

internal antennae modules

research • development • production www.2j-antennae.com

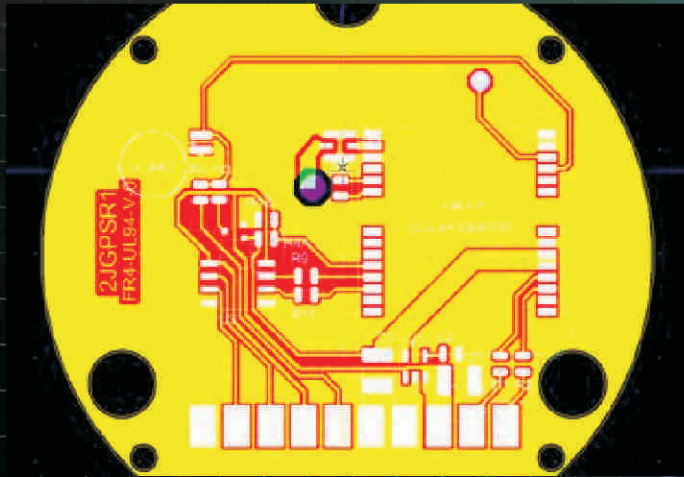




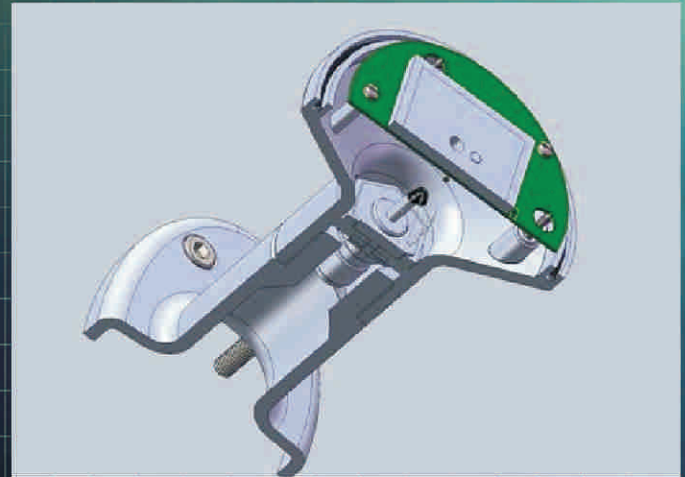
2J is an established company providing antenna solutions for the telecommunication industry. These solutions can be off-the-shelf antennae, or fully customised products to meet the project requirements. Specialising in antenna for use in GSM, cellular data transmission, GPS, Galileo, Glonass and other telematics applications, we are now expanding into new markets such as marine and rail. Our design team employ a wide range of engineering techniques in order to fine tune product performance. Three-dimensional modelling, circuit simulations, RF simulations, rapid prototyping and PCB prototyping aid the design

process, while a range of modern test procedures verify antenna performance.

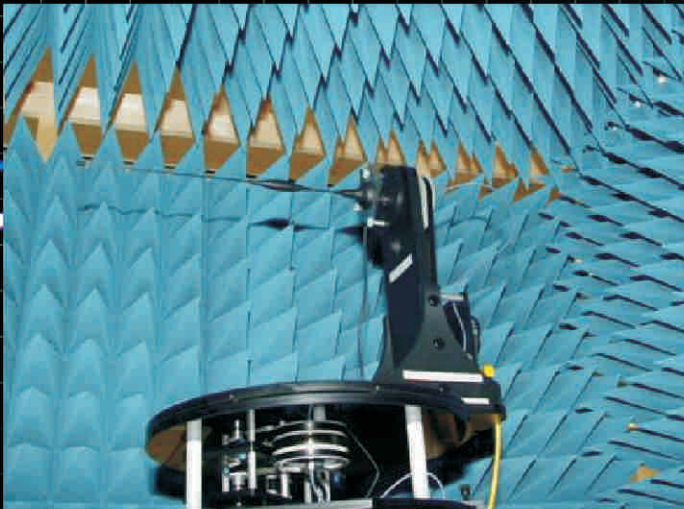
Antenna verification is performed at our UK based test facility which provides network analysis, spectrum analysis, two dimensional and three dimensional spherical radiation patterns, as well as many other RF measurements. Antennae production is within the Slovak Republic. 2J's location at the heart of Central Europe, takes advantage of significant regional investment in industry and infrastructure. Slovakia is fast becoming a leading manufacturer within the European Union, particularly in automotive and other engineering sectors. 2J also provide third party consultancy services, such as project analysis, feasibility studies and antenna evaluations. In addition to this, we can provide on-site evaluations to ensure most suitable solutions are found for each telecommunication requirement. 2J employ highly qualified workers and sub-contractors, as well as selecting only reputable and reliable suppliers. Our dedication to providing quality antenna solutions has led to us supplying products to esteemed customers such as T-Mobile, Sagem, Porsche as well as many others.



