1
Autofrettage (5,500bar)	G400-2LVE	1



MCT-UNIT 8
(Horizontal)

CNC LATHE
WITH MILLING HEAD
AND COUNTERSPINDLE



MCT - UNIT 6.5



Automatic welding unit

Measuring & Test equipment

Name	Model	Q'ty
Pump-Test bench	~600m ³ /h	1
Exhaust gas heat exchange - Test bench	~600°C	1
Power analyzer	WT-1800	1
Oscilloscope	DL1740	1
Temperature recorder	4RS 1000	1
Air ejector-Test bench	-	1
Current sensor	CT1000	3
Flow meter	25~250m ³ /h	1
	10~100m ³ /h	1
	0.4~8m ³ /h	1
Tachometer	TM-5000	1
Vibrometer	ACO-3116	1
Sound level meter	CENTER-322	1
Vacuum tester	JA0612	1
Pressure tester	H2500 (2,500bar)	1
Surface roughness tester	SJ301	1
Vernier calipers	-	8
External micrometer	-	10
Test indicator	-	1
Cylinder gauge	-	2
Height gauge	-	2

SPECCIAL EQUIPMENT

ELECTROCHEMICAL DEBURRING



HS-REC

ABRASIVE FLOW MACHINE



VECTOR 200
Media flow rate : 5GPM (19L/m)
Media Pressure min/max
: 200/1440 psi (13.6/98 bar)

ABRASIVE FLOW MACHINE



VECTOR 150
Media flow rate : 5GPM (19L/m)
Media Pressure min/max
: 350/2400 psi (24/163 bar)

GUN-DRILL



SMG G-300
Drilling capacity : $\Phi 3 \sim 24$ mm

GUN-DRILL



SMGK-600CNC
Drilling capacity : $\Phi 3 \sim 24$ mm

BENDING MACHINE



MB42
Max. Radius : 190mm
Min. Radius : $2 \times \Phi OD$ mm
Capacity : 25A SCH.80

HYDRAULIC FORMING MACHINE



SHF-40
Max. diameter x Thickness
: $\Phi 40 \times 2.0$
Length : 20~6,000mm

AUTOFRETTAGE #1



Max. pressure : 2,500bar

AUTOFRETTAGE #2



Max. pressure : 3,500bar

AUTOFRETTAGE #3



Max. pressure : 6,000bar

CUSTOMERS



ABOUT US

Since 2000, we are specialized in the development of advanced antenna technology, including antennas for wireless systems, mobile infrastructure communication, military, satellite and specially customized antennas.

Over 1 Million Antennas

provided by BlueWaveTel to some of the World's Top Telecommunications and Wireless System companies.

SOUTH KOREA

100%

Sole distributor
of national highways
ETCS antenna



JAPAN

#1

ICS Repeater Antenna
Supplier for Japan.



UNITED STATES

2 OF TOP 10

US DAS companies
ongoing R&D
partnership



WHY BLUEWAVETEL

BUSINESS FIELD

- Mobile Infrastructure Communication Antennas: Distributed Antenna System(DAS), Interference Cancellation System(ICS)Antenna, Multi Input Multi Output(MIMO) Antenna
- Wi-Fi Antennas: , Beamforming, Beam Shaping, Access Point Wi-Fi.
- Electronic Toll Collection System(ETCS)Antenna – Since 2005 Over 5,000 points of installation nationwide and abroad : Azerbaijan (60 points)
- Low Profile Array Antenna for Satellite and Military System and Service
- Vehicle Antenna
- Customized Antennas : GPS, GNSS, IoT, Drone
- ODM, OEM and Private Label Antennas

OUR CAPABILITIES

- Short Lead Time
- 100+ years of experience, We have six PhDs in our R&D Team / 10 Patents
- R&D Partnership with top 10 DAS companies
- Customization – Design, Simulation, Development, Testing and Manufacturing
- Consulting capability – Link · Budget and RF Field Experience

GET IN CONTACT

Office : + 82-42-864-0238

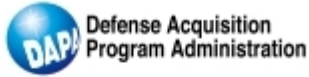
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sales@bluewavetel.com

Korea : #C-218, 219 Daedeok Biz Center, 17 Techno-ro, Yuseong-gu, Daejeon, 34013 – South Korea



CUSTOMERS & PARTNERS



CERTIFICATES



Venture Business Association



R&D Center Certification

PATENTS & PAPERS



· 10 Patents & 15 Papers in Antenna Field

HEAD OFFICE & FACTORY



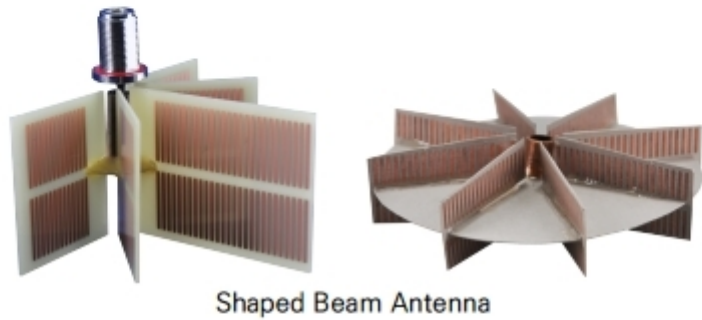
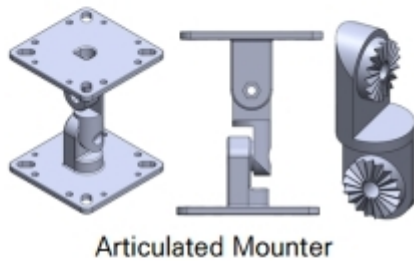
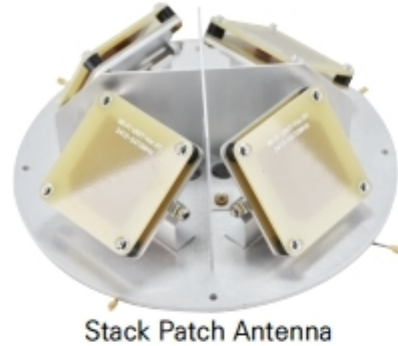
Head Office & R&D Center : Daejeon City



