



# Product Catalogue

## GSM & LTE Antennas

# 65 Years of Experience

Panorama Antennas is family business now in its third generation and 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.

## Antennas For Next Generation Technology

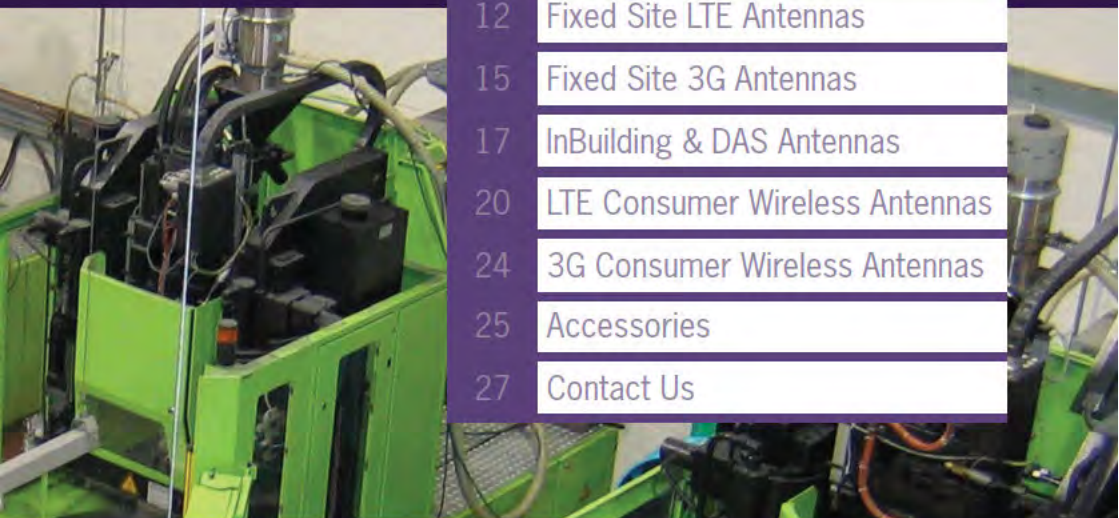
The growth of 4th generation technology presents new levels of opportunities as well as expectations of improved coverage and bandwidth, and has enriched the mobile broadband experience. Panorama's range of antennas for 3G+, WiMAX and LTE provides consistent improvement in connection and transfer speeds, both in stationary and mobile environments.

Panorama's global range of 2G, 3G and 4G antennas are compatible with an enormous variety of hardware from various manufacturers and networks. Our antennas have been developed to help users maintain a dependable data connection and fast transfer speeds wherever they are in the world and whatever the application.



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## Point of Sale Packaging

Ready to hang on peg or to go on shelf for retail environment

Detailed list of devices the antenna is compatible with

Easily adapted to customer requirements & branding

### Retail Ready

All 2G, 3G & 4G Consumer Wireless antennas can be packaged ready for a retail environment, either for sale as unique parts or as part of a promotion or bundle. This is either in a colour printed box for placing on a shelf or in a polythene bag for hanging on a euro-slot.

Custom product branding is possible in a number of ways depending on cost and quantity considerations. For medium to high volumes, logos and custom designs can be used on the box sleeve or bag backing card.

Low volumes can use a sticker on the product to help consumers identify which device the antenna is for.

### Not Just EAN

Each antenna in the Panorama range is different and is compatible with different mobile broadband devices. This can often leave consumers and sales advisers confused.

Panorama has worked with the major data card manufacturers to identify the correct antenna termination on each card and has compiled a detailed list which is used as a reference guide for the industry.

On the packaging of each antenna the list of compatible devices will make it easier and simpler for the consumer to receive the correct device.



## 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. Panorama is committed to meeting REACH requirements and can provide information about substances in accordance with the requirements.

## 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.

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## 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.

## LGMM & LPMM Ranges

Rugged low profile antenna containing:

2x Wideband LTE/cellular elements

Optional integrated GPS antenna (LGMM range)

Optional 2x 2.4 & 4.9-6GHz WiFi/WiMAX elements

The Panorama LGMM and LPMM low profile MIMO antenna ranges have been designed to support the new generation of vehicular LTE routers.