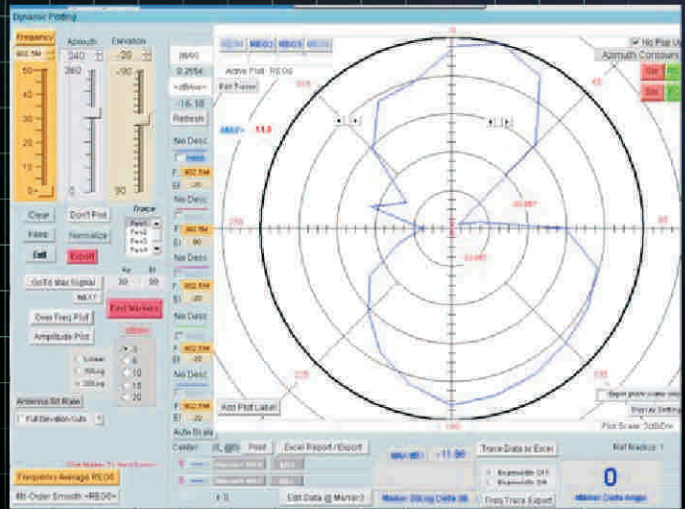
PCB CAD



3D MODELLING

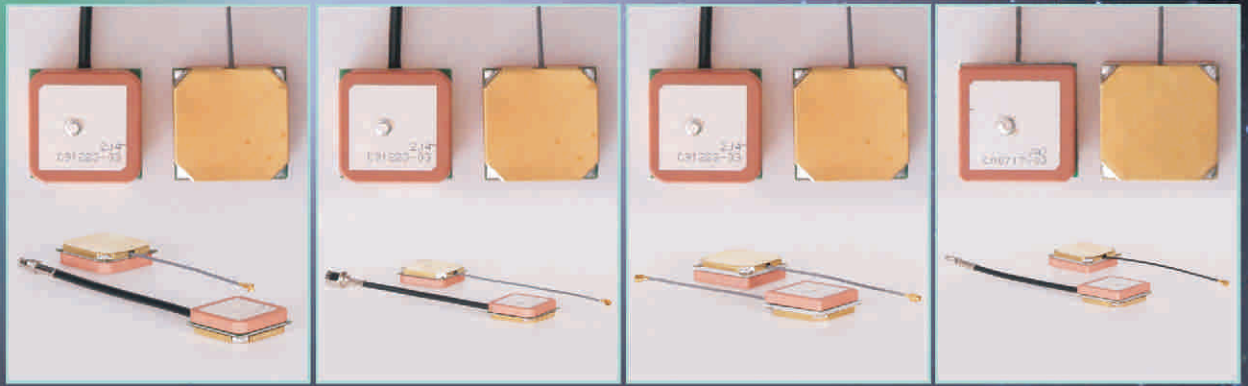


SPHERICAL RADIATION PATTERN MEASUREMENT



2D RADIATION PATTERN

gps antennae



2J401FGD

2J401GD

2J402FS

2J402S

FREQUENCY

GPS/GLONASS

1572 - 1610MHz

23dB at 3V, 24dB at 5V

GPS/GLONASS

1572 - 1610MHz

25dB at 3V, 26dB at 5V

1575.42MHz

1575.42MHz

LAN GAIN

23dB at 3V, 24dB at 5V

25dB at 3V, 26dB at 5V

26dB

26dB at 3V, 28dB at 5V

VOLTAGE SUPPLY

2.7V - 5.5V

2.7V - 5.5V

2.7V - 5.5V

2.7V - 5.5V

CURRENT

15mA - 25mA

15mA - 25mA

15mA - 25mA

15mA - 25mA

POWER (MAX.)