Assembly Line: Gumi City

Wi-Fi Antenna for Access Point

TOPOLOGIES



SPECIFICATIONS

Item	Quad Patch Antenna	Shaped Beam Antenna	Stack Patch Antenna
Frequency		2.40 GHz ~ 2.50 GHz 5.15 GHz ~ 5.85 GHz	
Gain (Typical)	6.0 dBi	Customized	2.0 dBi
Polarization	Vertical		Circular
3 dB Beam Width	80° ±20° @ 2.4GHz 60° ±20° @ 5.8GHz		Az.: Omni Pattern El.: 75° ±10°
Size (mm)	279 × 160 × 30		< ∅180
Remarks	MU-MIMO	Shaped Beam	Ceiling Mount Type MU-MIMO

Antenna for In-Building DAS

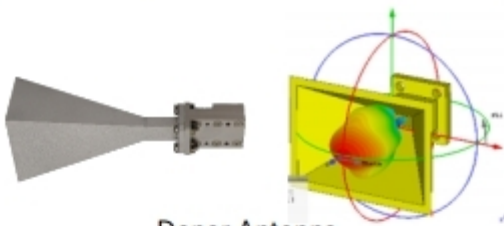
CEILING TYPE ANTENNA



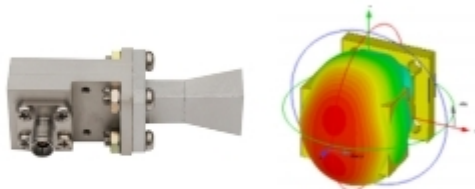
Ceil Mounting Type Antenna

	Specifications
Frequency	0.698 ~ 0.950 GHz, 1.710 ~ 2.690 GHz 3.550 ~ 3.700 GHz
VSWR	< 2.0 : 1
Gain	0.698 ~ 0.950 GHz : 2 ~ 5 dBi 1.710 ~ 2.690 GHz : 2 ~ 5 dBi 3.550 ~ 3.700 GHz : 2 ~ 5 dBi
Polarization	Vertical / Horizontal
3dB BW	Omni
I/O Port Type	N(F)-TBD
Size (mm)	288φ X 1.6 or Depth L mm

HORN TYPE ANTENNA



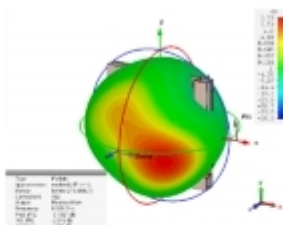
Donor Antenna



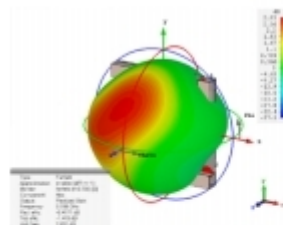
Service Antenna

	Donor	Service
Frequency	27.50 ~29.50 GHz	27.50 ~29.50 GHz
VSWR	< 2.0:1	< 2.0:1
Gain	18 dBi ±2	8 dBi ±2
3dB BW	AZ.	18.0° ±2.0°
	EL.	17.0° ±2.0°
10dB BW	AZ.	32.2°
	EL.	31.8°
Polarization	Vertical	Vertical
I/O Port	WR-28 Waveguide	WR-28 Waveguide
Size(mm)	50 X 40 X 105	21 X 21 X 18

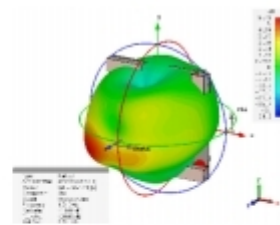
DUAL BAND 4T4R ANTENNA



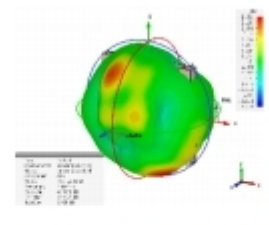
P1 Antenna Gain :
1.7dBi @ 699MHz



P2 Antenna Gain :
2.9dBi @ 756MHz



P3 Antenna Gain :
3.0dBi @ 1710MHz

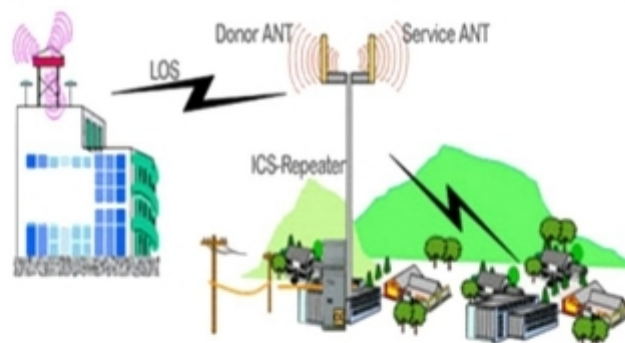


P4 Antenna Gain :
2.7dBi @ 2180MHz

High Isolation Antennas for ICS Repeater

APPLICATIONS

- Interference Cancellation Repeater
- CDMA/GSM/ISM/5G LTE Repeater
- Point to Point/Point to Multi-Point System



TOPOLOGIES



Single/Multi Band Isolation Antenna



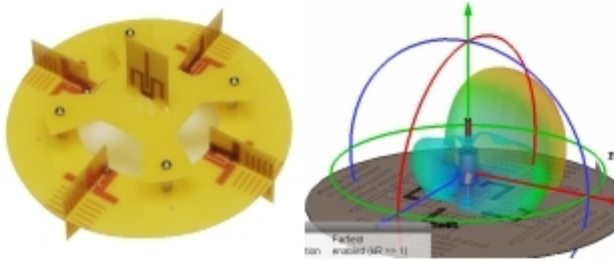
ICS Repeater

SPECIFICATIONS

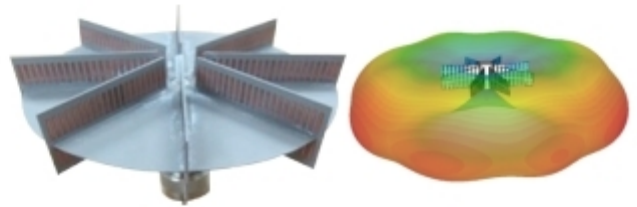
	Single Band Antenna	Multi Band Antenna
Frequency	800MHz / 900MHz / 1.7GHz 1.8GHz / 2.1GHz / 2.3GHz / 3.5GHz	800MHz/900MHz/1.7GHz/1.8GHz/2.1GHz 2.3GHz / 3.5GHz (Dual or Triple Band)
Bandwidth	100MHz~300MHz	Customized
VSWR	< 2.0 : 1	< 2.0 : 1
Gain	0dBi ~ 9dBi	Customized
Polarization	Vertical	Vertical
Isolation	> 50dB	> 50dB ~ 65dB
Input Connector	Customized	Customized
Size (mm)	Customized	Customized

