



Product Catalogue

M2M & Smart Meter Antennas

65 Years of Experience

Panorama Antennas, a family business now in its third generation, is a leading designer and manufacturer of antennas for radio communication. Established in London in 1947, Panorama started life as a company manufacturing consumer products. In 1952, buoyed by huge demand for TVs in the UK, Panorama began manufacturing components for televisions, including antennas. With the transistor radio trend of the 1960s, Panorama's expert knowledge of television antennas was put to the manufacture of communication antennas for radio.

Throughout the 70s and 80s Panorama evolved to become the first specialised communication antenna manufacturer in the UK, developing a range of cellular antennas to coincide with the launch of the mobile phone network in Britain. In 1990, Panorama filed a patent application for the first ever solid state coupling circuit, revolutionising cellular glass mount antenna technology and creating a new benchmark for quality in the production of components. As the cellular telecommunications industry has grown worldwide, so has Panorama.

Today Panorama is a producer of antennas for the world's leading communication companies. While Panorama has grown to include 8 international offices, 2 subsidiaries, and over 70 staff; manufacturing, design and development are retained in London less than a mile from the original factory. Our network of international sales representatives means that all customers get the attention and advice they require, providing local support on global scale.

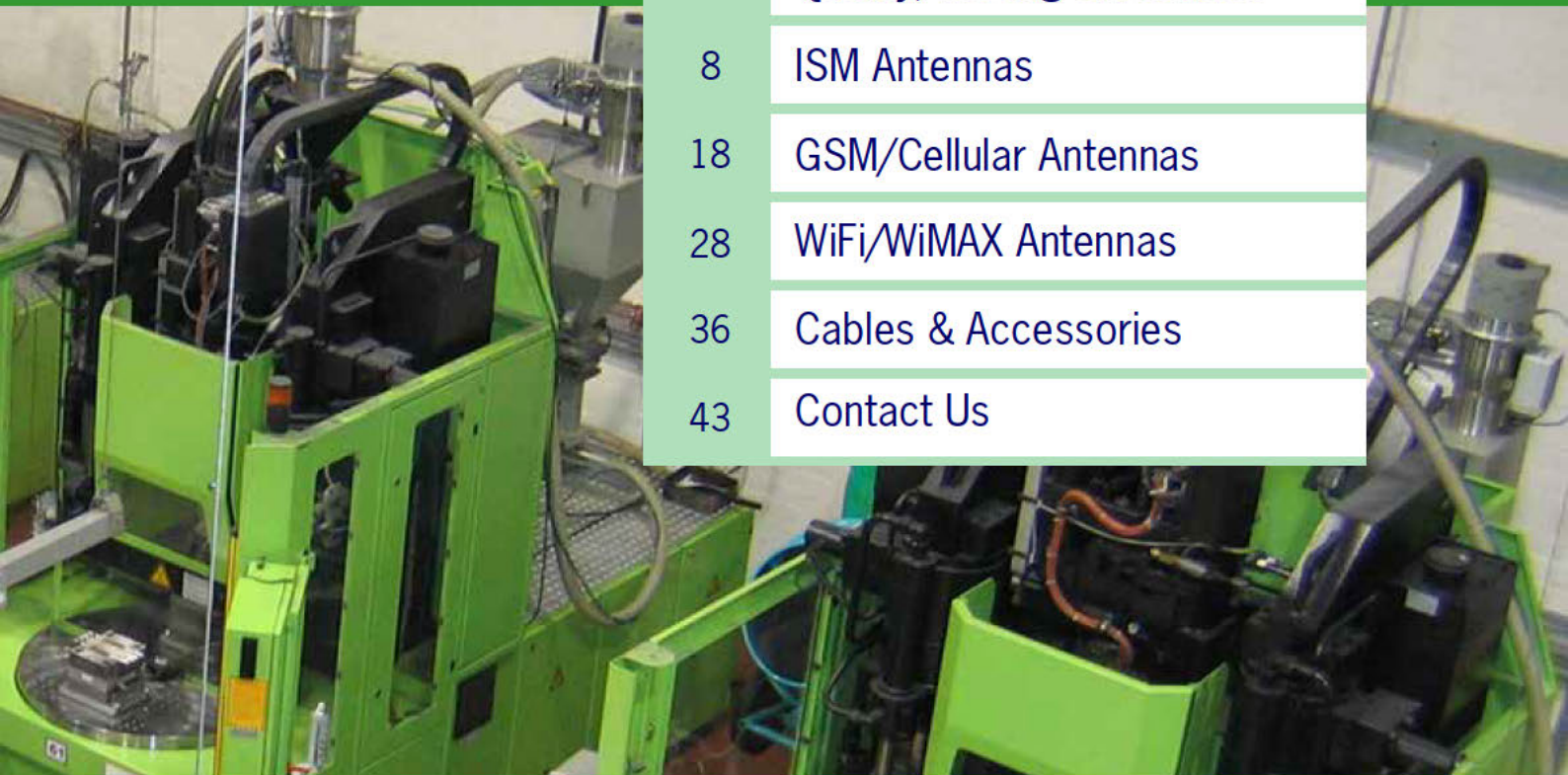
The First Choice for M2M Antennas

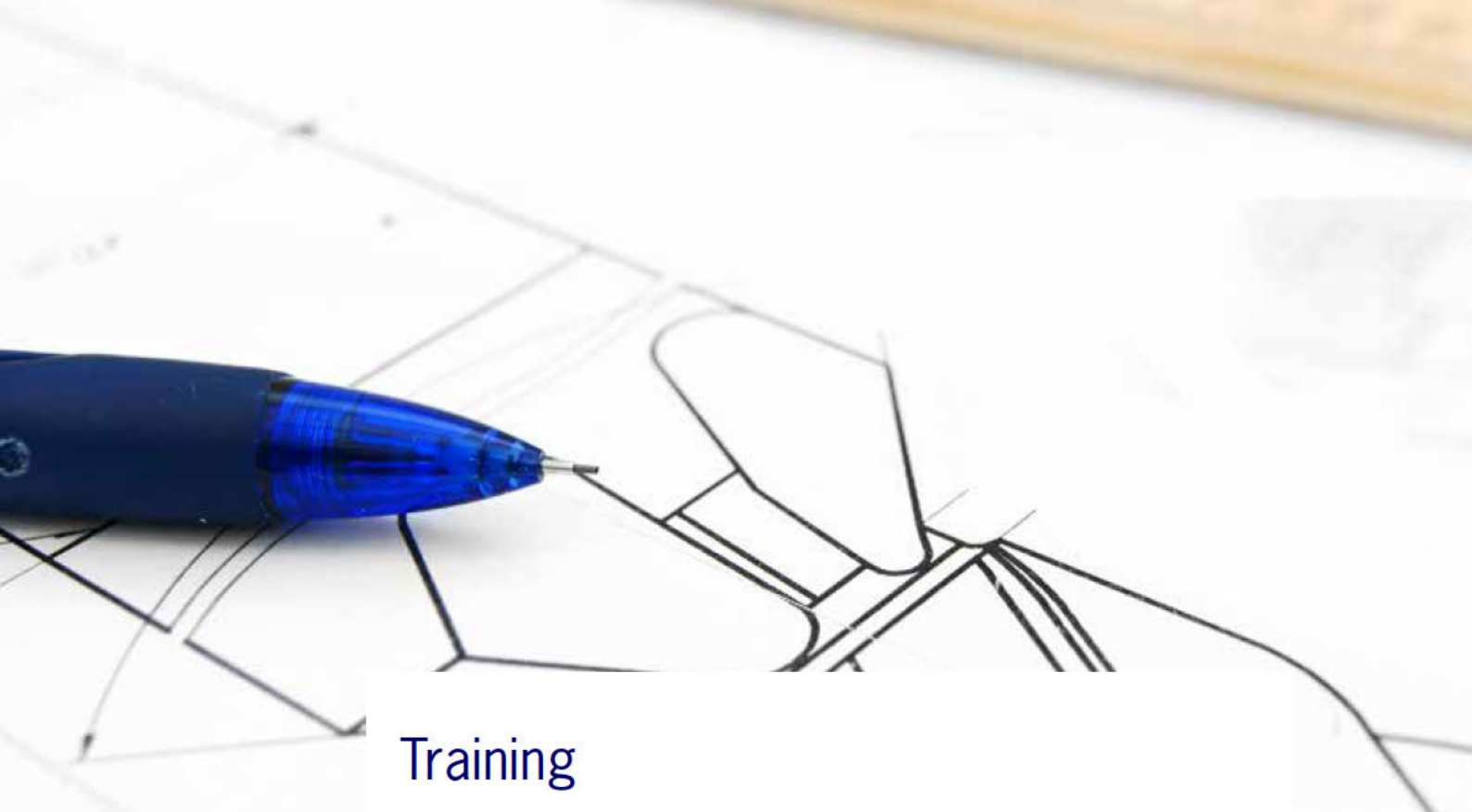
Panorama Antennas is a world leader in M2M & Smart Metering antennas. Panorama has brought their experience from the mobile radio and cellular industries and applied this knowledge to developing a comprehensive range of M2M antennas resulting in cost effective, resilient products, with emphasis on build quality and ease of installation to further reduce lifetime costs.



Contents

4	Training & Bespoke Design
6	Quality, Testing & Facilities
8	ISM Antennas
18	GSM/Cellular Antennas
28	WiFi/WiMAX Antennas
36	Cables & Accessories
43	Contact Us





Training

Training sessions can help organisations get antenna installations right the first time, thereby reducing the costs that might be incurred replacing poorly installed units.

Why is training important?

Ineffective antennas can cause system drop out, noise and poor data transmission rates. Without test facilities it is difficult for the user to know if a problem is due to poor installation, a network fault, or if the antenna itself is to blame.

The antenna is a vital component which affects the quality of the whole communication system. As a vehicle travels between transmission sites it relies on its mobile antenna to link up with the closest base station. Our training explains why efficient electrical design and effective installation are essential to make the most of the available coverage.

Who should attend?

'Introduction to mobile antennas' is perfect training for anyone working with, or supplying, communications equipment. This training session aims to increase customer satisfaction by improving the way that antennas are selected and installed. Individuals who could benefit most by attending include buyers, installers, distributors and retailers of mobile communications equipment.

What does training involve?

After the training session you should be able to:

- Understand basic antenna theory.
- Know how to select the best antenna for the application.
- Define antenna performance.
- Understand the correct installation and test processes.

Want training for your team?

If you would like to come to one of our open training sessions or would prefer us to provide a bespoke training session for your team, please do not hesitate to contact us.



Bespoke Design Service

Panorama Antennas are renowned for our ability to design antennas to meet customers' specific needs. This could involve modifying an existing product to improve bandwidth, cable length, connector configuration, or it might require a brand new design.

Custom Design To Your Specification

We closely consult with the customer throughout the design and manufacturing process to come up with a product that matches requirements every time.

The antenna will be tested so that it works perfectly in the environment that it is designed for.

Tuned To Your Frequency

Panorama can tune most UHF & VHF antennas to a specific band. If you don't see the exact frequency you need in our product catalogue, you only need ask to see if it can be tuned to meet your requirements.

Don't Forget The Cable

While many people may not realise it, the RF cable is almost as important as the antenna it is attached to. Panorama can provide many different types of cable to suit your requirement and maximise antenna performance.

Quality As Standard

Quality Assurance

In 1989, Panorama Antennas became the first antenna manufacturer in Europe to gain ISO 9000 certification. Panorama currently holds the ISO 9001-2008 certificate for quality assurance.



Patents

Panorama Antennas currently holds several patents and registered designs both in Europe and worldwide.

RoHS Compliance

All of the products that Panorama Antennas manufactures are 100% RoHS compliant. This is in line with European legislation which came into force on the 1st July 2006. Investment in advanced technology enables Panorama to test all materials supplied to us, as soon as they arrive at the factory, ensuring that noncompliant material is not passed on to the customer.