138mW

138mW

138mW

138mW

NOMINAL IMPEDANCE

50 Ohms

50 Ohms

50 Ohms

50 Ohms

NOISE FIGURE

1.15dB

1.15dB

1.15dB

1.15dB

POLARIZATION

RHCP

RHCP

RHCP

RHCP

SIZE

38 x 34 x 13.7mm

38 x 34 x 13.7mm

26 x 26 x 5.5mm

26 x 26 x 8.6mm

SIZE OF CERAMIC PATCH

25 x 25 x 4mm

25 x 25 x 4mm

25 x 25 x 4mm

25 x 25 x 4mm

FILTER

SAW/DIODE

NO/DIODE

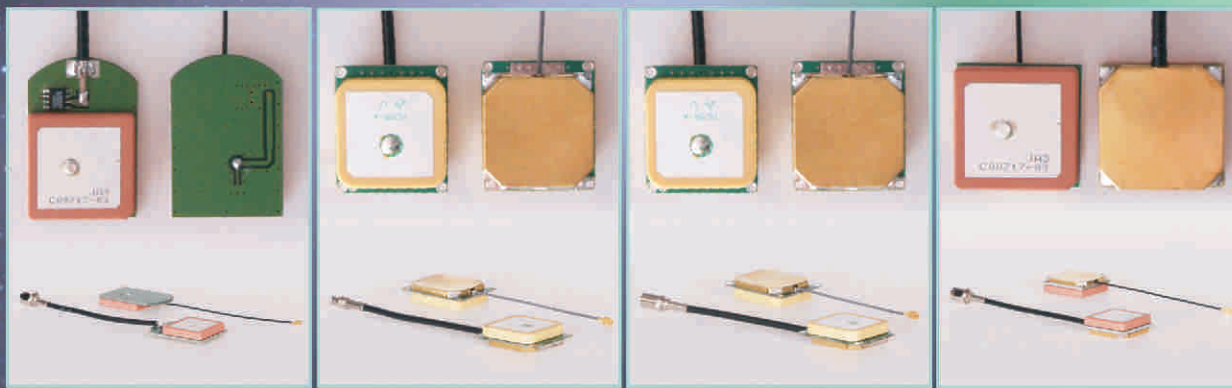
CERAMIC FILTER

NO



● CABLE AND CONNECTOR UPON REQUEST

gps antennae



2J403U

2J4040S

2J404S

2J405FS

FREQUENCY

1575.42MHz

1575.42MHz

1575.42MHz

1575.42MHz

LAN GAIN

27dB

16dB at 5V

32dB at 5V

16dB

VOLTAGE SUPPLY

2.7V - 5.5V

1.8V - 5V

1.8V - 5V

2.7V - 5.5V

CURRENT

20mA

3mA(1.8V), 7mA(3.3V),
12mA(5V)
60mW

5mA(1.8V), 13mA(3.3V),
25mA(5V)
125mW

15mA - 25mA

POWER (MAX.)

138mW

60mW

125mW

138mW

NOMINAL
IMPEDANCE

50 Ohms

50 Ohms

50 Ohms

50 Ohms

NOISE FIGURE

1.15dB

1.5dB

1.5dB

1.15dB

POLARIZATION

RHCP

RHCP

RHCP

RHCP

SIZE

38 x 26 x 6.4mm

26 x 30 x 8.4mm

26 x 30 x 8.1mm

26 x 26 x 9.5mm

SIZE OF
CERAMIC PATCH

25x25x4mm

25x25x4mm

25x25x4mm

25x25x4mm

FILTER

NO

NO

NO

CERAMIC FILTER



● CABLE AND CONNECTOR UPON REQUEST

gps antennae



2J405S

2J407FS

2J407S

2J408S

FREQUENCY

1575.42MHz

1575.42MHz

1575.42MHz

GPS/GLONASS
1572 - 1610 MHz
25dB at 3V, 27dB at 5V

LAN GAIN

18dB

10dB

12dB

VOLTAGE SUPPLY

2.7V - 5.5V

2.7V - 5.5V

2.7V - 5.5V

2.7V - 5.5V

CURRENT

15mA - 25mA

15mA - 25mA

15mA - 25mA

15mA - 25mA

POWER (MAX.)