Beam Shaping/Forming Antennas

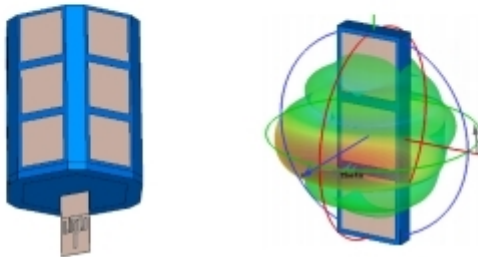
■ Beam Shaping Antenna with H-/V- Beams



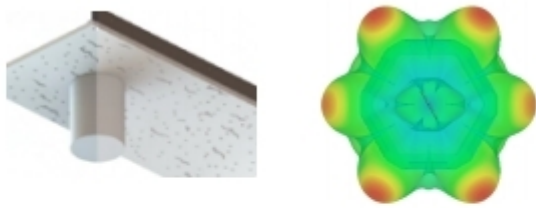
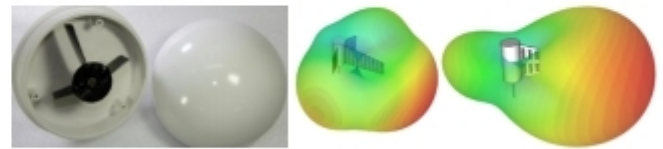
■ Omni Directional High Gain Antenna (OHGA)



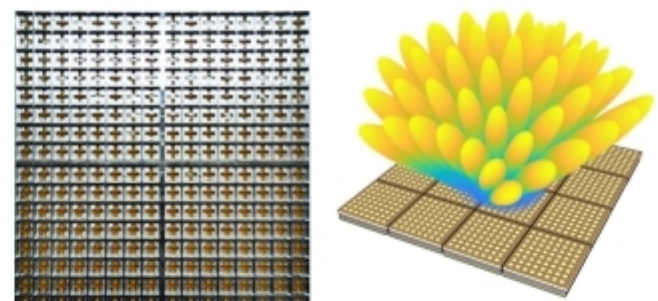
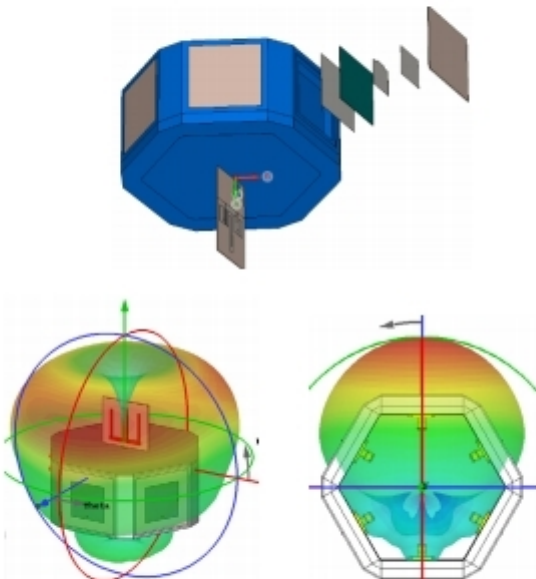
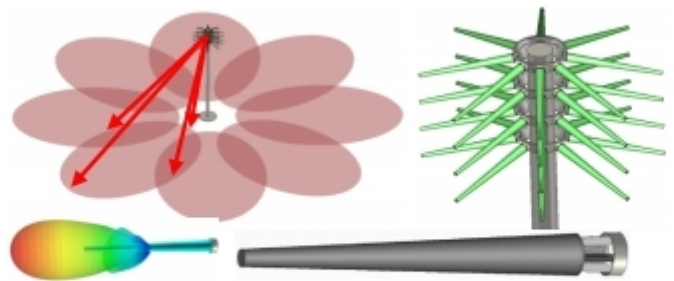
■ N-Directional Antenna



■ Sectoral High Gain Antenna (SHGA)

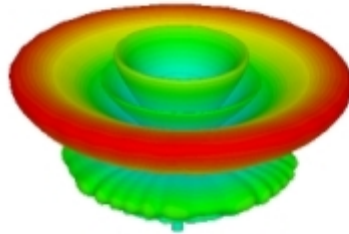


■ Massive MIMO Array Antenna



mm Wave Antenna

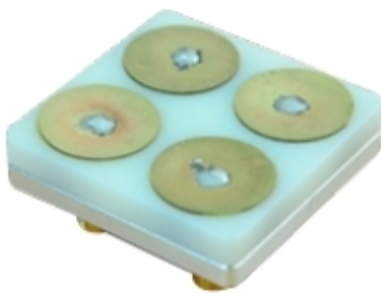
TOPOLOGIES



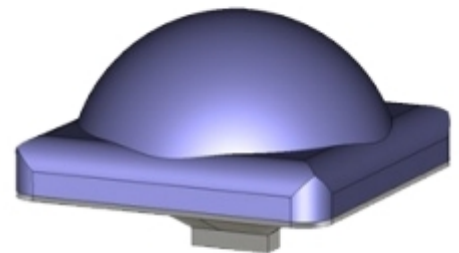
Dipole Element



Co-linear Array Antenna



Quad MIMO Dipole



Multi-Beam Lens Antenna

SPECIFICATIONS

Item	Quad MIMO Dipole	Co-Linear Array Antenna	Multi-Beam Lens Antenna
Frequency	28.0 GHz	25.0 GHz ~ 27.0 GHz	77.0 GHz ~ 79.0 GHz
Gain (Typical)	7.0 dBi	9.0 dBi	32.0 dBi
Polarization	Vertical	Vertical	Customized
3dB Beam Width	16° ±2°	13° ±2°	3.6° (typ.)
Size (mm)	40(W) × 40(L) × 5(H)	∅20, 52	Customized