The antenna enclosure contains five isolated high performance antenna elements; two ultra-wideband elements covering 698-2700MHz and supporting MIMO/diversity at cellular/LTE frequencies, two optional dual band elements covering 2.3-2.7 & 4.9-6GHz and supporting MIMO/diversity operation for WiFi and WiMAX. The LGMM range also contains a high performance GPS antenna with an integrated 26dB gain LNA and high quality filtering to combat noise.

This antenna does not require a metallic ground plane, and maintains a high level of performance even when mounted on a nonmetallic surface.

## Standard Data

Electrical Data		
Frequency Range (MHz)		698-960, 1700-2700 (Cellular) 2.3-2.7/4.9-6GHz (WiFi/WLAN)
Peak Gain: Isotropic		2.3dBi (698-960) 5dBi (1700-2700) 2dBi (4900-6000)
VSWR		< 2.5:1 (Cellular) < 2:1 (WiFi/WLAN)
Mechanical Data		
Dimensions (mm)	Height	82 (2.4")
	Diameter	176 (6.7")
Material		ASA & diecast aluminium
Mounting type		Panel mount
Cable Data		
GPS Cables	Length	1' (0.3m)
	Termination	FME Female
Cell/LTE Cables x2	Length	1' (0.3m)
	Termination	SMA Male
WiFi/WiMAX Cables x2	Length	1' (0.3m)
	Termination	SMA Female





Part No.	What's Inside		
	2x Cellular	GPS	2x WiFi
LPMM[B][F]-7-27	✓	-	-
LGMM[B][F]-7-27	✓	✓	-
LPMM[B][F]-7-27-24-58	✓	-	✓
LGMM[B][F]-7-27-24-58	✓	✓	✓

[F] = FAKRA plug connectors replace normal connectors  
[B] = housing in black

## Connectors

### GPS



FME Female



FAKRA C Plug Blue

### Cell



SMA Male



FAKRA D Plug Bordeaux

### WiFi



SMA Female



FAKRA I Plug Beige

## GPSB



OEM shark fin style housing

GPS, 2G, 3G & 4G cellular & 2.4/4.9-6GHz in one housing

Heavy duty design for optional VHF or UHF whip

The GPSB provides antenna coverage for multiple technologies within one antenna housing. Trusted by utilities and transportation companies all over the world, the GPSB sets the industry standard in functionality.

The GPSB offers three internal antenna systems, GPS, 2G, 3G & 4G cellular, dual-band WiFi/WiMAX and an optional whip mounting for VHF or UHF whips.

Requiring only a single hole fixing, the GPSB reduces vehicle damage, cost of installation and visual impact, whilst protecting vehicle resale value.

The OEM shark fin style design provides multiple antenna functions whilst remaining discreet.

*FAKRA connectors also available.*

## Standard Data

Electrical Data		
Frequency Range (MHz)		1575 (GPS) 698-960, 1710-2170, 2500-2700 (Cellular) 2200-2700 & 4900-6000 (WLAN/WiFi) + Optional Whip
Peak gain: Isotropic		1dBi (Cellular) 2dBi (WLAN/WiFi)
Pattern		Omnidirectional
Mechanical Data		
Dimensions (mm)	Total Height	50 (2")
	Length	120 (4.72")
	Width	58 (2.3")
Material		Impact resistant UV light stabilised ABS
Ingress Protection		Equivalent to IP67 when properly installed
Cable Data		
Cable Type (All)		RG174
Length (mm)		Whip: 14 (360 mm) GPS: 13 (330 mm) Cellular: 12 (300 mm) WLAN: 11 (270 mm)
Termination	Whip	FME Male
	GPS	FME Female
	Cellular	SMA Male
	WLAN	SMA Female

## LPB-7-27-05SP

Low Profile

Excellent Bandwidth

High impact resistant housing

The Panorama LPB low profile antenna range has been designed to perform in any environment. 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 as well as all global cellular frequencies from 698-960 MHz and 1710-2700MHz, making it an extremely versatile product.

Supplied with a convenient adhesive pad and a short pigtail for connection to a cable extension run the antenna is cost effective to install and adaptable to any install environment.