138mW

138mW

138mW

138mW

NOMINAL
IMPEDANCE

50 Ohms

50 Ohms

50 Ohms

50 Ohms

NOISE FIGURE

1.15dB

1.15dB

1.15dB

1.15dB

POLARIZATION

RHCP

RHCP

RHCP

RHCP

SIZE

26 x 26 x 8.6mm

26 x 26 x 8.6mm

26 x 26 x 8.6mm

38 x 34 x 13.7mm

SIZE OF
CERAMIC PATCH

25 x 25 x 4mm

25 x 25 x 4mm

25 x 25 x 4mm

25 x 25 x 4mm

FILTER

NO

CERAMIC FILTER

NO

NO



FLEET
MANAGEMENT



MARINE



M2M &
IOT BANDS



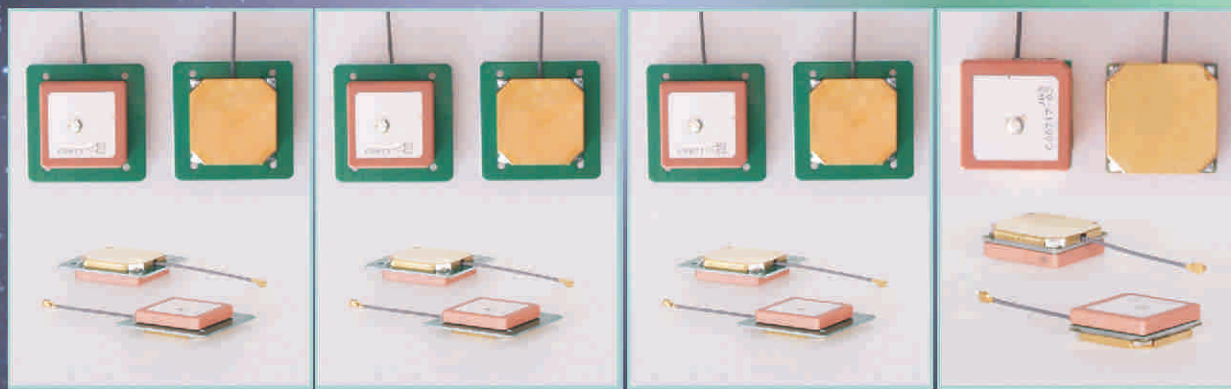
MOBILE
COMMUNICATION



EMERGENCY
SERVICES

● CABLE AND CONNECTOR UPON REQUEST

gps antennae



2J408FS-LP

2J408FS

2J408S-LP

2J409S

FREQUENCY

GPS/GLONASS

GPS/GLONASS

GPS/GLONASS

1575.42MHz

LAN GAIN

1572 - 1610MHz
23dB at 3V, 24dB at 5V

1572 - 1610MHz
23dB at 3V, 24dB at 5V

1572 - 1610MHz
25dB at 3V, 27dB at 5V

3 - 5 dBiC

VOLTAGE SUPPLY

2.7V - 5.5V

2.7V - 5.5V

2.7V - 5.5V

PASSIVE

CURRENT

15mA - 25mA

15mA - 25mA

15mA - 25mA

-

POWER (MAX.)

138mW

138mW

138mW

-

NOMINAL IMPEDANCE

50 Ohms

50 Ohms

50 Ohms

50 Ohms

NOISE FIGURE

1.15dB

1.15dB

1.15dB

-

POLARIZATION

RHCP

RHCP

RHCP

RHCP

SIZE

35 x 35 x 8mm

38 x 34 x 13.7mm

35 x 35 x 8mm

25 x 25 x 8mm

SIZE OF CERAMIC PATCH

25 x 25 x 2mm

25 x 25 x 4mm

25 x 25 x 2mm

25 x 25 x 4mm

FILTER

SAW

SAW

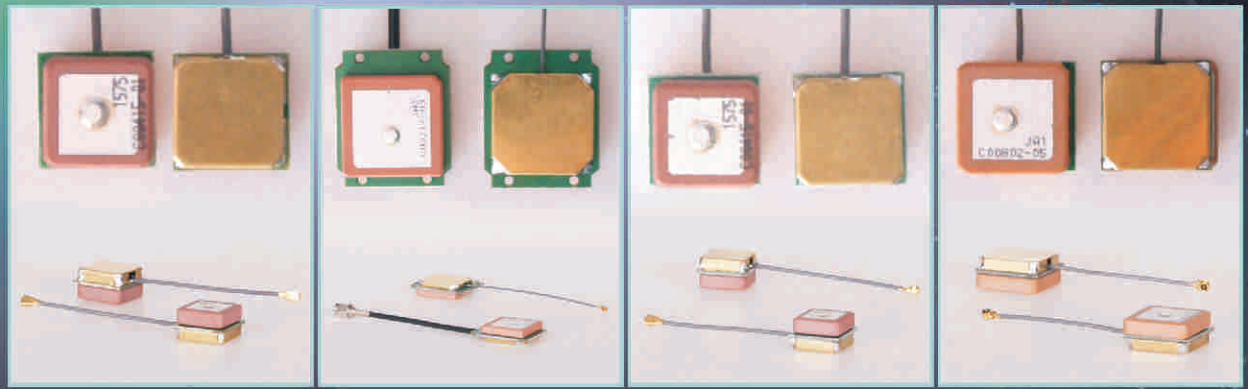
NO

NO



● CABLE AND CONNECTOR UPON REQUEST

gps antennae



2J434S

2JEOM

2JM010

2JM011

FREQUENCY

1575.42MHz

1575.42MHz

1575.42MHz

1575.42MHz

LAN GAIN

24dB at 3V, 26dB at 5V

26dB at 3V, 28dB at 5V

18dB

18dB

VOLTAGE SUPPLY

2.7V -5.5V

2.7V - 5.5V

2.7V - 3.3V

2.7V - 3.3V

CURRENT

15mA - 25mA

15mA - 25mA

4.5mA

4.5mA

POWER (MAX.)