Planar Array Antenna for High Gain

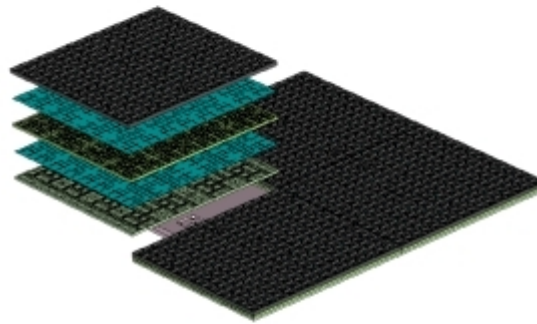
APPLICATIONS

- Fixed/Transportable/Man-Packed Terminal for Satellite Communications
- Wireless Backhaul and Telecommunication
- RADAR System
- Massive MIMO Array Antenna for 5G Mobile Network

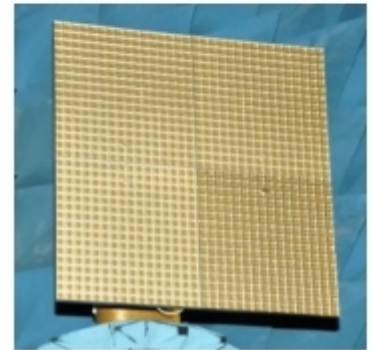
TOPOLOGIES



16×16 Array Antenna



32×32 Array Antenna



32 x 32 Array Antenna

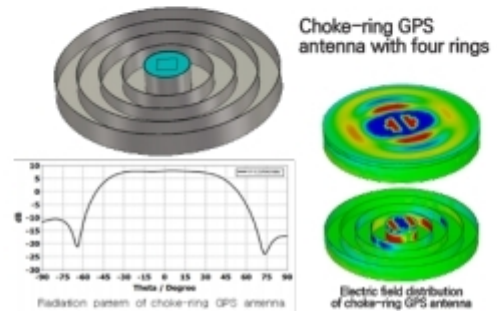
SPECIFICATIONS

Item	16×16 Array Antenna	32×32 Array Antenna
Frequency	X-, Ku-, Ka-Band	X-, Ku-, Ka-Band
Gain	32.0 dBi	37.0 dBi
Polarization	LP (Tx : V, Rx : H)	LP (Tx : V, Rx : H)
3dB Beam Width	> 3.2°@Az. > 3.2°@El.	> 2.0°@Az. > 2.0°@El.
Size(mm)	352 × 352 × 24	645 × 645 × 24
Remarks	Satellite Telecommunication Wireless Backhaul	Man-Pack Terminal

GNSS Antennas

FEATURES

- Wide Beam Pattern/Custom High Gain: > 3.5 dBi
- Great Axial Ratio, 3 dB over full Bandwidth(RHCP)
- Fast Response and Activation by more than 4 GPSs
- Low Power Consumption
- Wide Band (GPS/GLONASS) with LNA Module
- Customer's Interface: Coaxial, RS-XXX

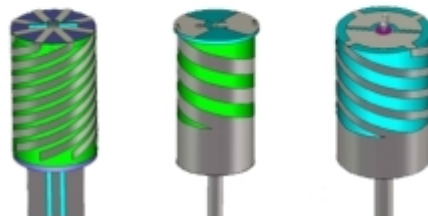


Choke-Ring GNSS Antenna with Flat Topped Radiation Pattern for Anti-Jamming

TOPOLOGIES



Outdoor GNSS Antenna



Helical Type GNSS Antenna



Indoor GNSS Antenna



Anti-Jamming Antenna for GNSS Service



Dual Band Antenna for GNSS+ TETRA

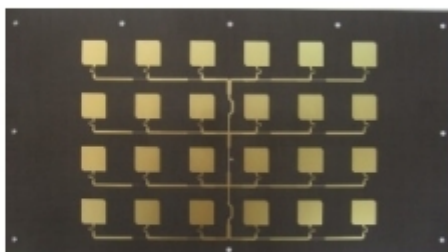
SPECIFICATIONS

Antenna Type	Outdoor GNSS Antenna	Indoor GNSS Antenna
Frequency	1575.42 MHz \pm 1.023 MHz	1575.42 MHz \pm 1.023 MHz
Polarization	RHCP	RHCP
Gain @ Zenith	5.5 dBi (typ.)	5.0 dBi (typ.)
Impedance	50 Ω	50 Ω
Axial Ratio @ Zenith	< 3.0 dB	< 3.0 dB

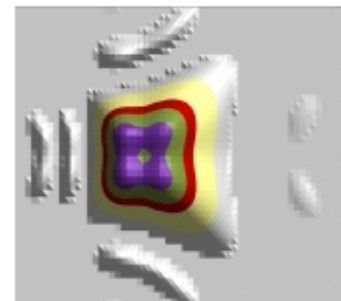
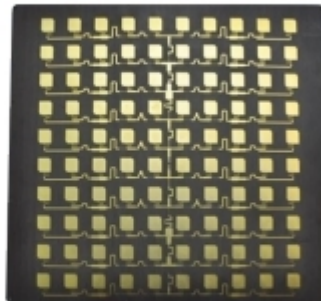
Antennas for Electronic Toll Collection System