Electrical Data		
Frequency Range (MHz)		764-960, 1710-2700
Peak Realised Gain: Isotropic	700/800 MHz	3dBi
	900/1800 MHz	4dBi
	1900/2100/2400/2600 MHz	5dBi
VSWR		<2.5:1
Pattern		Omnidirectional
Mechanical Data		
Dimensions (mm)	Height	82 (3.22")
	Diameter	48 (1.89")
Material		High Impact UV Stable ABS
Mounting Type		Panel mount
Cable Data		
Length (m)		0.5 (19.6")
Termination		SMA Male





## WMMG-7-27

- Supports MIMO across 2G, 3G & 4G
- Two wideband elements with gain
- Durable housing for indoor or outdoor use
- Suitable for mast, wall & desk mounting

The WMMG antenna offers an innovative and futureproof solution for 2G, 3G & 4G networks. It incorporates two separately fed ultra wideband elements in a single housing to provide client side MIMO and diversity support for the networks of today and tomorrow. The WMMG provides extra directional gain performance for networks where it is needed most.

5 metres of fitted, low-loss, double shielded twin cable minimises exposed connector joints and simplifies cable management for easy installation.

The WMMG is a cost effective, value added product for network operators and service providers. It ensures a stable link with improved data rates for subscribers, thereby improving satisfaction and retention.

## Standard Data

Electrical Data		
Frequency Range (MHz)	698-960, 1710-2700	
Peak Gain (excluding cable loss)	2dBi (698-960) 5dBi (1710-2170) 4dBi (2200-2700)	
VSWR	< 2:1	
Radiation Pattern	Hybrid	
Correlation coefficient (all bands)	< 0.2	
Element isolation	> 20dB	
Mechanical Data		
Dimensions (mm)	Height	186 (7.3")
	Width	155 (6.1")
Material	ASA	
Ingress Protection	Equivalent to IP66	
Mounting Type	Wall mount/mast mount/desk mount	
Cable Data		
Type	2 x CS29 Coax	
Length (m)	5 (16')	
Termination	2 x SMA Male (WMMG-7-27-SSP) 2 x FME Female (WMMG-7-27-5F)	

## WMM-7-27

Supports MIMO across 2G, 3G & 4G  
 2 x omnidirectional wideband elements  
 Suitable for mast, wall and desk mounting

The WMM antenna provides an innovative and future proof solution for 2G, 3G & 4G networks. Incorporating two separately fed ultra wideband elements in a single housing, the WMM is equipped to provide client side MIMO and diversity support for the networks of today and tomorrow.

The rugged, weatherproof housing is designed for wall mounting. Wall and mast mount brackets are provided.

5 metres of fitted low loss double shielded twin cable minimises exposed connector joints and simplifies cable management for easy installation.



Electrical Data		
Frequency Range (MHz)		698-960, 1710-2700
Gain - excluding cable loss (all bands)		> 2dBi
VSWR		< 2.5:1
Pattern		Directional
Correlation coefficient (all bands)		< 0.1
Element isolation		> 20dB
Mechanical Data		
Dimensions (mm)	Height	155 (6.10")
	Width	155 (6.10")
Material		ASA
Ingress Protection		Equivalent to IP66
Mounting Type		Wall mount/mast mount/desk mount
Cable Data		
Type		2 x CS29 Coax
Length (m)		5 (16')
Termination		2 x SMA Male (WMM-7-27-5SP) 2 x FME Female (WMM-7-27-5F)

## WM8-BADEP3G-NJ



High gain

Mast mount or wall mount

Waterproof housing

Integrate multiple wireless services into one antenna

A versatile high gain directional antenna for InBuilding applications, Panorama's WM8 range allows businesses and facilities to support multiservice/multi-operator wireless coverage. The WM8-ADEP3G supports 2G, 3G, 3G+ and 4G technologies including AMPS, PCS, GSM, UMTS & AWS.

The WM8 range is housed in impact resistant, UV light stable and flame retardant plastic. The antenna is sealed to be completely weatherproof and features a heavy duty N female connector making it ideal for indoor and outdoor deployment.