REACH

REACH (Registration, Evaluation, Authorisation and Restriction of Chemicals, EC 1907/2007) is the European Union's chemical regulation that came into force on 1 June 2007 and will be phased in over an 11 year period (until 2018). Panorama Antennas wholeheartedly supports the objective of REACH to enhance public health and safety and the protection of the environment.

As a producer and supplier of articles we have an obligation under Article 33 of REACH to communicate information on SVHCs (Substances of Very High Concern) which are present in our products above a threshold limit of 0.1% weight by weight. This information is currently accessible via the appropriate pages on our website.

Associations

Panorama Antennas is currently a member of the following professional associations:

Federation of Communication Services

TETRA Association

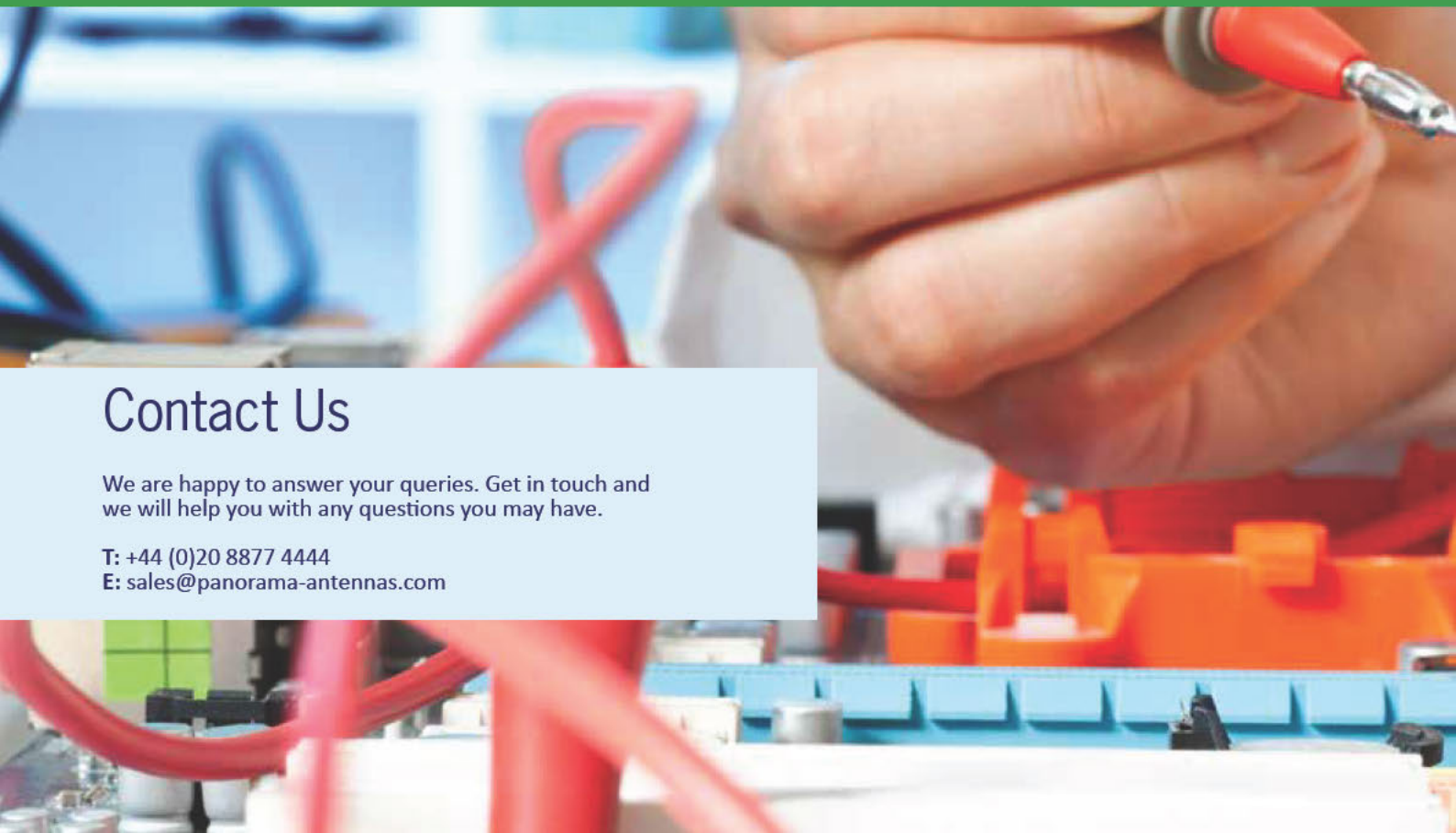
British Safety Council

Contact Us

We are happy to answer your queries. Get in touch and we will help you with any questions you may have.

T: +44 (0)20 8877 4444

E: sales@panorama-antennas.com



Testing & Facilities

Panorama's testing and measurement facilities represent the cutting edge of antenna design capability. Our communication antenna designs are validated before manufacture using accurate and repeatable tests and measurements. This specialist design and development process builds quality and reliability into all Panorama's products. The key components of our measurement system are:

The Anechoic Chamber

This creates a 1.2m spherical 'quiet zone' in which the performance characteristics of antenna assemblies can be measured at frequencies up to 35GHz, free from physical or electrical conditions that would otherwise interfere with the measurements.

Network Analysers

Network Analysers measure efficiency using a wide range of parameters including antenna impedance, relative field strength and insertion loss. Results can be displayed in various formats including Smith Chart, VSWR and return loss.

Turntable & Positioning Controller

The turntable enables the assessment of the directivity of an antenna in both the 'E' and 'H' planes. This special equipment is constructed to rotate through 360 degrees (in 1 degree increments), with minimal RF reflection or interference.

Antenna Measurement Software

This enables computer control of the Network Analyser and Positioning Controller/Turntable. Data obtained from controlled measurements is automatically displayed on a monitor as VSWR and polar radiation patterns which can be printed or shared on Panorama's computer network.

Vehicle Ground Plane Simulation

This can be used in the centre of the anechoic chamber to simulate as closely as possible, a typical modern car roof and windscreen (front and rear).

GPS Satellite Recognition

GPS Antennas rely on continuous communication with the GPS satellites. The GPS Satellite Recognition software enables Panorama to identify each satellite that is being picked up by the GPS antenna. This helps our developers to see how our antennas perform in a real world environment.

CST Microwave Studio

Panorama uses leading RF modelling software to design, validate & measure antenna forms.



ISM Antennas



ODP

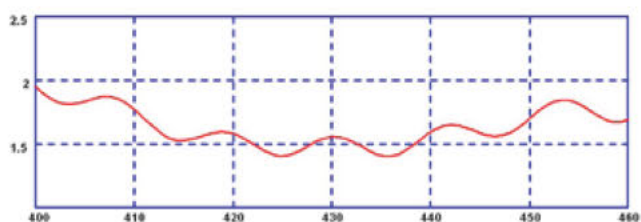
Improves range
Easy installation
Light weight solution
Discreet grey colour

The ODP is a low cost remote antenna solution for ISM devices.

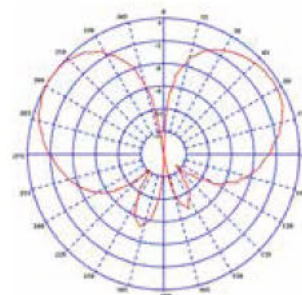
Designed with a built in offset wall mounting bracket the ODP is particularly useful where in-building network coverage is reduced due to solid walls or glass.



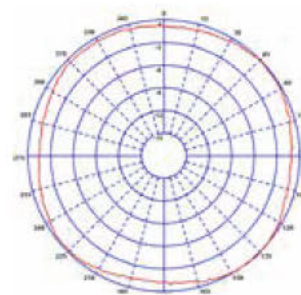
Typical VSWR (ODP-433)



Typical E-Plane (430MHz)



Typical H-Plane (430MHz)



Standard Data

Electrical Data	
Peak Gain: Isotropic	2dBi
Compared to 1/4 wave	0dB
VSWR	< 2:1
Polarisation	Vertical
Pattern	Omnidirectional
Impedance	50Ω
Max Input Power (W)	100
Mechanical Data	
Operating Temp (°C)	-30°/+70°C (-22°/+158°F)
Material	A.B.S
Colour	Grey
Cable Data	
Type	RG58CU
Diameter	5
Length	8
Termination	BNC Plug

+other connectors available

Product Variants

Part No.	Frequency	Operational Band	Height
ODP-H7-8B	162-174	ISM169, UHF H7	588 (23.1")
ODP-433-8B	410-450	ISM433	235 (9.3")



WM11

High gain at 2G & 3G frequencies
Wall mount or mast mount
Waterproof housing

The WM11 series is a range of wall mounted antennas offering high directional gain across 2G and 3G frequencies.

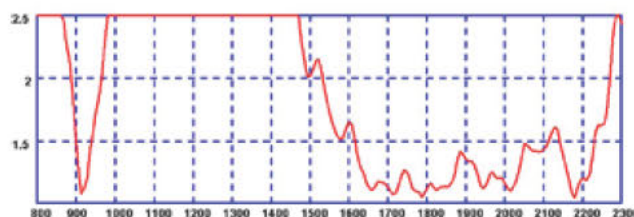
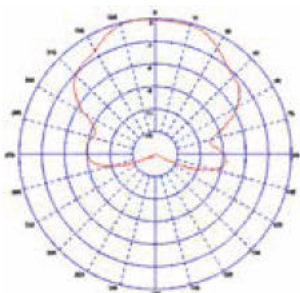
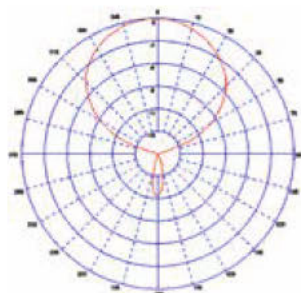
These features make this antenna ideal for enabling a reliable 'fixed line quality' link for data transmission - even from remote sites.

Flexible wall and mast mount options will suit any mounting position and a durable waterproof construction makes this antenna ideal for outdoor use. The WM11 is compact and convenient alternative to a Yagi for M2M applications requiring gain.

Typical E-Plane (900MHz)

Typical H-Plane (900MHz)

Typical VSWR (WM11-DEP3G-05SJ)



Standard Data

Electrical Data	
Peak Gain: Isotropic	8dBi (805-960), 9dBi (1710-1900), 11dBi (1900-2170)
Compared to ¼ wave	6dB (805-960), 7dB (1710-1900), 9dB (1900-2170)
VSWR	≤ 2:1
Polarisation	Vertical
Pattern	Directional
Impedance	50Ω
Max Input Power (W)	50
Mechanical Data	
Operating Temp (°C)	-40°/+80°C (-40°/+176°F)
Material	ASA
Dimensions (mm)	Height 155 (6.1")
	Width 155 (6.1")
	Depth 90 (3.5")
Environmental Specification	
Wind Load/Resistance	63N at 180km/h
Wind Surface (m²)	0.02
Cable Data	
Length (m)	0.5 (19")
Termination	SMA Female *

Product Variants

Part No.	Frequency	Operational Band
WM11-AEP3G-05SJ	805-894, 1710-1880, 1850-1990, 1990-2170	ISM868, AMPS800, GSM850, GSM1800, PCS1900, 3G UMTS
WM11-DEP3G-05SJ	890-960, 1710-1880, 1850-1990, 1990-2170	ISM915, ISM925, GSM900, GSM1800, PCS1900, 3G UMTS

* Extension cable available

EB-ASF-BADEP3G & EBM-ASF-BADEP3G

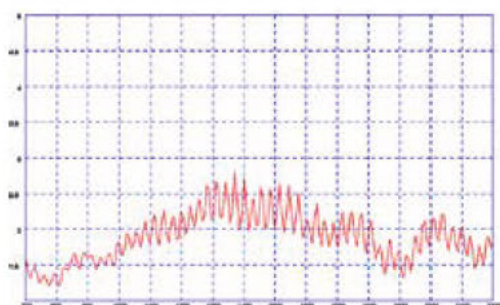
Euro base with flexible whip
Moulded cable option
Stylish design
Suitable for vehicle or fixed site

The 'Euro' base panel mount (EB) has a smooth and discreet yet robust profile. The whip attaches with a screw thread recessed in the cap.