138mW

138mW

15mW

15mW

NOMINAL
IMPEDANCE

50 Ohms

50 Ohms

50 Ohms

50 Ohms

NOISE FIGURE

1.15dB

1.15dB

1.3dB

1.3dB

POLARIZATION

RHCP

RHCP

RHCP

RHCP

SIZE

14 x 14 x 8.1mm

34.7 x 29 x 8mm

14 x 14 x 8.6mm

18 x 18 x 8.6mm

SIZE OF
CERAMIC PATCH

13 x 13 x 4mm

25 x 25 x 4mm

13 x 13 x 4mm

18 x 18 x 4mm

FILTER

NO

NO

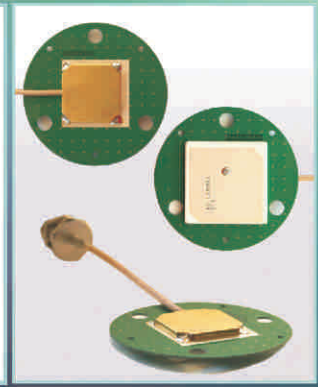
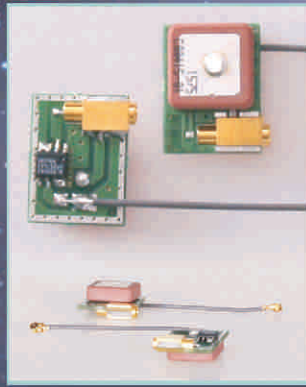
NO

NO



● CABLE AND CONNECTOR UPON REQUEST

gps antennae



2JM012

2JM030

2JM040

2J900F

FREQUENCY

1575.42MHz

1575.42MHz

1575.42MHz

GPS/GLONASS

LAN GAIN

24dB at 3V, 26dB at 5V

27dB

18 dB

1572 - 1610MHz
23dB at 3V, 24dB at 5V

VOLTAGE SUPPLY

2.7V - 5.5V

2.7V - 5.5V

2.7V - 3.3V

2.7V - 5.5V

CURRENT

15mA - 25mA

15mA - 25mA

9mA at 3V

15mA - 25mA

POWER (MAX.)