*This product features Panorama Antennas' PIM Guard Technology and will meet or exceed a third order intermodulation level of <-140.*

## Standard Data

Electrical Data		
Frequency Range (MHz)		698-896, 805-894, 890-960, 1710-1880, 1850-1990, 1900-2170
Peak Gain: Isotropic (All bands)		8dBi
VSWR		≤ 2.5:1 @ 700MHz band/≤ 2.7:1 @ 900MHz band/ ≤ 2.0:1 All other bands
Pattern		Directional
Mechanical Data		
Dimensions (mm)	Height	230mm (9.05")
	Width	180mm (7.08")
	Length	85mm (3.3")
Material		Flame Retardant UV Light Stable ABS
Mounting Type		Pole mount/wall mount
Connector Data		
Type		N Female



## WM11-ABOX &amp; WM11-DBOX

High gain at all frequencies

Wall mount, mast mount or desk mount

Waterproof housing

The WM11 range is an ultra high gain panel antenna designed to improve signal strength, data speeds and stability in low coverage areas.

Positioned in the direction of the nearest base station, the WM11 ensures optimum signal strength.

Mounted on a wall or on a mast, the WM11 range is waterproof and UV stable so it can withstand any weather conditions.



Wall mount option

Desk mount option

## Standard Data

Part No.		WM11-ABOX	WM11-DBOX
<b>Electrical Data</b>			
Frequency Range (MHz)		805-894, 1710-1880, 1850-1990, 1900-2170	890-960, 1710-1880, 1850-1990, 1900-2170
Gain: Isotropic		8dBi (805-894) 9dBi (1710-1900) 11dBi (1900-2170)	8dBi (890-960), 9dBi (1710-1900) & 11dBi (1900-2170)
VSWR		≤ 2.0:1	≤ 2.0:1
Pattern		Directional	Directional
<b>Mechanical Data</b>			
Dimensions (mm)	Height	160 (6.2")	160 (6.2")
	Width	142 (5.5")	142 (5.5")
	Depth	50 (1.9")	50 (1.9")
Material		ASA	ASA
<b>Mounting Data</b>			
Fixing		Pole Mount/wall mount/desk mount	Pole mount/wall mount
Pole Diameter (mm)		20 - 50 (0.7" - 1.9")	20 - 50 (0.7" - 1.9")
<b>Cable Data</b>			
Type		Low Loss Coaxial Cable	Low Loss Coaxial Cable
Length (m)		2 & 10 (6' 6" - 32' 9")	2 & 10 (6' 6" - 32' 9")
Termination		FME Female	FME Female



## B4BE-7-27

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 & 4G applications the world over.

These antennas provide an ideal solution for modem devices whether for domestic or business wireless data or for machine to machine applications and connected devices.

## Standard Data

Electrical Data		
Frequency Range (MHz)		698-960, 1710-2700
VSWR		< 2.5:1
Gain: Isotropic		2dBi (698-960) 4dBi (1710-2700)
Pattern		Omnidirectional
Mechanical Data		
Dimensions (mm)	Height	164 (6.46")
	Depth	48 (1.89")
Material		A.B.S., Aluminium and Galvanised Steel
Mounting Data		
Fixing		Wall mount or mast mount
Cable Data		
Type		CS29
Length (m)		5 (16' 4") (B4BE-7-27-5SP) 0.5 (19.6") (B4BE-7-27-05SP)
Termination		SMA Male

## CM-7-60-NJ

Discreet ceiling mount design  
Highly efficient wideband coverage  
Small footprint and removable valance

A compact ceiling antenna providing optimum InBuilding or DAS coverage for all network requirements. Concealed beneath the antenna housing is a highly efficient wideband element capable of supporting 2G, 3G & 4G/ WLAN and WiMAX networks from 698-960MHz and 1710-6000MHz.

Suitable for indoor or outdoor use, the antenna only requires one mounting hole for installation but offers additional screw fixing holes located beneath a rotating valance. The antenna is ground plane independent and can be fitted onto both thick and thin ceiling tiles.