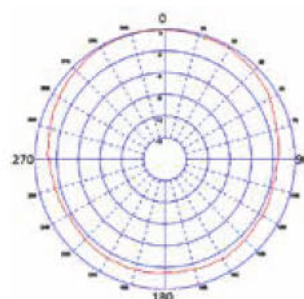
The compact multiband whip covers six major cellular/GSM/LTE bands. The flexible and stylish design makes the whip both discreet in appearance and resistant to damage. The Euro Base antenna range is available with a moulded cable option, with part number starting 'EBM'.



Typical VSWR (EB-ASFBADEP3G)



Typical H-Plane (850MHz)



Standard Data

Electrical Data	
Peak Gain: Isotropic	2dBi
Compared to ¼ wave	0dB
VSWR	≤ 2:1
Polarisation	Vertical
Pattern	Omnidirectional
Impedance	50Ω
Max Input Power (W)	60
Mechanical Data	
Operating Temp (°C)	-40°/+80°C (-40°/+176°F)
Material	TPE
Dimensions (mm)	Height Mounted
	127 (5.0")
Whip Length	100 (3.9")
Cable Data	
Type	CS23 (RG58 c/u)
Diameter (mm)	5 (0.2")
Length (m)	5 (16')
Termination	FME Socket

Product Variants

Part No.	Frequency	Operational Band
EB-ASFBADEP3G	698-960 & 1710-2170	ISM868, ISM915, ISM925, GSM850, GSM900 GSM1800, PCS1900, 3G UMTS
EBM-ASFBADEP3G	698-960 & 1710-2170	ISM868, ISM915, ISM925, GSM850, GSM900 GSM1800, PCS1900, 3G UMTS



PUG-TNC & PCG-TNC

Rugged design
Pre-tuned to frequency
Ground plane independent

The PUG-TNC & PCG-TNC are versatile halfwave antennas available across a range of frequencies. They offer 3dBi of omnidirectional gain for a reliable connection from remote locations.

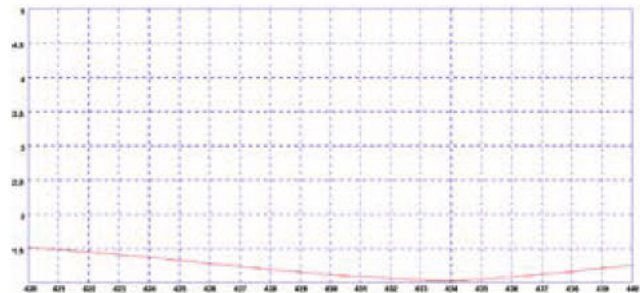
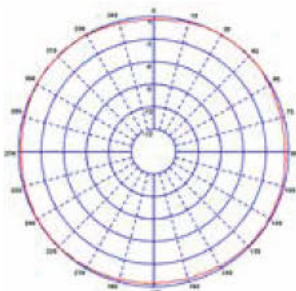
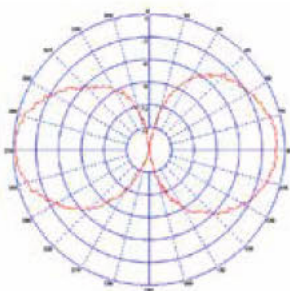
The PUG & PCG ranges are ground plane independent which means that, unlike some other antenna forms, they can be mounted on non metallic surfaces or in free space and still retain their performance.

Compatible with TNC bulkhead cable assemblies.

Typical E-Plane (433MHz)

Typical H-Plane (433MHz)

Typical VSWR (PUG-TNC-433)



Standard Data

Electrical Data	
Peak Gain: Isotropic	3dBi
Compared to ¼ wave	1dB
VSWR	< 2 : 1
Impedance	50Ω
Max Input Power (W)	5
Mechanical Data	
Operating Temp (°C)	-30°/+80°C (-22°/+158°F)
Material	Nylon
Diameter (mm)	16 (0.63")
Connector	
Type	TNC Plug

Product Variants

Part No.	Frequency	Operational Band	Length
PUG-TNC-433	430-440	ISM433	340 (13.4")
PCG-TNC-851	800-900	ISM868	200 (7.9")
PCG-TNC-921	860-960	ISM915, ISM 925	190 (7.5")

MFX Series

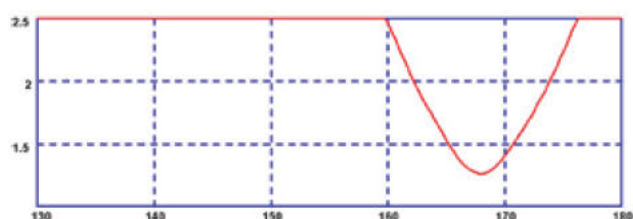
Rugged design for modems
Pre-tuned to frequency

The MFX series is a moulded helical antenna offering omnidirectional gain and are totally overmoulded in polyester. This improves both the durability and life expectancy of the antenna.

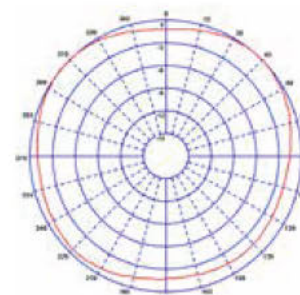
The MFX antenna range can operate with a smaller ground plane than a quarterwave antenna and its compressed structure makes it ideal for VHF applications requiring a compact antenna.



Typical VSWR (MFX-TNC-H7)



Typical H-Plane (169MHz)



Standard Data

Part No		
	MFX-BNC-H7	MFX-TNC-H7
Electrical Data		
Frequency Range (MHz)		162-174
Operational Band		169MHz
Peak Gain: Isotropic		-1dBi
Compared to ¼ wave		-3dB
VSWR		< 2 : 1
Impedance		50Ω
Max Input Power (W)		10
Mechanical Data		
Operating Temp (°C)		-40°/+80°C (-40°/+176°F)
Material		TPU
Dimensions (mm)	Length	160 (6.3")
	Diameter	14.2 (0.6")
Connetor		
Type	BNC Plug	TNC Plug



MQ series

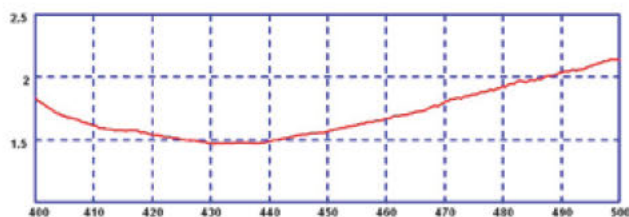
Rugged design for modems
Pre-tuned to frequency
Colour coded

Panorama offers a comprehensive range of portable antennas. The MQ is overmoulded in high quality TPU. This feature improves both the durability and life expectancy of the antenna without compromising electrical performance.

This antenna is available with a broad range of connectors including SMA, BNC, TNC and others. The variables shown here feature Panorama's TNM connector for use with our ingress protected TNM bulkhead. (See page 37 for more information)

Please note that the MQ series of antennas require an appropriate ground plane.

Typical VSWR (MQ-TNC-433)



Standard Data

Electrical Data	
Peak Gain: Isotropic	2dBi
Compared to ¼ wave	0dB
VSWR	< 2:1
Impedance	50Ω
Max Input Power (W)	60
Mechanical Data	
Operating Temp (°C)	-40°/+80°C (-40°/+176°F)
Material	Black TPU
Diameter	16 (0.6")

Product Variants

Part No.	Frequency	Operational Band	Length	Termination
MQ-TNM-433	406-470	ISM433	170 (6.7")	TNM Plug
MQ-TNM-850	800-900	ISM868	88 (3.5")	TNM Plug
MQ-TNM-920	870-960	ISM915, ISM925	84 (3.3")	TNM Plug
MQ-BNC-433	406-470	ISM433	188 (7.4")	BNC Plug
MQ-BNC-860	810-900	ISM868	96 (3.8")	BNC Plug
MQ-BNC-900	890-960	ISM915	92 (3.6")	BNC Plug
MQ-SMAMO-433	406-470	ISM433	165 (6.5")	SMA Plug
MQ-SMAMO-868	810-900	ISM868	92 (3.6")	SMA Plug
MQ-SMAMO-900	890-960	ISM915	87 (3.4")	SMA Plug
MQ-TNC-433	406-470	ISM433	175 (6.8")	TNC Plug
MQ-TNC-868	810-900	ISM868	85 (3.7")	TNC Plug
MQ-TNC-915	870-960	ISM915	85(3.7")	TNC Plug

MFXU series

Rugged design for modems
Pre-tuned to frequency
Colour coded

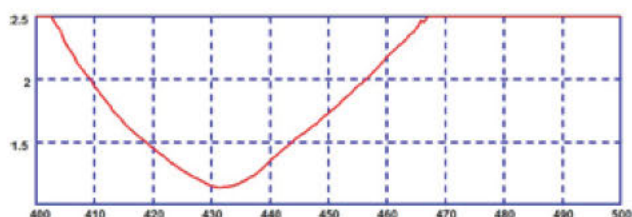
The MFXU's is overmoulded in high quality TPU or TPE. This improves both the durability and life expectancy of the antenna without compromising electrical performance.

This antenna is available with a broad range of connectors including SMA, BNC, TNC and others. The variables shown here feature Panorama's TNM connector for use with our ingress protected TNM bulkhead. (See page 37 for more information)

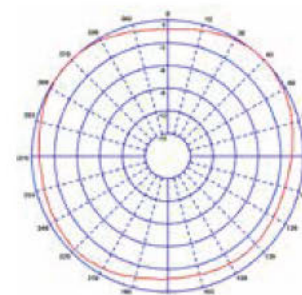
Please note the MFXU series of antennas requires an appropriate ground plane.



Typical VSWR (MFXU-TNC-433)



Typical H-Plane (433MHz)



Standard Data

Electrical Data		
Frequency Range (MHz)		425-460
Operational Band		ISM433
Peak Gain: Isotropic		-1dBi
Compared to ¼ wave		-3dB
VSWR		< 2 : 1
Impedance		50Ω
Max Input Power (W)		60
Mechanical Data		
Operating Temp (°C)		-40°/+80°C (-40°/+176°F)
Material		TPU
Dimensions (mm)	Length	85 (3.3")
	Diameter	16 (0.6")

Product Variants

Part No.	Length (mm)	Termination
MFXU-BNC-433	93 (3.6")	BNC Plug
MFXU-TNC-433	85 (3.3")	TNC Plug
MFXU-TNM-433	92 (3.6")	TNM Plug
MFXU-SMAMO-433	68 (2.7")	SMA Plug



EF

Waterproof

Internally or externally fitted

Simple & quick installation

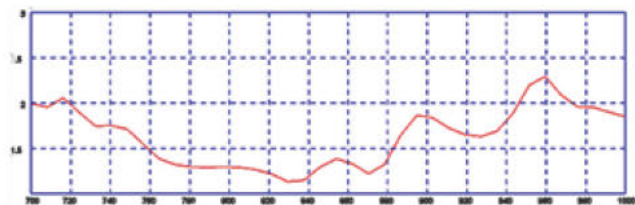
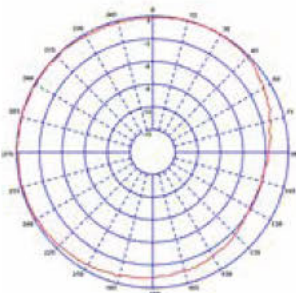
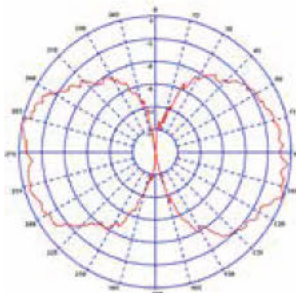
The EF 'easy fit' antenna is efficient & compact.

The EF range of antennas comes complete with a secure industry grade adhesive pad providing a huge range of possibilities for the installer. The antenna is extremely low profile, with a flexible body which allows it to even be installed on uneven surfaces, installation is quick and simple, the antenna can also be removed without any damage to the installation site.