TOPOLOGIES

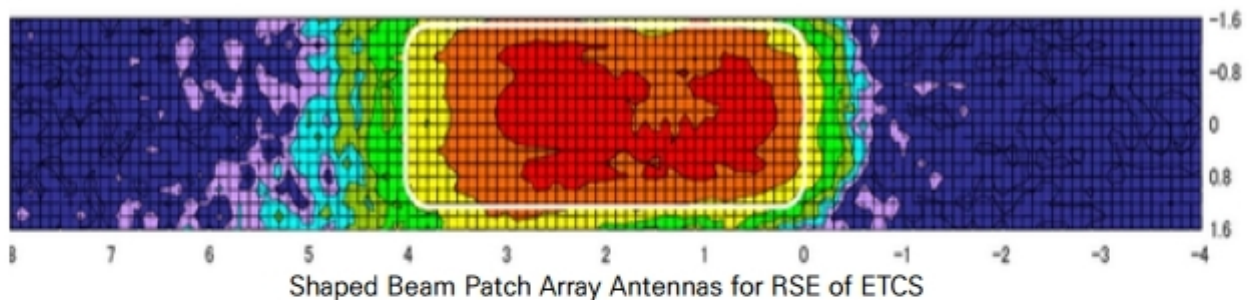
- ETCS: Electronic Toll Collection System
- RSE: Road Side Equipment
- BIS: Bus Information System



Flat top Shaped Beam Antenna for RSE of ETCS (Japan)



Foot print of the RSE Antenna



SPECIFICATIONS

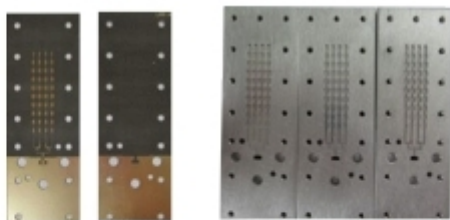
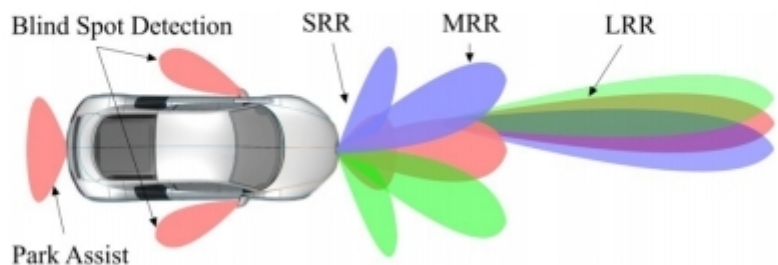
Item	4×6 Patch Array	10×10 Patch Array
Frequency	5.790 GHz ~ 5.850 GHz	5.790 GHz ~ 5.850 GHz
Gain	17.0 dBi	12.0 dBi
Polarization	RHCP	RHCP
3dB Beam Pattern	1st Side Lobe < -20 dBc > 17° @Az. > 22° @El.	1st Side Lobe < -20 dBc > 32° @Az. > 32° @El.
Size(mm)	300 × 160	390 × 340
Remarks	RSE for ETCS	RSE for ETCS

Antennas for a Vehicle Radar Systems

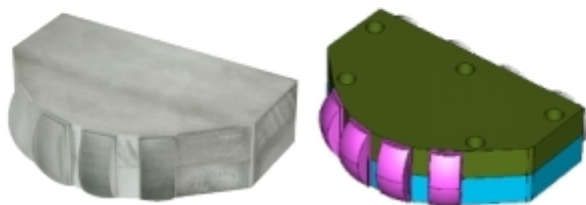
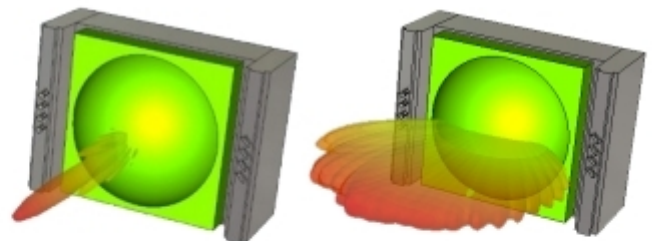
FEATURES

- Topology: Planar Slot Array Antenna by using Air-Strip, and Lens
- Operating Band: 77 GHz ~80 GHz
- Antenna Gain: 14 dBi (Typ.) @ SRR, 23 dBi (Typ.) @ MRR, 27 dBi (Typ.) @ LRR
- Polarization: +45° LP
- Applications: ADAS Systems

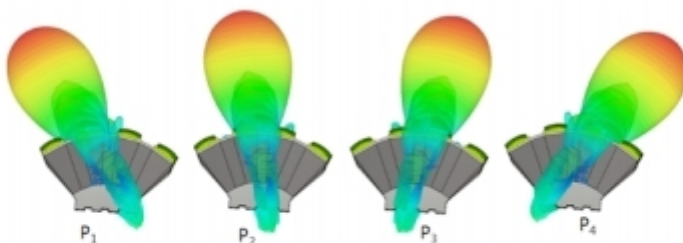
TOPOLOGIES



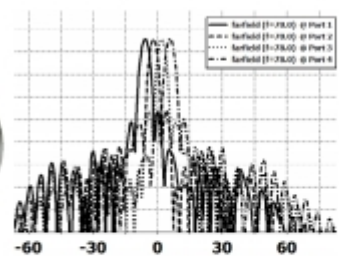
Airstrip Multi Mode Antenna (SRR/LRR)



Wide Range 4 Beams Lens Array



Multi-mode (LRR/SRR) Antenna

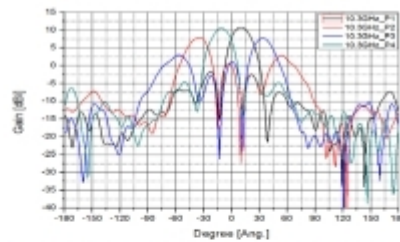
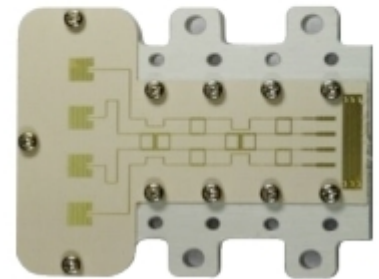
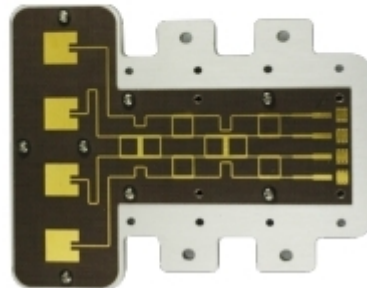
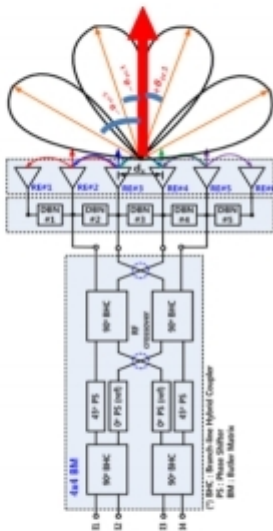