138mW

138mW

30mW

138mW

NOMINAL
IMPEDANCE

50 Ohms

50 Ohms

50 Ohms

50 Ohms

NOISE FIGURE

1.15dB

1.15dB

2dB

1.15dB

POLARIZATION

RHCP

RHCP

RHCP

RHCP

SIZE

20 x 15 x 8.1mm

18 x 18 x 9.3mm

13 x 7 x 0.8mm

AVERAGE 62mm

SIZE OF
CERAMIC PATCH

13 x 13 x 4mm

18 x 18 x 4mm

13 x 13 x 4mm

35 x 35 x 3mm

FILTER

NO

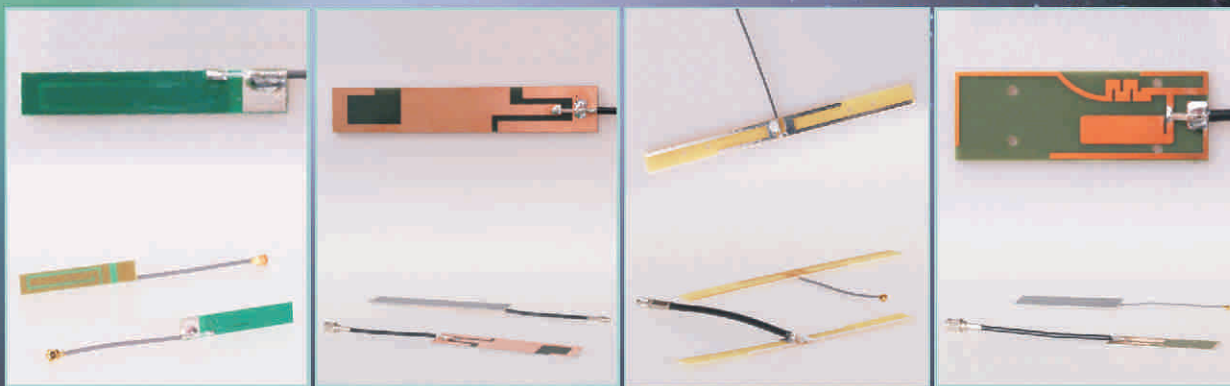
NO

NO

SAW



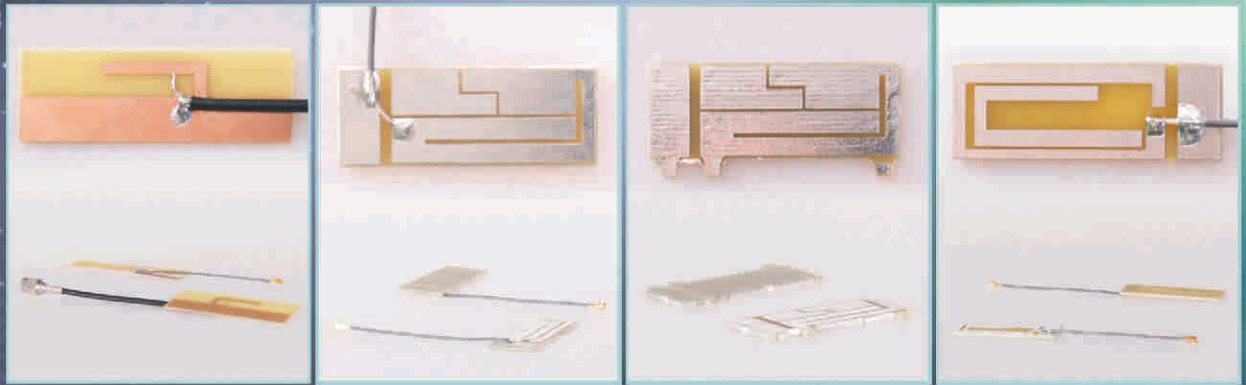
● CABLE AND CONNECTOR UPON REQUEST



	2J0X5	2J500PCB	2J510PCB	2J550PCB
FREQUENCY	GSM 900, 1800MHz PCN 1.9 GHz UMTS 2.1GHz BLUETOOTH 2.4GHz	TETRA 380 - 500MHz AMPS 824 -894MHz GSM 900,1800MHz PCN 1.9GHz UMTS 2.1GHz BLUETOOTH 2.4GHz	AMPS 824 -894MHz GSM 900,1800MHz PCN 1.9GHz UMTS 2.1GHz BLUETOOTH 2.4GHz	AMPS 824 -894MHz GSM 900,1800MHz PCN 1.9GHz UMTS 2.1GHz BLUETOOTH 2.4GHz
GAIN	0dBi	2.2dBi	2.14dBi	0dBi
POWER (MAX.)	25W	25W	25W	25W
NOMINAL IMPEDANCE	50 Ohms	50 Ohms	50 Ohms	50 Ohms
VSWR	<2:1	<2:1	<2:1	<2:1
POLARIZATION	VERTICAL	VERTICAL	HORIZONTAL	VERTICAL
SIZE	35 x 6 mm	20 x 115 x 1.2mm	11-15 x 123 x 5mm	62 x 22 x 0.8mm
WORKING TEMPERATURE	-40 °C to + 85 °C	-40 °C to + 85 °C	-40 °C to + 85 °C	-40 °C to + 85 °C



● CABLE AND CONNECTOR UPON REQUEST



2J555PCB

2JMAS01

2JMAS01A

2JMAS04

FREQUENCY

BLUETOOTH/WIFI
2.4 - 2.5GHz

AMPS 824 -894MHz
GSM 900,1800MHz
PCN 1.9GHz
UMTS 2.1GHz
BLUETOOTH 2.4GHz/
5GHz/5.8GHz

AMPS 824 -894MHz
GSM 900,1800MHz
PCN 1.9GHz
UMTS 2.1GHz
BLUETOOTH 2.4GHz/
5GHz/5.8GHz

GSM 900,1800MHz

GAIN

3dBi

0dBi

0dBi

0dBi

POWER (MAX.)