Typical E-Plane

Typical H-Plane

Typical VSWR (EFBAD-3F)



Standard Data

Electrical Data	
Peak Gain: Isotropic	2dBi
Compared to ¼ wave	0dB
VSWR	≤ 2.5:1
Pattern	Omnidirectional
Polarisation	Vertical
Impedance	50Ω
Max Input Power (W)	30
Mechanical Data	
Operating Temp (°C)	-40°/+80°C (-40°/+176°F)
Material	TPU
Cable Data	
Type	RG174
Length (m)	3 (9.8')
Connector	
Type	FME (Female)

Product Variants

Part No.	Frequency	Operational Band	Height	Width
EFBAD-3F	760-960	LTE 700 / AMPS800 / GSM850, GSM900	130 (5.12")	17 (0.67")
EF-442-3F	420-465	ISM433	217 (8.54")	19 (0.74")

+ other terminations available

TCB, TCE & TCF

Flexible form
Simple & quick installation
Suitable for plastic enclosures

The TC range covers all the cellular bands without compromising on performance or cost making them an ideal 'one size fits all' product for metering systems, equipment monitoring, and any other applications involving the transmission of data over cellular networks.

The TC range of antennas are all easy to install with pre-drilled mounting holes and industry standard UFL socket connector. The small size & low profile allow these antennas to be fitted in small spaces.



TCB-C3G



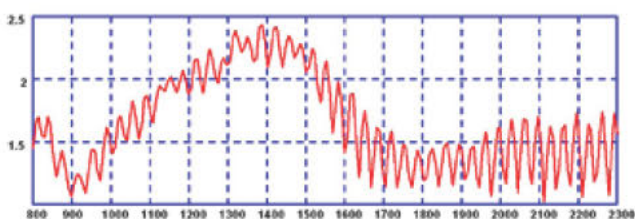
TCF-C3G



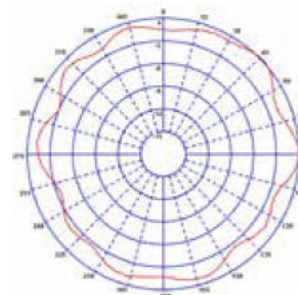
TCE-C3G



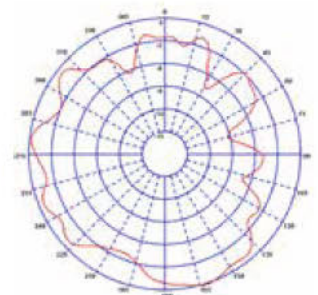
Typical VSWR (TCF-C3G)



Typical H-Plane (900MHz)



Typical H-Plane (1800MHz)



Standard Data

Electrical Data	
Peak Gain: Isotropic	2dBi
Compared to ¼ wave	0dB
VSWR	≤ 2.5:1
Pattern	Omnidirectional
Impedance	50Ω
Max Input Power (W)	10
Mechanical Data	
Operating Temp (°C)	-40°/+80°C (-40°/+176°F)
Height	1.25 (0.05")
Mounting Data	
Fixing Holes Diameter (mm)	Ø 3 (0.1")
Connector	
Type	U.FL socket*
Height (mm)	1.25 (0.05")

Product Variants

Part No.	Frequency	Operational Band	Length	Width
TCB-C3G-UF	805-894, 890-960, 1710-1880, 1900-2170	ISM868, ISM915, ISM925, GSM850, GSM900, GSM1800, PCS1900, 3G UMTS	50 (2.0")	40 (1.6")
TCE-C3G-UF	805-894, 890-960, 1710-1880, 1900-2170	ISM868, ISM915, ISM925, GSM850, GSM900, GSM1800, PCS1900, 3G UMTS	140 (5.5")	10 (0.4")
TCF-C3G-UF	805-894, 890-960, 1710-1880, 1900-2170	ISM868, ISM915, ISM925, GSM850, GSM900, GSM1800, PCS1900, 3G UMTS	125 (4.9")	13 (0.5")

* A variety of UFL cables are available on pages 38 & 39

GSM/Cellular



LPAB

Heavy duty - external mount
Simple, one hole installation
Suitable for plastic or metal enclosures
Range of frequency bands available

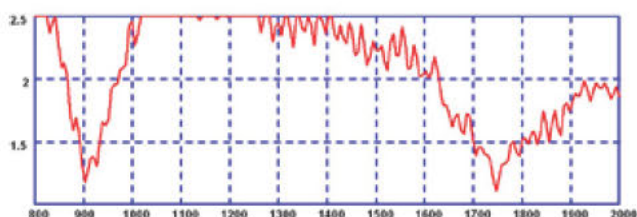
The LPAB range of antennas combine ergonomic style with sophisticated engineering.

The low profile housing gives a high degree of vandal resistance making it perfect for vending machines or other telemetry devices in exposed locations that require reliable communications. The antenna is secured in place by a reversible locking nut allowing secure fitment to panels of between 1mm and 26mm thick.

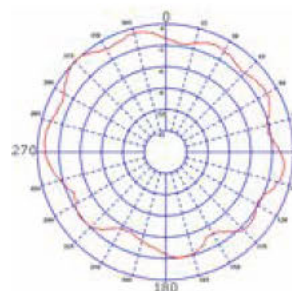
The antenna offers ground-plane independent omni directional performance across up to three bands making it a versatile solution for a number of applications.



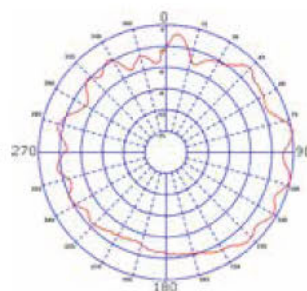
Typical VSWR (LPAB-DE-2SP)



Typical H-Plane (900MHz)



Typical H-Plane (1800MHz)



Standard Data

Electrical Data		
Peak Gain: Isotropic		0dBi
Compared to 1/4 wave		-2dB
VSWR		< 2.5:1
Pattern		Omnidirectional
Impedance		50Ω
Max Input Power (W)		25
Mechanical Data		
Operating Temp (°C)		-40°/+80°C (-40°/+176°F)
Dimensions (mm)	Height	15.5 (0.61")
	Length	130 (5.12")
	Width	40 (1.57")
Mounting Data		
Fixing		Panel mount with optional screw fixings
Mounting Hole Size (mm)	Length	15.5 (0.61")
	Diameter	12 (0.47")
Cable Data		
Type		RG174
Termination		SMA Plug†

Product Variants

Part No.	Frequency	Operational Band
LPAB-868-3G-03F	840-890, 1900-2170	ISM868 & 3G UMTS
LPAB-DE-2SP	890-960, 1710-1880	ISM915, ISM925, GSM900 & GSM1800
LPAB-AP-2SP	824-894, 1850-1990	ISM868, Cellular 850 & 1900

+ other terminations available



LPW-BC3G-26-2SP

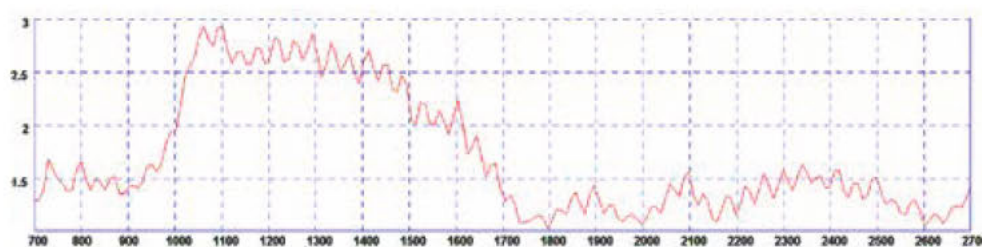
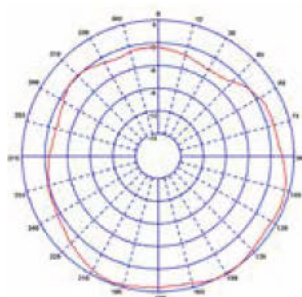
Low profile, vandal & tamper proof design
Simple adhesive pad or screw fix installation
Highly efficient antenna covering global cellular/LTE bands

The Panorama LPW range of antennas are designed to decrease the lifetime cost of M2M and smart metering installations by offering a robust, effective antenna that is easy to install and lasts the lifetime of the installation without the need for maintenance.

The antenna offers ground-plane independent omnidirectional performance across global cellular bands making it a versatile solution for any number of applications. The highly efficient element design ensures a high first time connection rate and an ongoing, robust communications link even in problematic coverage areas.

Typical H-Plane (850MHz)

(LPW-BC3G-26-2SP)



Standard Data

Electrical Data		
Frequency Range (MHz)		698-960, 1710-2170, 2500-2700
Operational Band		LTE 700, AMPS850, ISM868, ISM915, ISM925, GSM900, GSM1800, PCS1900, AWS, 3G UMTS 2100, LTE 2.6GHz
Peak Gain: Isotropic		2dBi
Compared to λ wave		0dB
VSWR		< 2.5 : 1
Pattern		Omnidirectional
Impedance		50Ω
Max Input Power (W)		20
Mechanical Data		
Operating Temp (°C)		-40°/+80°C (-40°/+176°F)
Material		ASA
Dimensions (mm)	Height	19.6 (0.77")
	Length	165 (6.5")
	Diameter	32 (1.26")
Cable Data		
Type		RG174
Termination		SMA Plug†

+ other terminations available

LPB

Rugged low profile design
Excellent bandwidth

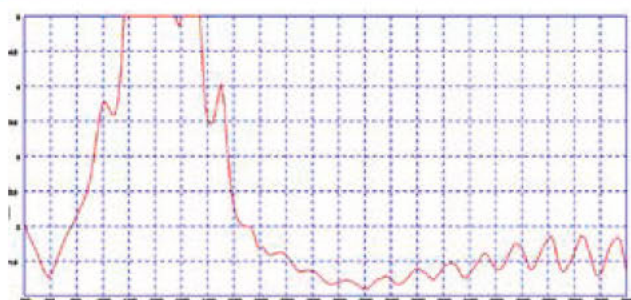
The LPB low profile antenna range has been designed to perform even in extreme environments. At only 82mm (3.22") high and protected by a robust high impact radome the antenna is almost impervious to daily wear, tear and impact.

The LPB offers excellent performance across a wide bandwidth. Mounted on a 400 x 400mm ground plane the LPB covers LTE frequencies across 700 and 800MHz as well as all global cellular frequencies from 698-960 MHz and 1710-2700MHz making it an extremely versatile product.

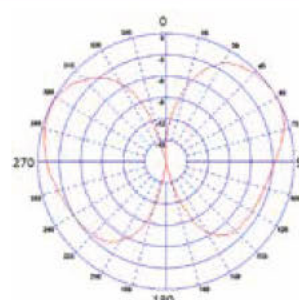
The antenna is cost effective to install and adaptable to any install environment.



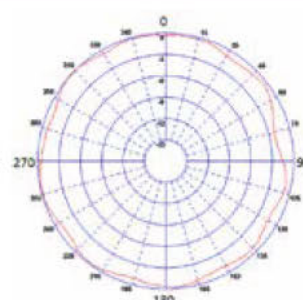
Typical VSWR (LPB-7-27-5SP)



Typical E-Plane (900MHz)



Typical H-Plane (900MHz)



Standard Data

Electrical Data		
Peak Realised	700/800	3dBi
Gain:	900/1800	4dBi
Isotropic	1900/2100 2400/2600	5dBi
VSWR		<2.5:1
Polarisation		Vertical
Pattern		Omnidirectional
Impedance		50Ω
Max Input Power (W)		30
Mechanical Data		
Operating Temp (°C)		-40°/+80°C (-40°/+176°F)
Dimensions (mm)	Height	82 (3.22")
	Width	48 (1.89")
Mounting Data		
Fixing		Panel mount
Hole Diameter (mm)		14 (0.5")
Max Panel Thickness (mm)		13 (0.5")
Cable Data		
Type		CS29
Termination		SMA Plug

Product Variants

Part No.	Frequency	Operational Band
LPB-7-27-05SP	698-960, 1710-2700	LTE 700, AMPS850, ISM868, ISM915, ISM925, GSM900, GSM1800, PCS1900, AWS, 3G UMTS 2100, LTE 2.6GHz
LPB-7-27-5SP	698-960, 1710-2700	LTE 700, AMPS850, ISM868, ISM915, ISM925, GSM900, GSM1800, PCS1900, AWS, 3G UMTS 2100, LTE 2.6GHz

This product is also available with a mounting bracket Part number: B4BE-2-27 found on page 24



WM11

High gain at 2G & 3G frequencies
Wall mount or mast mount
Waterproof housing

The WM11 series is a range of wall mounted antennas offering high directional gain across 2G and 3G frequencies.