Multi Beam Antennas

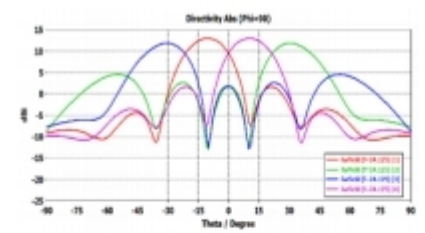
FEATURES

- Topology: 1x4 Microstrip Patch Array Antenna
- Feed Network: Butler Matrix with high Impedance(100 Ω)
- Operating Bands: 2.4 GHz/5.5 GHz/10.0 GHz/24.0 GHz
- No. of Beams: 4 Beams or Beam Steering
- Applications: Car Collision Avoidance, Target Monitoring

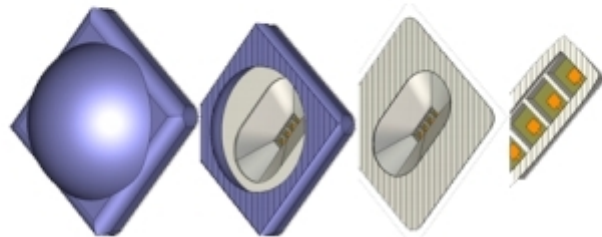
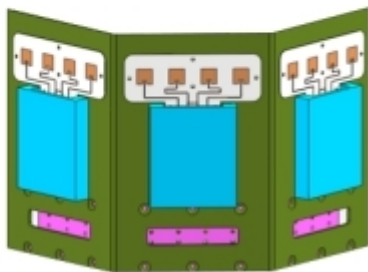
TOPOLOGIES



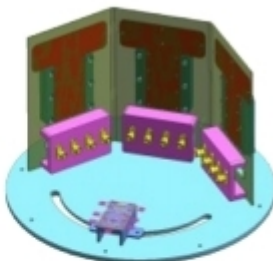
Four Beams Antenna @ 10 GHz



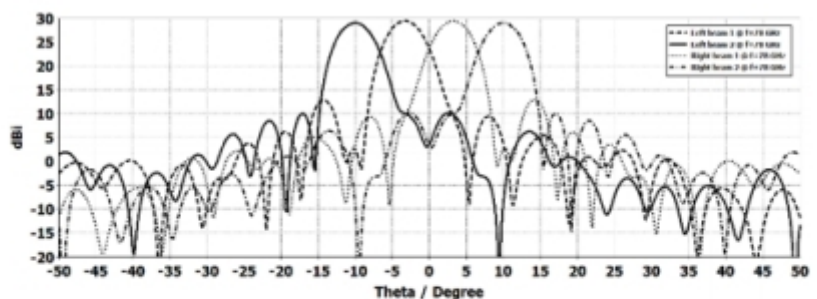
Four Beams Antenna @ 24 GHz



Four Beams Lens Antenna



12 Beams Steering Antenna

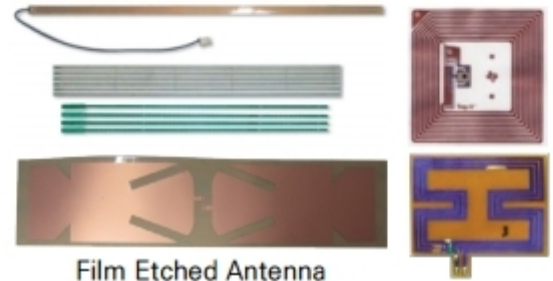
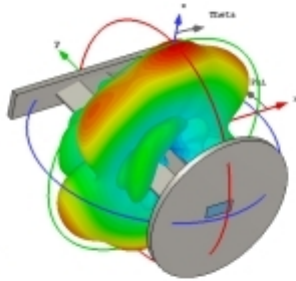


Customized Solution Provider

TOPOLOGIES



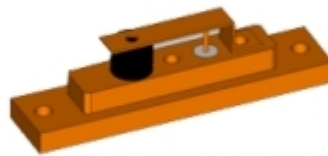
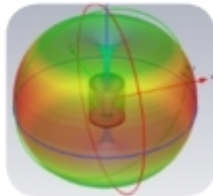
Marine Beacon Antenna



Film Etched Antenna



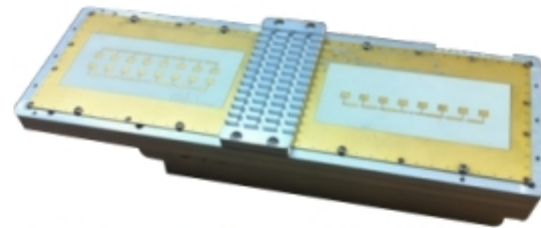
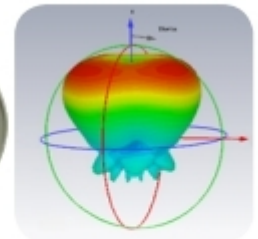
Monopole Antenna(Linear)



Inverted F Type Antenna



Conical Beam Antenna



24 GHz Array Antenna for FMCW RADAR

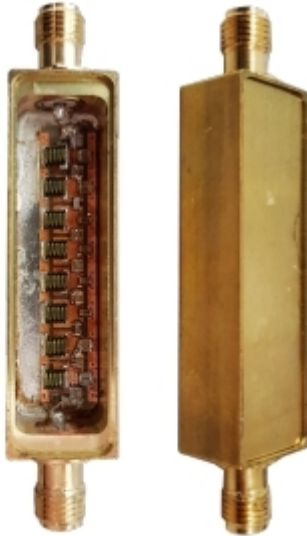
SPECIFICATIONS

Item	Marin Beacon Antenna	Inverted F Type Antenna	Conical Beam Antenna
Frequency	S- / X-Band	L / S-Band	1692.14 MHz \pm 1.0 MHz
Gain(Typical)	2.0 dBi / 5.0 dBi	2.0 dBi	5.0 dBi \pm 2
Polarization	Horizontal	RHCP	RHCP
3dB Beam Pattern	34.0° @ Az. 18.0° @ El.	55.0° @ Az. 78.0° @ El.	Omni-directional @ Az. Conical Beam 45.0° @ El. (peak)
Size(mm)	X-Band : 140 x 160 S-Band : 101 ϕ x 200	14(W) x 58(L) x 17(H)	ϕ 70 x 190
Applications	Marine Navigation	RADAR & Communication	Satellite Radio Reception Service on the Car and Ship
Remarks	2.9GHz ~ 3.1GHz 9.3GHz ~ 9.5GHz	Backward Beam	Low Profile and High Gain