25W

25W

25W

25W

NOMINAL IMPEDANCE

50 Ohms

50 Ohms

50 Ohms

50 Ohms

VSWR

<1.5:1

<2:1

<2:1

<2:1

POLARIZATION

VERTICAL

HORIZONTAL/VERTICAL

HORIZONTAL/VERTICAL

HORIZONTAL/VERTICAL

SIZE

25 x 72 x 0.8mm

42 x 16 x 1.6mm

42 x 19 x 1.6mm

42 x 15 x 1.6mm

WORKING TEMPERATURE

-40 °C to + 85 °C

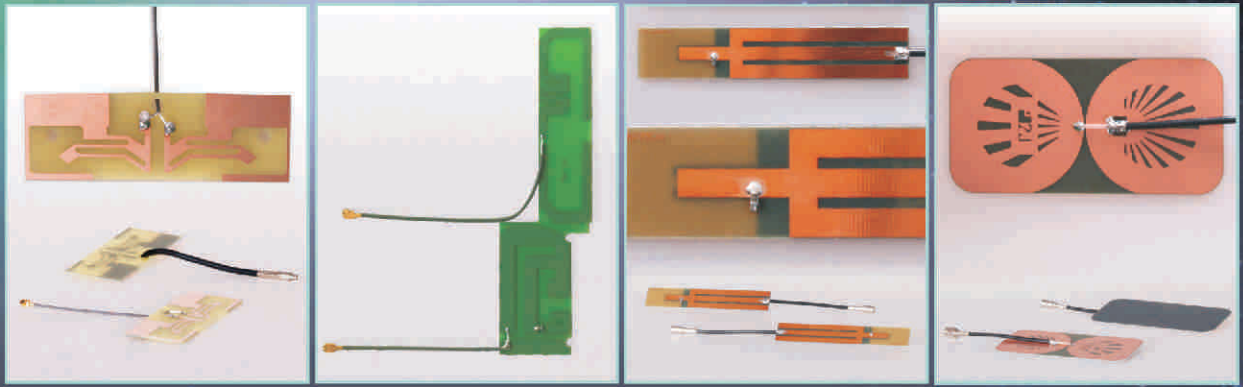
-40 °C to + 85 °C

-40 °C to + 85 °C

-40 °C to + 85 °C



● CABLE AND CONNECTOR UPON REQUEST



2JDGACT01

2JRS01

2J562PCB

2J540PCB

FREQUENCY

AMPS 824 -894MHz
GSM 900,1800MHz
PCN 1.9GHz
UMTS 2.1GHz
BLUETOOTH 2.4GHz

ISM 868MHz
GSM 900,1800MHz

AMPS 824 -894MHz
GSM 900,1800MHz
PCN 1.9GHz
UMTS 2.1GHz
BLUETOOTH 2.4GHz

750 MHz to 2.4GHz

GAIN

0dBi

2.14dBi(ISM), 0dBi(GSM)

2dBi

2.14dBi

POWER (MAX.)

25W

25W

25W

35W

NOMINAL IMPEDANCE

50 Ohms

50 Ohms

50 Ohms

50 Ohms

VSWR

<2:1

<2:1

<2:1

<2:1

POLARIZATION

HORIZONTAL

HORIZONTAL

HORIZONTAL

VERTICAL

SIZE

75 x 25 x 1.2mm

28 x 100 x 0.8mm

105 x 20 x 1.2mm

105 x 52 x 1.2mm

WORKING TEMPERATURE

-40 °C to + 85 °C

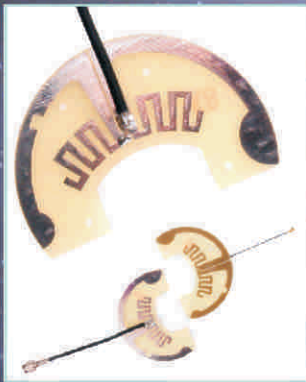
-40 °C to + 85 °C

-40 °C to + 85 °C

-40 °C to + 85 °C



● CABLE AND CONNECTOR UPON REQUEST



2J620PCB

FREQUENCY

GSM 900
PCN 1.8GHz
UMTS 2.1GHz
BLUETOOTH 2.4GHz

GAIN

2.14dBi

POWER (MAX.)

25W

NOMINAL IMPEDANCE

50 Ohms

VSWR

<2:1

POLARIZATION

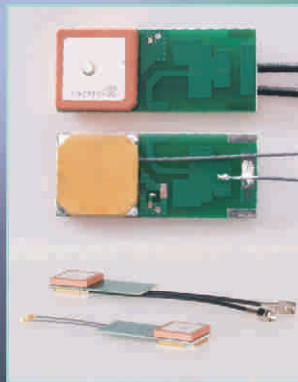
HORIZONTAL/VERTICAL

SIZE

68 x 4.6 x 1.1mm

WORKING TEMPERATURE

-40 °C to + 85 °C



2J425PCB

FREQUENCY

AMPS 824 - 894MHz
GSM 900,1800MHz
PCN 1.9GHz
UMTS 2.1GHz/GPS
27dB

GAIN

VOLTAGE SUPPLY

2.8 - 5.5 V

CURRENT

15mA - 25mA

POWER (MAX.)