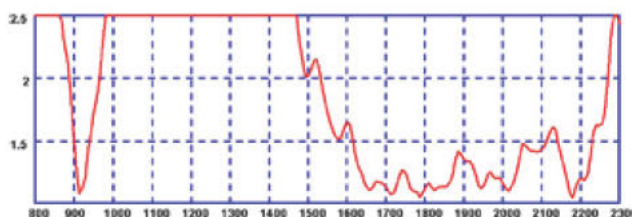
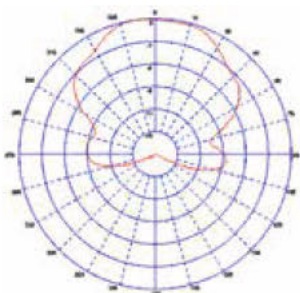
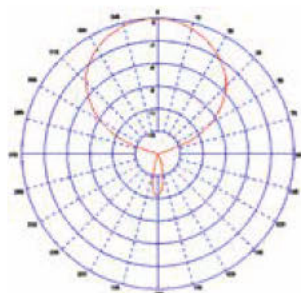
These features make this antenna ideal for enabling a reliable 'fixed line quality' link for data transmission - even from remote sites.

Flexible wall and mast mount options will suit any mounting position and a durable waterproof construction makes this antenna ideal for outdoor use.

Typical E-Plane (900MHz)

Typical H-Plane (900MHz)

(WM11-DEP3G-05SJ)



Standard Data

Electrical Data	
Peak Gain: Isotropic	8dBi (805-960), 9dBi (1710-1900), 11dBi (1900-2170)
Compared to ¼ wave	6dB (805-960), 7dB (1710-1900), 9dB (1900-2170)
VSWR	≤ 2:1
Polarisation	Vertical
Pattern	Directional
Impedance	50Ω
Max Input Power (W)	50
Mechanical Data	
Operating Temp (°C)	-40°/+80°C (-40°/+176°F)
Material	ASA
Dimensions (mm)	Height 155 (6.1")
	Width 155 (6.1")
	Depth 90 (3.5")
Environmental Specification	
Wind Load/Resistance	63N at 180km/h
Wind Surface (m²)	0.02
Cable Data	
Length (m)	0.5 (19")
Termination	SMA Female *

Product Variants

Part No.	Frequency	Operational Band
WM11-AEP3G-05SJ	805-894, 1710-1880, 1850-1990, 1990-2170	ISM868, AMPS800, GSM850, GSM1800, PCS1900, 3G UMTS
WM11-DEP3G-05SJ	890-960, 1710-1880, 1850-1990, 1990-2170	ISM915, ISM925, GSM900, GSM1800, PCS1900, 3G UMTS

* Extension cable available

PCX

Covers all cellular & GSM frequencies
Rugged design for modems
Compact profile

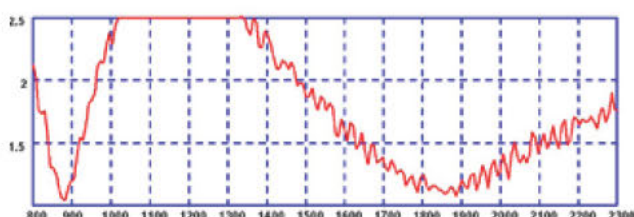
The PCX wireless terminal antenna is suitable for equipment that requires a wireless GSM cellular or 3G signal.

This small antenna can operate with a comparatively small ground plane and therefore is perfect for hand-held devices that need wireless connectivity. It has been engineered to survive in harsh and exposed environments.

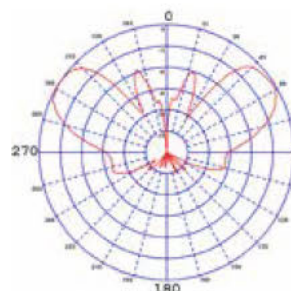
Pentaband functionality allows the antenna to be used for many different applications and to offer a high level of interoperability.



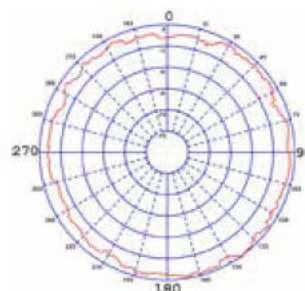
Typical VSWR (PCX-TNC-C3G)



Typical E-Plane (1800MHz)



Typical H-Plane (1800MHz)



Standard Data

Electrical Data	
Peak Gain: Isotropic	2dBi
Compared to ¼ wave	0dB
VSWR	≤ 2.5:1
Pattern	Omnidirectional
Polarisation	Vertical
Impedance	50Ω
Max Input Power (W)	25
Mechanical Data	
Operating Temp (°C)	-40°/+80°C (-40°/+176°F)
Material	Nylon & TPE

Product Variants

Part No.	Frequency	Operational Band	Height	Width	Connector
PCX-SMAP-C3G	805-960, 1710-1880, 1850-1990, 1990-2170	ISM868, ISM915, ISM925, AMPS800, GSM850, GSM900, GSM1800, PCS1900, 3G UMTS	60 (2.4")	10 (0.4")	SMA plug
PCX-TNM-C3G	805-960, 1710-1880, 1850-1990, 1990-2170	ISM868, ISM915, ISM925, AMPS800, GSM850, GSM900, GSM1800, PCS1900, 3G UMTS	69 (2.7")	16 (0.6")	TNM plug
PCX-TNC-C3G	805-960, 1710-1880, 1850-1990, 1990-2170	ISM868, ISM915, ISM925, AMPS800, GSM850, GSM900, GSM1800, PCS1900, 3G UMTS	69 (2.7")	16 (0.6")	TNC Plug



LPB

Cost effective 2G/3G/4G signal booster

Easy installation

Wall mount or mast mount

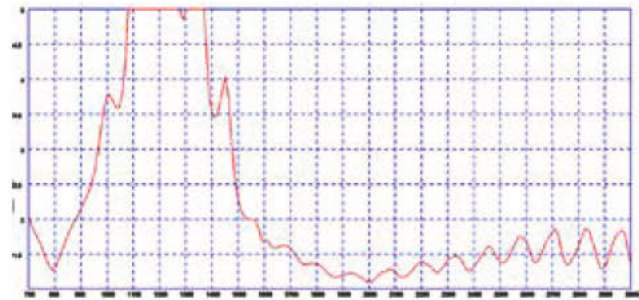
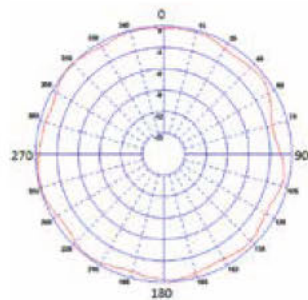
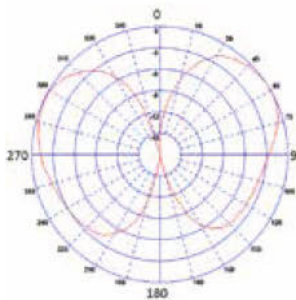
The B4BE range has been designed to provide cost effective coverage booster antennas for 2G/3G/4G devices. The antennas are designed for wall or mast mounting and are weather proof allowing the device to reap the benefits of an antenna mounted in an elevated or external location where the signal is strongest.

The omnidirectional radiation pattern allows the antenna to be quickly installed while the global Cellular / GSM / LTE coverage provided by the antenna allows it to be utilised for 2G / 3G and 4G applications the world over.

Typical E-Plane (900MHz)

Typical H-Plane (900MHz)

(B4BE-7-27-5SP)



Standard Data

Electrical Data		
Peak Realised Gain: Isotropic	698-960MHz	3dBi
	1710-2700MHz	4dBi
VSWR		<2.5:1
Polarisation		Vertical
Pattern		Omnidirectional
Impedance		50Ω
Max Input Power (W)		50
Mechanical Data		
Operating Temp (°C)		-40°/+80°C (-40°/+176°F)
Dimensions (mm)	Height Mounted	164 (6.46")
	Width	48 (1.89")
Mounting Data		
Fixing		Wall mount or Mast mount
Hole Diameter (mm)		14 (0.5")
Max Panel Thickness (mm)		13 (0.5")
Cable Data		
Type		CS59
Termination		SMA Plug

Product Variants

Part No.	Frequency	Operational Band
B4BE-7-27-5SP	698-960, 1710-2700	LTE 700, AMPS850, ISM868, ISM915, ISM925, GSM900, GSM1800, PCS1900, AWS, 3G UMTS 2100, LTE 2.6GHz
B4B-7-27-05SP	698-960, 1710-2700	LTE 700, AMPS850, ISM868, ISM915, ISM925, GSM900, GSM1800, PCS1900, AWS, 3G UMTS 2100, LTE 2.6GHz

TCB, TCE & TCF

Flexible form
Simple & quick installation
Suitable for plastic enclosures

The TC range covers all the cellular bands without compromising on performance or cost making them an ideal 'one size fits all' product for metering systems, equipment monitoring, and any other applications involving the transmission of data over cellular networks.

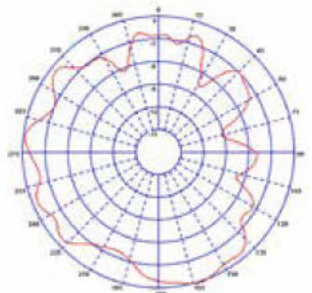
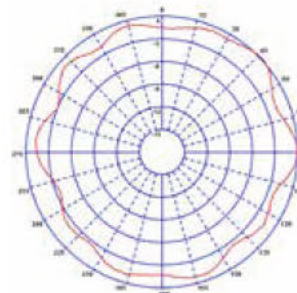
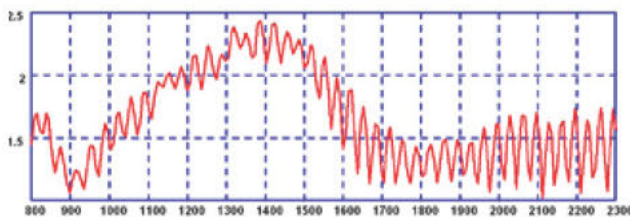
The TC range of antennas are all easy to install with pre-drilled mounting holes and industry standard UFL socket connector. The small size & low profile allow these antennas to be fitted in small spaces.