Filter Module

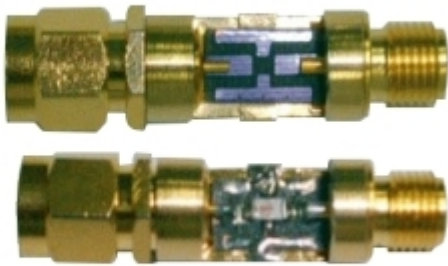
TOPOLOGY AND SPECIFICATIONS

Direct Capacitive coupled Resonator 8-order BPF



Items	Specification
Center frequency	160 MHz
3dB Pass Band	150~170 MHz
Insertion Loss	≤ 5 dB
VSWR	≤ 2.0 : 1 @ 150 ~ 170 MHz
Attenuation	≥ 50dB @ DC ~ 140MHz ≥ 50dB @ 190MHz ~ 1GHz
Size(mm)	44.45 × 12.70 × 10.16 ±0.1
Weight	20g

Various Types of LPF, BPF, and HPF



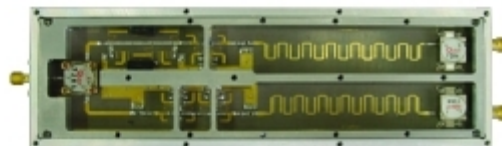
HPF by using Ceramic elements



LPF by using Lumped-elements



Microstrip Line Typed BPF



TRx Duplexer with Tx switch

FEATURES

- Specifications and Design Topology for RF Chain and Link Budget
- Various Types of BPF, LPF, and HPF Technology
- High Quality Products & Low Cost Development

LNA & LNB Module

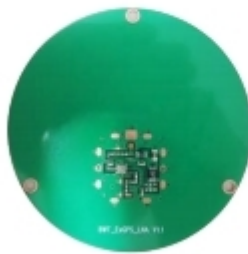
TOPOLOGIES



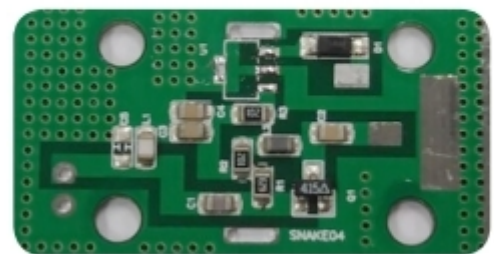
Ku-Band LNB Module



L-Band LNB Module



LNA module for GPS



LNA Module for UHD
TV Reception Antenna

SPECIFICATIONS OF L-BAND LNB

Items	Specification
RF Input Frequency	1692.14 MHz \pm 0.5 MHz
IF Output Frequency	137 MHz
Conversion Gain	60 dB typical
Noise Figure	< 1.5 dB typical @ 1692.14 MHz \pm 0.5 MHz
Image Rejection	> 50 dB
Input / Output Impedance	50 Ω
Local Oscillator Stability	\pm 2.5 ppm
Power Consumption	< 350 mA @ 12Vdc
Size(mm)	< 150 x 100 x 30
Weight	< 0.6 kg
Remark	LNA : Low Noise Amplifier LNB : Low Noise Block

RF Module

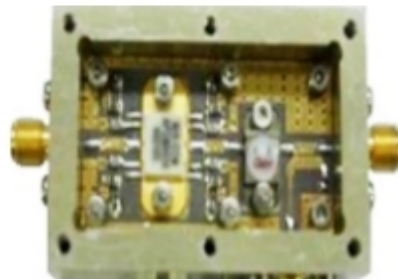
APPLICATIONS

- Transceiver Module
- Power Amplifier
- Customized RF Chain & RF Module
- Up/Down Converter
- TR Limiter
- Power Divider/Combiner

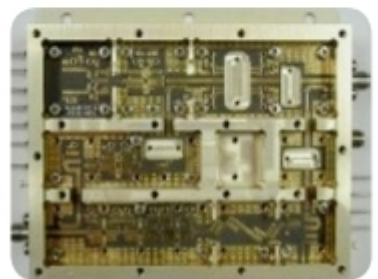
TOPOLOGIES



2.4 GHz RF Transceiver Part
(Front-Side)



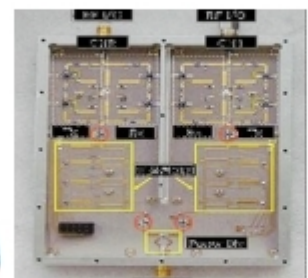
RF Front End Module



Digital Timing Generation Part
(Back-Side)



5.8 GHz LNA & Phase Shifter for Beam Control



FEATURES

- Customized Model & Specification by RF Link Budget
- High Quality Products & Low Cost Development

会社紹介

1. 概要

- －名称：株式会社東園ロール
- －所在地：〒21318 韓国仁川広域市富平区富平北路 379（三山洞）、敷設研究所、等
- －代表：田宇鎮（取締役社長）
- －設立：1976年4月
- －生産品：カレンダー及びエンボス機（繊維・不織布・金属板・フィルム・製紙用）、超音波接着機、ドラム乾燥機、弾性ロール（ペーパーロール・樹脂ロール）、熱ロール（電熱式、電磁式、熱媒式、等）、不織布ロール、レーザ彫刻セラミックロール、等
- －関連会社：(株)J&C、PT. KSO PRIMA ROLL（インドネシア）、上海韓達有限公司