138mW

NOMINAL IMPEDANCE

50 Ohms

NOISE FIGURE

1.15dB

POLARIZATION

GSM: HORIZONTAL
GPS: RHCP

SIZE

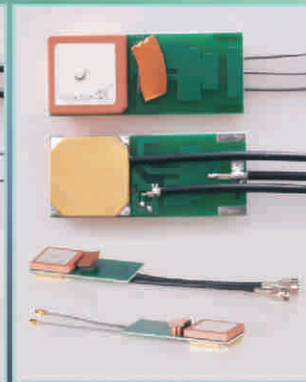
62 x 26 x 1.6mm

SIZE OF CERAMIC PATCH

25 x 25 x 4mm

FILTER

NO



2J426PCB

AMPS 824 - 894MHz
GSM 900,1800MHz,PCN
1.9GHz, UMTS 2.1GHz
BLUETOOTH 2.4GHz/GPS
27dB

2.8 - 5.5 V

15mA - 25mA

138mW

50 Ohms

1.15dB

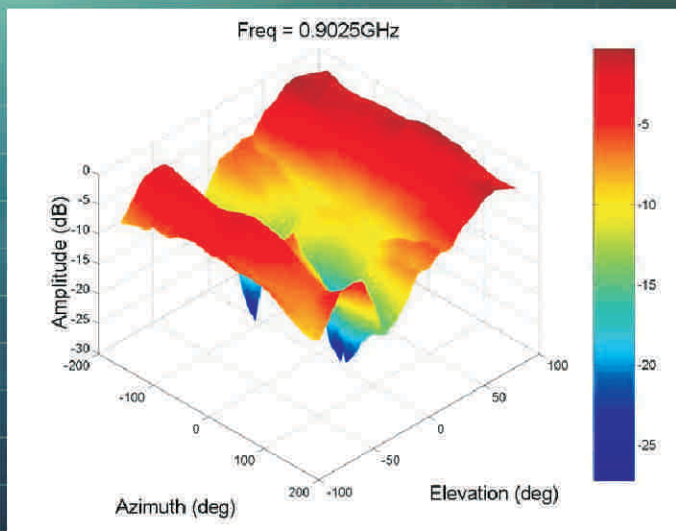
GSM: HORIZONTAL
WIFI: HORIZONTAL
GPS: RHCP
62 x 26 x 8mm

25 x 25 x 4mm

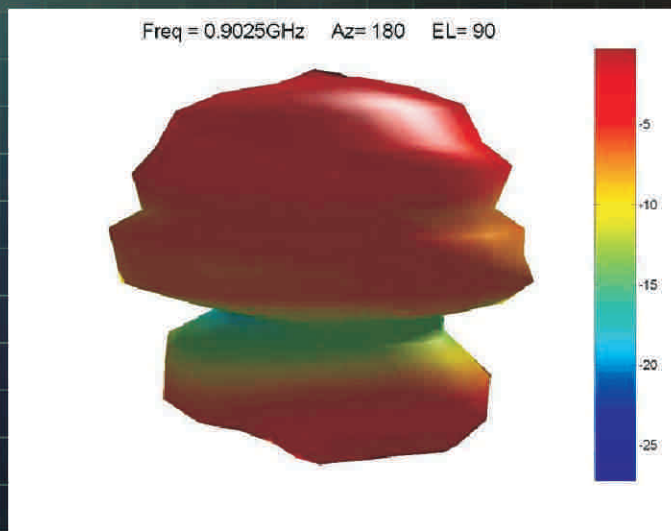
NO



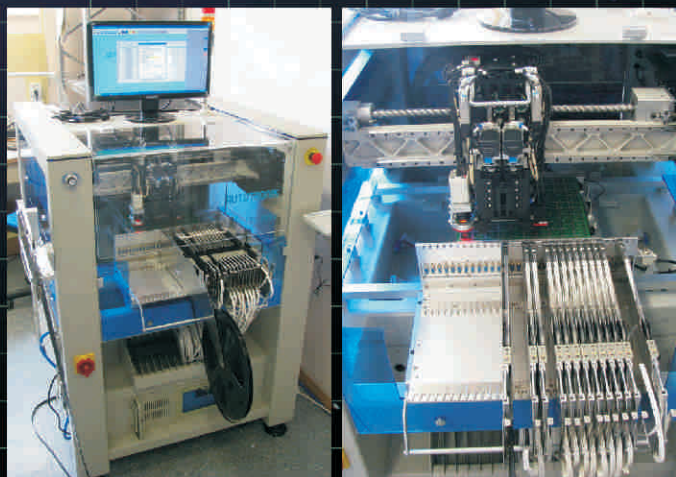
● CABLE AND CONNECTOR UPON REQUEST



3D RADIATION PLOT



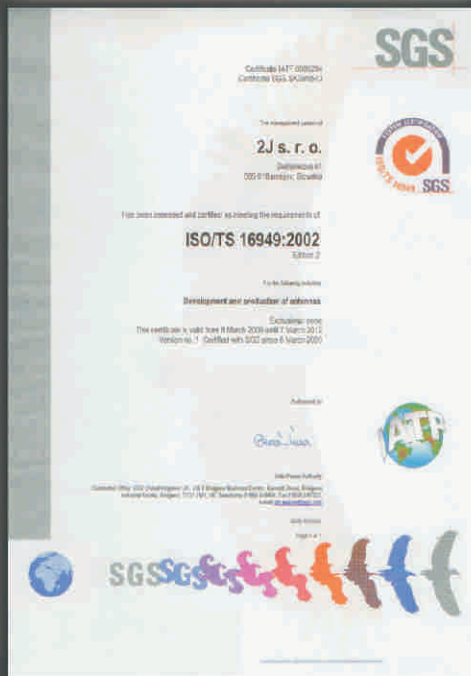
3D RADIATION PATTERN



PICK AND PLACE MACHINE



TESTING





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