Typical VSWR (TCF-C3G-UFL)

Typical H-Plane (900MHz)

Typical H-Plane (1800MHz)



Standard Data

Electrical Data	
Peak Gain: Isotropic	2dBi
Compared to ¼ wave	0dB
VSWR	≤ 2.5:1
Pattern	Omnidirectional
Impedance	50Ω
Max Input Power (W)	10
Mechanical Data	
Operating Temp (°C)	-40°/+80°C (-40°/+176°F)
Height	1.25 (0.05")
Mounting Data	
Fixing Holes Diameter (mm)	Ø 3 (0.1")
Connector	
Type	U.FL socket*
Height (mm)	1.25 (0.05")

Product Variants

Part No.	Frequency	Operational Band	Length	Width
TCB-C3G-UFL	805-894, 890-960, 1710-1880, 1900-2170	ISM868, ISM915, ISM925, GSM850, GSM900, GSM1800, PCS1900, 3G UMTS	50 (2.0")	40 (1.6")
TCE-C3G-UFL	805-894, 890-960, 1710-1880, 1900-2170	ISM868, ISM915, ISM925, GSM850, GSM900, GSM1800, PCS1900, 3G UMTS	140 (5.5")	10 (0.4")
TCF-C3G-UFL	805-894, 890-960, 1710-1880, 1900-2170	ISM868, ISM915, ISM925, GSM850, GSM900, GSM1800, PCS1900, 3G UMTS	125 (4.9")	13 (0.5")

* A variety of UFL cables are available on pages 38 & 39

GSM/Cellular Antennas Multiband Magnetic Mount



MAR Range

No hole installation
Strong magnetic retention
Easy removal

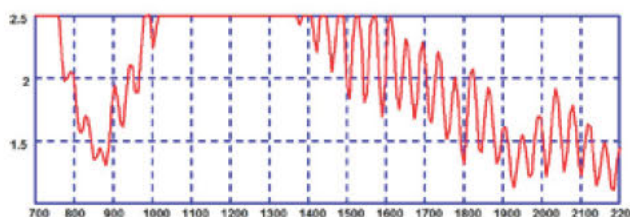
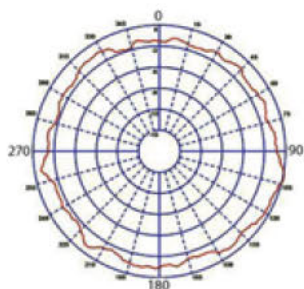
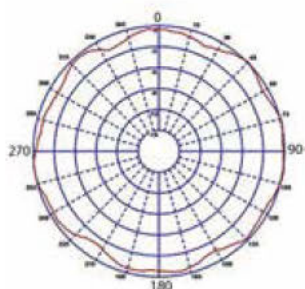
If you are constantly on the move the magnetic MAR antenna range is the ultimate solution. Placed on a metal surface the antenna will grip securely with a tough but removable magnetic base, giving you high gain, omnidirectional coverage.

When it comes to removing or re-positioning, it couldn't be easier and you won't be left with any evidence that the antenna was there at all.

Typical H-Plane (900MHz)

Typical H-Plane (1800MHz)

(MAR-C3G-2F)



Standard Data

Electrical Data	
Polarisation	Vertical
Pattern	Omnidirectional
Impedance	50Ω
Max Input Power (W)	50
Mechanical Data	
Operating Temp (°C)	-40°/+80°C (-40°/+176°F)
Mounting Data	
Fixing	Magnetic Mount
Cable Data	
Type	RG174
Termination	FME Socket

Product Variants

Part No.	Frequency	Operational Band	Gain: Isotropic	Height
MAR-2009-2F	890-960 & 1710-2170	ISM915, ISM915, GSM900, GSM1800, PCS1900 & 3G UMTS	2dBi (890-960MHz) & 5dBi (1710-2170MHz)	166 (6.5")
MAR-2008-2F	801-896 & 1710-2170	ISM868, GSM900, GSM1800, PCS1900 & 3G UMTS	2dBi (801-896MHz) & 5dBi (1710-2170MHz)	166 (6.5")
MAR-C3G-2F	805-960, 1710-2170	ISM868, AMPS850, ISM915, ISM925, GSM900, GSM1800, PCS1900 & 3G UMTS	2dBi	74 (2 9")
MAR-7-21	698-960, 1710-2170	LTE 700, AMPS850, GSM900, GSM1800, PCS1900, AWS & 3G UMTS	2dBi	100 (3 94")

+ range of adaptor leads available

EB-C3G

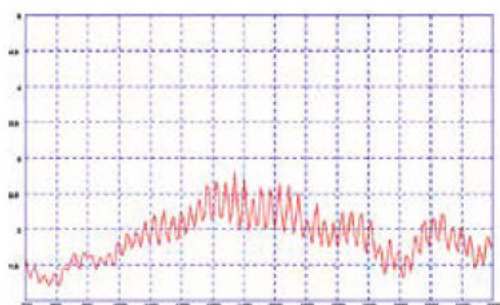
Euro base with multifrequency whip
Moulded cable option
Stylish design

The 'Euro' base panel mount (EB) has a smooth and discreet yet robust profile. The whip attaches with a screw thread recessed in the cap.

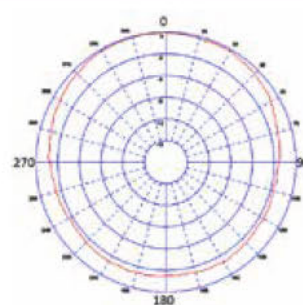
The compact cellular whip covers all global cellular bands thereby reducing inventory.



Typical VSWR (EB-ASFBADEP3G)



Typical H-Plane (850MHz)



Standard Data

Electrical Data		
Peak Gain: Isotropic		2dBi
Compared to ¼ wave		0dB
Polarisation		Vertical
Pattern		Omnidirectional
Impedance		50Ω
Max Input Power (W)		50
Mechanical Data		
Operating Temp (°C)		-40°/+80°C (-40°/+176°F)
Material		TPE /Nylon
Dimensions (mm)	Height Mounted	127 (5.0")
	Whip Length	100 (3.9")
Fixing		Panel mount
Cable Data		
Type		CS23 (RG58 c/u)
Diameter (mm)		5 (0.2")
Length (m)		5 (16')
Termination		FME Socket

Product Variants

Part No.	Frequency	Operational Band
EB-ASFBADEP3G	698-960 & 1710-2170	ISM868, ISM915, ISM925, GSM850, GSM900 GSM1800, PCS1900, 3G UMTS
EBM-ASFBADEP3G	698-960 & 1710-2170	ISM868, ISM915, ISM925, GSM850, GSM900 GSM1800, PCS1900, 3G UMTS
EB-C3G-SF	805-880, 890-960, 1710-1880, 1850-1990, 1900-2170	ISM868 / ISM925/ AMPS850 / GSM850, GSM900, GSM1800, PCS1900, 3G UMTS

WiFi/WiMAX Antennas



GPSF & FIN

Panel Mount

Compact and robust housing

Active GPS element (GPSF range only)



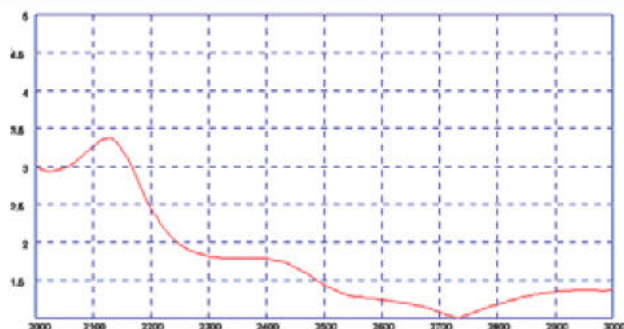
The FIN & GPSF range of antennas are compact and rugged range of panel mount antennas offering ISM868 & 3G UMTS, GSM & 3G UMTS or 2.4GHz WLAN.

The GPSF range also features an active GPS element, making it perfect for asset tracking.

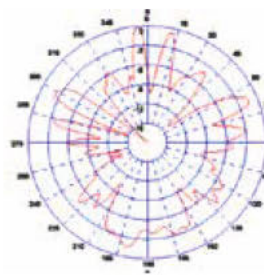
The antenna only requires a single hole for mounting and is installed on the roof of a vehicle. The combination of a low profile design and multi-functionality that the fin offers makes it an ideal choice for demanding applications.

The FIN & GPSF ranges meet stringent environmental testing to ensure they are suitable for rugged applications.

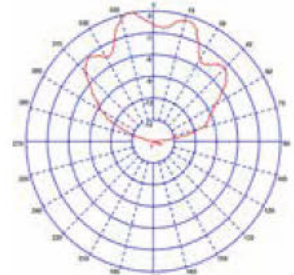
Typical VSWR (GPSF-24-58)



H-Plane (2400MHz)



GPS



Standard Data

Electrical Data		
Peak Gain: Isotropic		2dBi
Compared to 1/4 wave		0dB
Pattern		Omnidirectional
Impedance		50Ω
Max Input Power (W)		25
Mechanical Data		
Operating Temp (°C)		-40°/+80°C (-40°/+176°F)
Dimensions (mm)	Height	40 (1.6")
	Length	68 (2.7")
	Width	48 (1.9")
Mounting Data		
Fixing		Panel mount
Hole Diameter (mm)		14 (0.5")
Cable Data		
Type		RG174
Length (m)		0.3 (1')
Termination		FME Plug

Product Variants

Part No.	Frequency	Operational Band	GPS
GPSF-24-58	2400-2800	2.4GHz WLAN, 2.6GHz WiMAX	Yes
FIN-24-58-03SJ	2400-2800	2.4GHz WLAN, 2.6GHz WiMAX	No

GPS Data	
Frequency Range (MHz)	1575
VSWR	< 2.0:1 ± 4MHz
Gain: LNA	26dBi
Polarisation	Right Hand Circular
Operating Voltage	3 - 5V DC (fed via coax)
Current	Typical 15mA
Termination	FME Socket

WiFi/WiMAX Antennas Pentaband Stubby



PCX

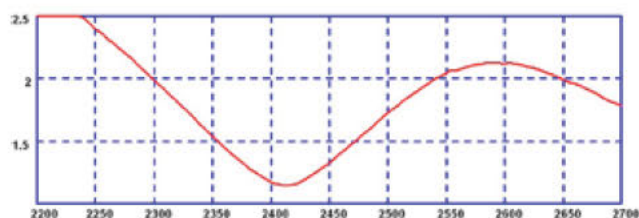
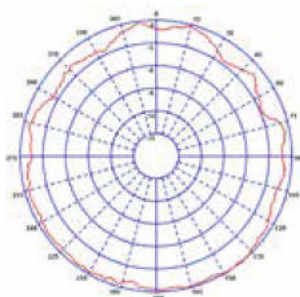
Rugged design for modems
Compact profile

This small antenna is perfect for hand-held devices that need wireless connectivity and has been engineered to survive in harsh and exposed environments.

This antenna is compatible with our range of TNC bulkhead cable assemblies on pg37

Typical H-Plane (2400MHz)

(PCX-TNC-W24)



Standard Data

Electrical Data	
Peak Gain: Isotropic	2dBi
Compared to $\lambda/4$ wave	0dB
Pattern	Omnidirectional
Polarisation	Vertical
VSWR	$\leq 1.5:1$
Impedance	50 Ω
Max Input Power (W)	25
Mechanical Data	
Operating Temp (°C)	-40°/+80°C (-40°/+176°F)
Material	Nylon & TPE

Product Variants

Part No.	Frequency	Operational Band	Connector
PCX-SMAP-24	2400-2500	WLAN	SMA plug
PCX-TNC-W24	2400-2470	WLAN	TNC plug

LPL-W24 & LGL-W24

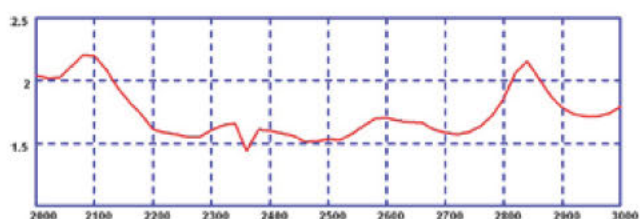
Rugged design
Heavy duty housing
Ground plane independent

The Panorama low profile antenna range has been designed to perform under extreme pressure. The outer housing is designed to withstand high impacts while maintaining its functionality.

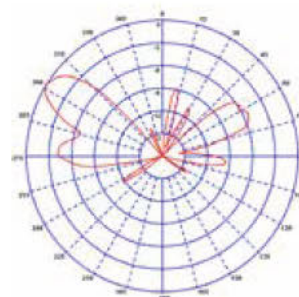
The antenna does not require a metallic ground plane, and maintains the same great performance when mounted on any surface.