2. 沿革

1976年	東園商事設立（代表 田東埴）
1979年	有望中小企業選定（国民銀行）
1989年	法人設立（株式会社東園ロール設立）
2001年	ISO9001認証
2002年	中国 CHINA TEXTILE MACHINERY（GROUP）と協力締結（不織布関連） 2002年度中小企業庁技術革新開発事業遂行（課題名：超音波接着機）
2003年	国務総理賞受賞（田東埴代表）
2004年	輸出有望中小企業選定（中小企業輸出支援センター） 2004年度中小企業庁技術革新開発事業遂行（課題名：高温誘導発熱ロール）
2005年	日本住江織物株式会社と技術及び業務提携（カーシート関連） 輸出企業化事業選定（中小企業庁） 敷設研究所設立（韓国産業技術振興協会登録）
2006年	ベンチャー企業認証（中小企業庁） 紹興東園機械有限公司設立（独資工場） インドネシア工場設立（5社合弁：カンセンエキスパンダーロール、尾高ゴム、等） エネルギー管理公団課題選定（課題名：製紙用サイズプレス）
2007年	技術革新形中小企業（INNO-BIZ）認証（中小企業庁） 有望中小企業選定（仁川広域市）
2008年	ISO14001 認証 部品・素材専門企業確認（知識経済部） 繊維産業ストリム間協力技術開発事業選定（参与企業、課題名：車両用内装材）
2009年	2010年度中小企業庁技術革新開発事業遂行（課題名：鉄板エンボス機） 韓国生産技術研究院パートナー企業
2012年	CE 認証
2013年	経営革新形中小企業（MAIN-BIZ）認証（中小企業庁） ビジョン企業選定（仁川広域市）
2016年	米国電子電気学会（IEEE）及び日本電気学会（IEEJ）で論文発表

3. 取引先

3.1 国内 (約300社)

業界	会社名
フィルム /印刷	三星電機、三星 SDI、LG 電子、LG 化学、斗山電子、モナリザー、象牙フロンテック、東友ケミカル、REFLOMAX、鮮京ホログラム、ロッテショッピング、柳韓 KIMBERLY、SKC、韓国輸出包装、泰林包装、大英包装、中央日報、等
化学	三洋ゼネックス、正元化学、宇真産業、世韓産業、等
製紙	ハンソル製紙、韓国製紙、新湖製紙、南韓製紙、啓星製紙、豊満製紙、三華製紙、新武林製紙、武林製紙、洪元製紙、世林製紙、韓昌製紙、双龍製紙、パピテック、国一製紙、シンドリコー、等
不織布	韓国バイリン、Yuhan-Kimberly、大宇インターナショナル、伯産化繊、三信紡織、韓国物産、東一産業、コーロン GLOTECH、全紡産業、WELCRON、大洋産業、成進、柳韓グリーンテック、光明不織布、Clean & Science、等
繊維	熊津ケミカル、コーロン、一信産業、美光染工、甲乙紡績、忠南紡績、未来繊維、太王染工、東星繊維、PAKA RGB、世煥繊維、CH 産業、新興染織、太光繊維、進進、高麗 TEX、等
自動車	現代自動車、大宇自動車、起亜自動車、三星自動車、等
鉄鋼	浦港製鉄、光陽製鉄、ネオスチール、金兒スチール、IDH、等
大学	国立ソウル大学交、国立忠南大学交、建国大学交、龍仁松潭大学、等
政府機関	韓国科学技術研究院、韓国生産技術研究院、韓国造幣公社、等

3.2 海外 (約20カ国)

国名	会社名
日本 (約30社)	セーレン、小松精練、日清紡、TBカワシマ、トヨタ紡織、JNCファイバース、東レ、帝人、住江織物、ユニチカエヌピークロス、カイハラ産業、ハクサン染工、東洋紡、テックワン、アキレス、トヨタ車体、東洋クロス、フクセン、東洋染工、日本バイリン、金井重要、倉敷繊維加工、ツヤトモ、ダナックス、シンコー工業、丸昌夏山フェルト、ヒロタニ、尾張精染、日吉染業、旭化成、等
中国 (約60社)	日系会社：東レ、帝人、住江織物、川島織物、ツジトミ、等 韓国会社：大宇製紙、(株)HUVIS、(株)李朝化繊、(株)甲乙紡績、等 Zhejiang Yataiグループ、Hefengグループ、等
その他	アメリカ、フランス、タイ、台湾、イラン、インドネシア、トルコ、パキスタン、ベトナム、フィリピン、エジプト、メキシコ、インド、スリランカ、マレーシア、バングラデシュ、等

4. 代表者紹介

- －名前：田宇鎮（個人ホームページ参照、www.waseda.pe.kr）
- －昭和 41 年生れ
- －専門：電磁界応用機器、リニアモータ、電気自動車、等
- －関心分野：ROLL TO ROLL 機器（カレンダー、エンボス機、ラミネーター、コーター）
誘導発熱ロール、機能性不織布及びフィルム、二次電池、等
- －研究活動
論文・国際会議（31 件）、講演・国内発表（31 件）、特許・実用新案（7 件）、
日本特許（2 件）、意匠・商標・著作権（18 件）、その他（5 件）
- －学歴

1998 年 3 月	早稲田大学理工学研究科電気電子情報工学科博士課程終了、博士（工学） （※日本文部省国費奨学生、国費番号：965128）
1995 年 3 月	早稲田大学理工学研究科電気電子情報工学科修士課程終了（東京都）
1991 年 2 月	建国大学校工学部電気工学科卒業（ソウル市）

－経歴

2000. 3～現在	株式会社東園ロール入社
2000. 7～2001. 3	建国大学校電力電子新技術研究センター 嘱託研究員（非常勤）
2000. 4～2001. 3	早稲田大学理工学研究センター 客員研究員（非常勤）
2000. 3～2000. 8	漢陽大学校頭脳韓国(BK)21 研究員（常勤）
1999. 9～2000. 3	（財）日本航路標識協会 自然エネルギーを利用した航路標識調査研究委員会 作業部委員長
1998. 4～2000. 3	早稲田大学理工学研究科 助手（常勤）
1998. 1～2000. 3	（社）日本電気学会 リニア電磁駆動装置設計技術の高度化調査専門委員会 幹事補佐