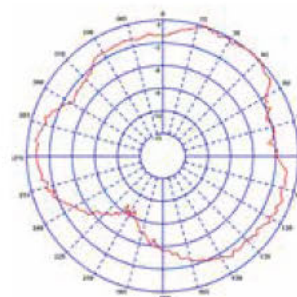
Typical VSWR (LPL-W24)



Typical E-Plane (2400MHz)



Typical H-Plane (2400MHz)



Standard Data

Electrical Data		
Frequency Range (MHz)		2400-2485
Operational Band		2.4GHz
Peak Gain: Isotropic		2dBi
Compared to ¼ wave		0dB
Pattern		Omnidirectional
Impedance		50Ω
Max Input Power (W)		25
Mechanical Data		
Operating Temp (°C)		-40°/+80°C (-40°/+176°F)
Dimensions (mm)	Height	32 (1.3")
	Diameter	104 (4.0")
Material		ASA
Fixing		Panel Mount
Cable Data		
Type		RG174
Length (m)		0.3 (1')
Termination		FME Plug

Product Variants

Part No.	GPS
LPL-W24	No
LGL-W24	Yes (see below)

GPS Data	
Frequency Range (MHz)	1575
VSWR	< 2 0:1 ± 4MHz
Gain: LNA	26dB
Polarisation	Right Hand Circular
Operating Voltage	3 - 5V V DC
Current	Typical 15mA



TCD-24



Versatile form
Simple & quick installation
Suitable for plastic enclosures

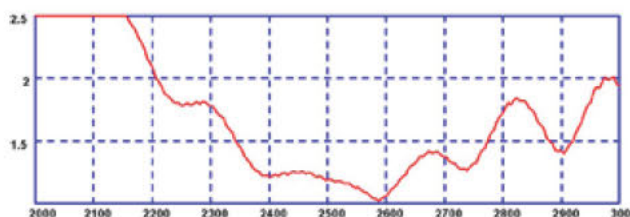
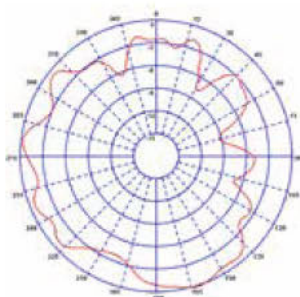
The deceptively small TCD-24-UF is an ideal antenna for Bluetooth, Zigbee and WLAN devices.

The compact TCD-24-UF removes the need for expensive external antennas by providing impressive performance at 2.4GHz. It has a component style PCB design, suitable for use within plastic device enclosures.

In a market where cost efficiency and performance often seem incompatible the TCD-24-UF removes any need for compromise.

Typical H-Plane (2400MHz)

(TCD-24)



Standard Data

Electrical Data		
Frequency Range (MHz)		2400-2500
Operational Band		2.4GHz WLAN
Peak Gain: Isotropic		2dBi
Compared to ¼ wave		0dB
Pattern		Omnidirectional
Impedance		50Ω
Max Input Power (W)		10
Mechanical Data		
Operating Temp (°C)		-40°/+80°C (-40°/+176°F)
Dimensions (mm)	Length	50 (1.9")
	Width	6.3 (0.2")
	Diameter	0.6 (0.02")
Mounting Data		
Fixing Holes Diameter (mm)		Ø 3 (0.1")
Connector		
Type	U.FL socket	

* A variety of UFL cables are available on pages 38 & 39

W24-CP-9

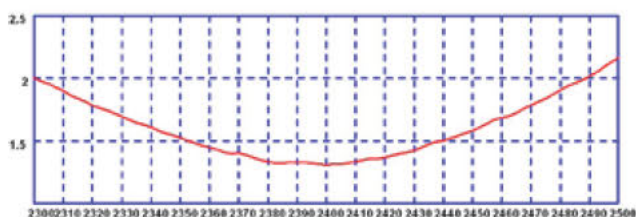
High gain directional antenna
Improves wireless network range
Point to point communications or sectoral coverage

The Panorama client patch antenna is a directional wall mounting or mast mounting antenna covering 2.4GHz. This antenna is ideal for point to point communications or can be used to cover a wide area thanks to its 65° azimuth and 65° elevation aperture.

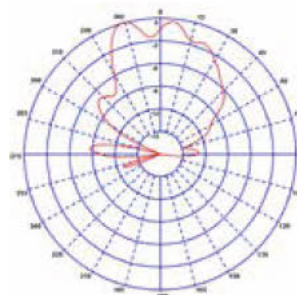
Ideal to infill network coverage or as a solution to provide better signal strength for subscribers terminals the W24-CP-9 is a cost effective solution to network coverage issues.



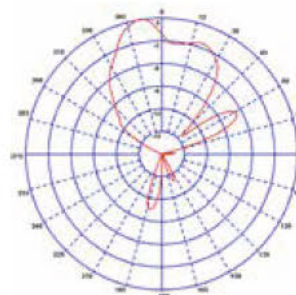
Typical VSWR (W24-CP-9)



Typical H-Plane (2400MHz)



Typical E-Plane (2400MHz)



Standard Data

Electrical Data		
Frequency Range (MHz)		2400-2485
Operational Band		2.4GHz WLAN
Peak Gain: Isotropic		9dBi
Compared to ¼ wave		7dB
VSWR		≤ 1.5:1
Pattern		Directional
Impedance		50Ω
Max Input Power (W)		50
Mechanical Data		
Operating Temp (°C)		-40°/+80°C (-40°/+176°F)
Dimensions (mm)	Height	93 (3.6")
	Length	93 (3.6")
	Width	25 (1.0")
Material		U.V light stable ABS & die cast aluminium
Fixing		Wall mount or Mast mount
Environmental Specification		
Wind Load / Resistance		11N at 150km/h
Connector Data		
Termination		SMA Socket



EF-W24

Waterproof

Internally or externally fitted

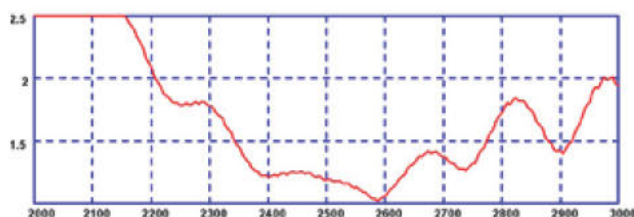
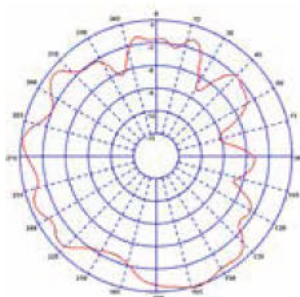
Simple & quick installation

The EF-W24 'easy fit' antenna is efficient & compact. Connected to an on board modem this easy fit antennas provide radical signal improvements.

With their secure but easy to fit adhesive pad mountings, the EF-W24 antenna provides a huge range of possibilities for the installer.

Typical H-Plane (2400MHz)

(EF-W24-SMAP)



Standard Data

Electrical Data		
Frequency Range (MHz)		2400-2485
Operational Band		2.4GHz WLAN
VSWR		≤ 1.5:1
Peak Gain: Isotropic		2dBi
Compared to ¼ wave		0dB
Pattern		Omnidirectional
Polarisation		Vertical
Impedance		50Ω
Max Input Power (W)		10
Mechanical Data		
Operating Temp (°C)		-40°/+80°C (-40°/+176°F)
Dimensions (mm)	Height	113 (4.45")
	Width	19 (0.75")
	Diameter	2.5 (0.1")
Material		TPE
Mount Fixing		Adhesive pad
Cable Data		
Type		RG174
Termination		SMA Plug

PG2400

Elevated design for modems
Ideal for portable device
Various versions offering different gains

PG type wireless terminal antennas are suitable for use with portable equipment.

This range of antennas is perfect for hand-held devices that need a reliable 2.4GHz wireless connection .

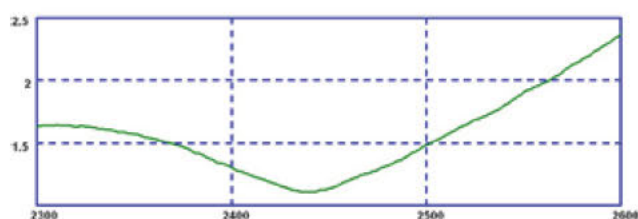
The PG2400-TNC offers a halfwave gain solution, while the more compact PG2400-SMA is ideal for shorter range applications



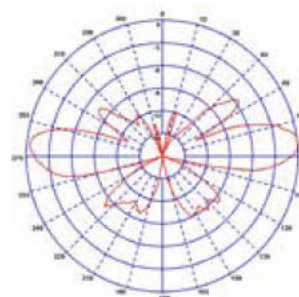
PG2400-TNC

PG2400-SMA

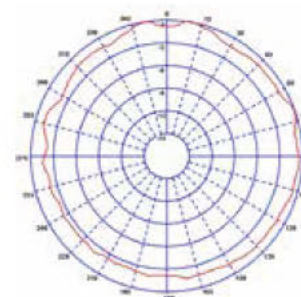
Typical VSWR (PG2400-SMA)



Typical E-Plane (2400MHz)



Typical H-Plane (2400MHz)



Standard Data

Electrical Data	
Frequency Range (MHz)	2300-2500
Operational Band	WLAN
VSWR	<1.5:1
Polarisation	Vertical
Pattern	Omnidirectional
Impedance	50Ω
Max Input Power (W)	5
Mechanical Data	
Operating Temp (°C)	-30°/+70°C (-22°/+158°F)
Material	TPE

Product Variants

Part No.	Peak Gain	Height	Connector
PG2400-TNC	4dBi	187 (7.36")	TNC plug
PG2400-SMA	2dBi	88 (3.46")	SMA plug

Cables & Accessories



C74-TMBJ

Water tight

Ingress protection equivalent to IP69

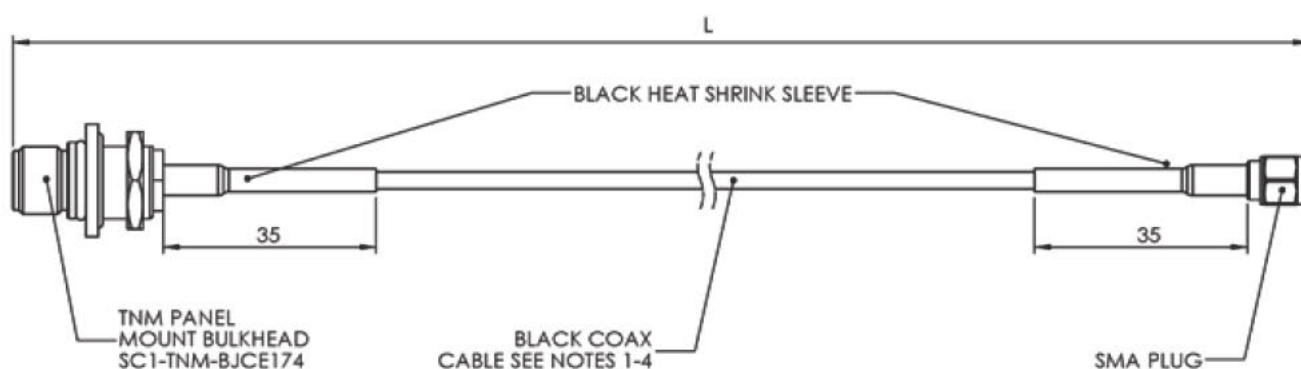
Easy to installation

The Panorama bulkhead connector range has been specially designed to provide a seal equivalent to IP69 when used with any of Panorama's TNM range of antennas. With two rubber o-rings this creates a water tight seal with the panel and the antenna connector.



Cable Data		C74-TMBJ-05SP	C74-TMBJ-1SP	C74-TMBJ-2SP
Type		RG174 Coax	RG174 Coax	RG174 Coax
Length (m)		0.5 (1.6')	1 (3')	2 (6.5')
Impedance		50Ω	50Ω	50Ω
Attenuation		1.3dB/m at 2.1GHz	1.3dB/m at 2.1GHz	1.3dB/m at 2.1GHz
Minimum connector pull off force (N)		50	50	50
Termination	Bulk head	TNM plug	TNM plug	TNM plug
	Radio end	SMA plug†	SMA plug†	SMA plug†

Technical Drawing



C137-UFL-01



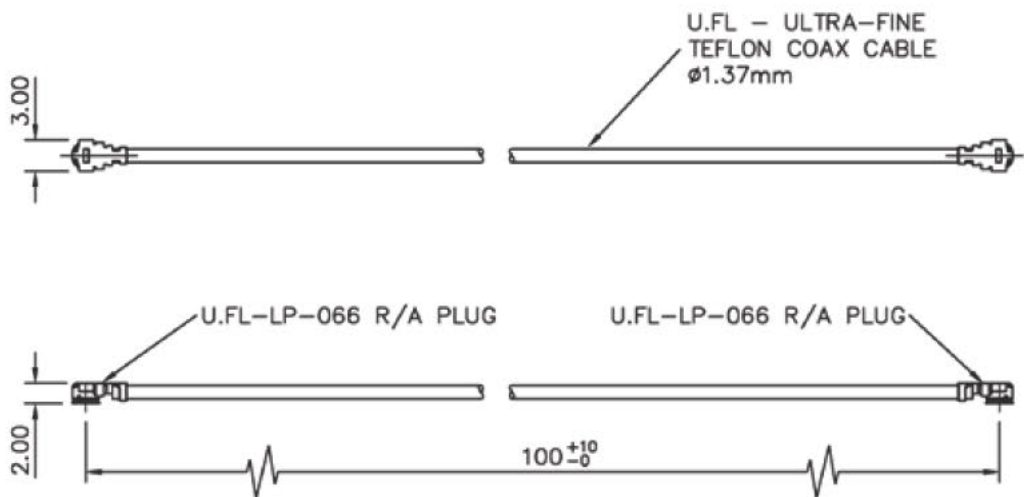
Cable for wireless modules
Snap fit U.FL connectors
Plug & play application

U.FL connectors have become the industry standard for M2M modules because of their ease of use and quick installation time. Panorama has a range of cable assemblies using the U.FL connector to suit various different antenna connectors available in our range.

A U.FL adaptor lead provides a quick, easy and cost effective way to supplement your data rates and transfer speeds using a better external or integrated antenna.

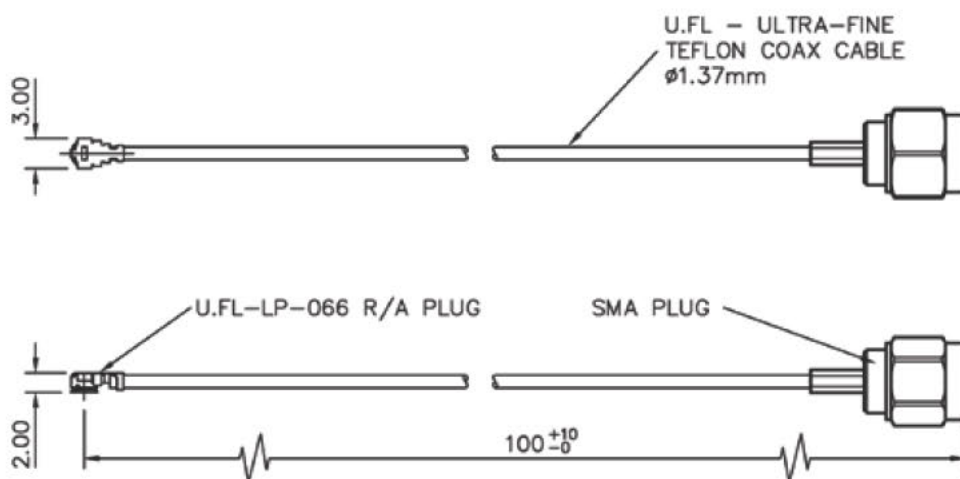
Cable Data			C137-UFL-01-UFL
Type			Ultra fine teflon coax
Length (m)			0.1 (0.3')
Diameter (mm)			1.37 (0.05")
Termination	Antenna end		Right angle U.FL plug
	Modem end		Right angle U.FL plug

Technical Drawing



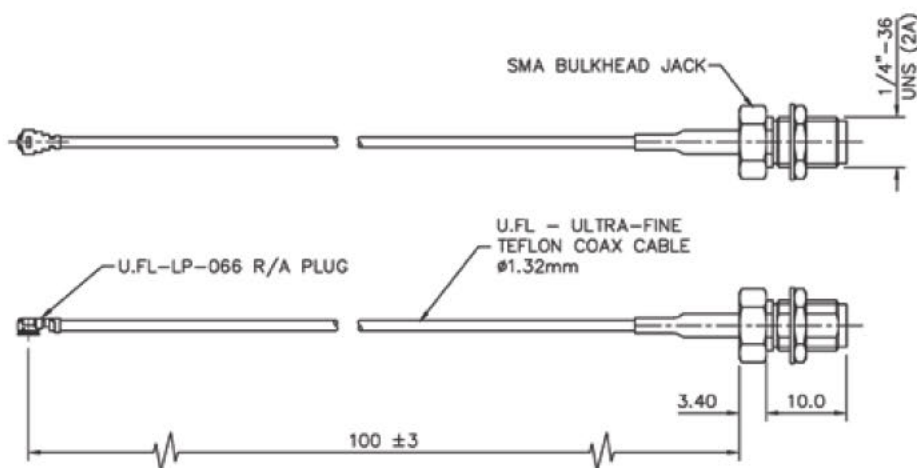
Cable Data		C137-UFL-01-SP
Type		Ultra fine teflon coax
Length (m)		0.1 (0.3')
Diameter(mm)		1.37 (0.05")
Termination	Antenna end	SMA plug
	Modem end	Right angle U.FL plug

Technical Drawing



Cable Data		C137-UFL-01-SMABJ
Type		Ultra fine teflon coax
Length (m)		0.1 (0.3')
Diameter (mm)		1.37 (0.05")
Termination	Antenna end	SMA Bulkhead Jack
	Modem end	Right angle U.FL plug

Technical Drawing

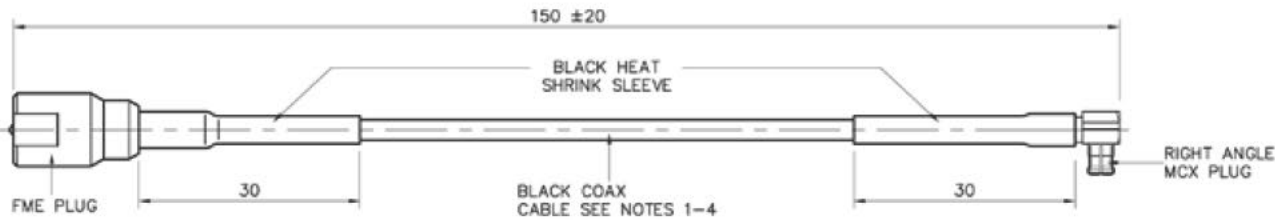


Cables & Accessories

Data Card Adaptor Leads

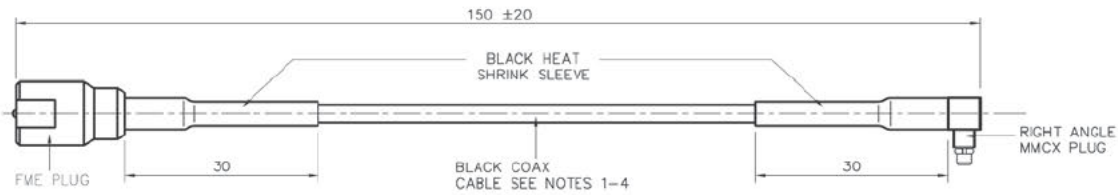
Cable Data		C74-FP-015-RMCXP
Type		RG174 Coax
Length (m)		0.15 (0.5')
Impedance		50Ω
Attenuation		1.3dB/m at 2.1GHz
Minimum connector pull off force (N)		50
Termination	Antenna end	FME plug
	Modem end	Right angle MCX plug†

Technical Drawing



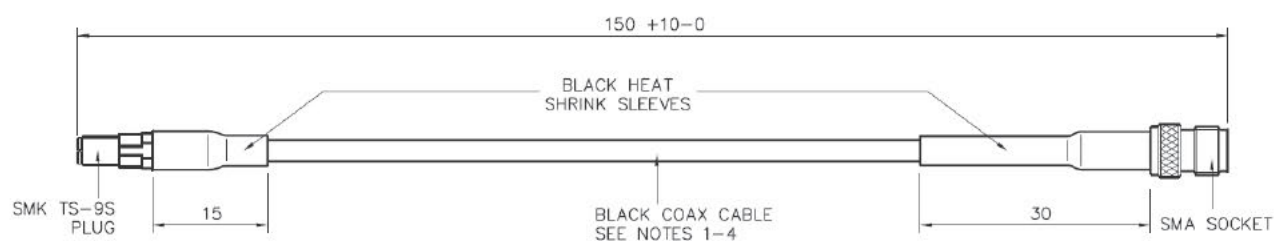
Cable Data		C74-FP-015-RMMCX
Type		RG174 Coax
Length (m)		0.15 (0.5')
Impedance		50Ω
Attenuation		1.3dB/m at 2.1GHz
Minimum connector pull off force (N)		50
Termination	Antenna end	FME plug
	Modem end	Right Angle MMCX Plug

Technical Drawing



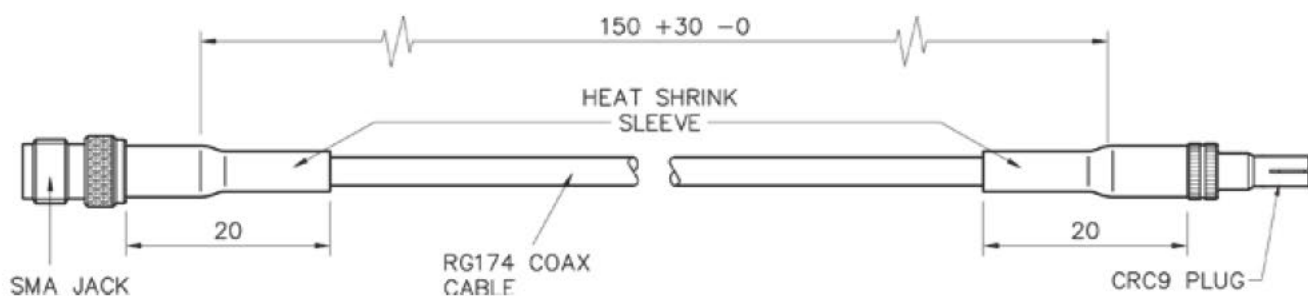
Cable Data		C74-SJ-015-TS9S
Type		RG174 Coax
Length (m)		0.15 (0.5')
Impedance		50Ω
Attenuation		1.3dB/m at 2.1GHz
Minimum connector pull off force (N)		50
Termination	Antenna end	SMA socket
	Modem end	TS9 plug†

Technical Drawing



Cable Data		C74-SJ-015-CRC9
Type		RG174 Coax
Length (m)		0.15 (0.5')
Impedance		50Ω
Attenuation		1.3dB/m at 2.1GHz
Minimum connector pull off force (N)		50
Termination	Antenna end	SMA socket
	Modem end	CRC9 plug†

Technical Drawing



† Other connectors available on the website



Panorama Support Tree

Panorama believes that quality service is essential and that every customer worldwide should have more than just one point of contact with us. As a global company, Panorama has a number of international sales representatives responsible for countries and regions. This enables Panorama to have someone on the ground who knows the local market and can use this knowledge to help customers.

Whilst the local sales representative is ultimately responsible for all customers in their region, they may not be available 24/7. Therefore, Panorama's headquarters in London is able to liaise with the customer over issues like purchase orders, delivery schedules, shipping details and information, sending of samples for evaluation, technical datasheets and other matters that our international sales representative may not be able to deal with immediately.

Panorama aims to answer all questions, and deal with any problems or queries within 24 hours of the original email being sent.

Important Waiver Information

All information and data in this catalogue is intended to provide an indication of the performance of our products under particular circumstances and none of it implies a guarantee of performance or fitness for any particular purpose.

We strongly encourage our customers to conduct their own tests in order to establish the appropriate product for any particular application.

All products should only be installed by a properly qualified installer familiar with appropriate local laws and regulations. We advise our customers to consult and comply with the appropriate Panorama Antennas installation instructions.

All specifications and product information in this catalogue is subject to change without notice.



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