*This product features Panorama Antennas' PIM Guard Technology and will meet or exceed a third order intermodulation level of <-140.*



## Standard Data

Electrical Data		
Frequency Range (MHz)		698-960, 1500-6000
Radiation pattern		Omnidirectional
VSWR		< 2.5:1
Peak Gain		2dBi (698-960) 5dBi (1710-2170) 7dBi (2200-6000)
Typical Passive intermod. (2x20W, 3rd ord.) dBc+		<-140
SAR & 'Touch Safe' Test Data		According to 50385:2002 (Bands: 850,900,1800,2100,2600 MHz)
Mechanical Data		
Dimensions (mm)	Height	93 (3.6")
	Diameter	205 (8")
Material		U.V. Stabilised flame retardant ABS, aluminium base plate
Mounting Data		
Fixing		3 x 4.5mm fixing holes and/or N socket lock wheel
Diameter (mm)		4.5 (0.2")/16 (5/8")
Depth (mm)		41 (1.6")
Termination		N Socket



## CMMG-7-60-NJ



- Discreet ceiling mount design
- 2 x ultra wideband elements
- Concealed screw fixings
- Low PIM & SAR tested to EN50385:2002

The CMMG-7-60-NJ ceiling antenna offers low PIM 2x2 MIMO coverage across 2G, 3G & 4G frequencies for InBuilding and DAS installations in a discreet and easy to install housing.

The antenna only requires two mounting holes for installation via the fitted low PIM N connectors. It is ground plane independent and can be fitted onto both thick and thin ceiling tiles.

## Standard Data



*This product features Panorama Antennas' PIM Guard Technology and will meet or exceed a third order intermodulation level of <-140.*

Electrical Data		
Frequency Range (MHz)		698-960, 1500-6000
Radiation pattern		Omnidirectional
VSWR		< 2.5:1
Isolation (across connectors)		>15dB
Peak Gain (both elements fed)		2dBi (698-960) 5dBi (1710-2170) 7dBi (2200-6000)
Typical Passive intermod. (2x20W, 3rd ord.) dBc *		<-140
SAR and ‘Touch Safe’ Test Data		According to 50385:2002 (Bands: 850, 900, 1800, 2100, 2600MHz)
Mechanical Data		
Dimensions (mm)	Height	90 (3.5")
	Length	220 (8.66")
	Width	106 (4.17")
Material		U.V. Stabilised flame retardant ABS, aluminium base plate
Mounting Data		
Fixing		4 x 6mm screw fixing holes and/or 2x N socket lock wheel
Diameter (mm)		6 (0.24")/15.9 (0.62")
Depth (mm)		41 (1.6")
Termination		2x N Socket

## CMWB2-038-6-NJ

Ceiling mount design

Future proof UHF and cellular coverage

Concealed screw fixings

Low PIM & SAR tested to EN50385:2002

A true wideband system, the CMWB2-038-6-NJ allows businesses and facilities to support multi-service/multi-operator wireless coverage.

A huge number of services are supported from 380MHz UHF to 6GHz - including TETRA UHF, GSM400, AWS 1700MHz, Quadband GSM, 3G UMTS, 2.4GHz WLAN, LTE & WiMAX etc. Enabling simultaneous connectivity for employees, consumers and emergency services.

The CMBW2 provides InBuilding service providers and DAS installers with a convenient one size fits all solution.

*This product features Panorama Antennas' PIM Guard Technology and will meet or exceed a third order intermodulation level of <-140.*



## Standard Data

**Electrical Data**

Frequency Range (MHz)	380-6000
Radiation pattern	Omnidirectional
VSWR	< 2.7:1
Peak Gain	2dBi (380-800) 3dBi (800-1000) 6dBi (1000-6000)
Typical Passive intermod. (2x20W, 3rd ord.) dBc <sup>+</sup>	<-140
SAR & 'Touch Safe' Test Data	According to 50385:2002 (Bands: 850,900,1800,2100MHz)

**Mechanical Data**

Dimensions (mm)	Height	155 (6.1")
	Diameter	266 (10.47")
Radome Material	Geloy PC/ASA (meets UL746C f1)	
Flame Retardance	UL94-5VB (chlorine and bromine free)	

**Mounting Data**

Fixing	4 x 6 mm fixing holes and/or N socket lock wheel
Diameter (mm)	6 (0.24")/16 (0.62")
Depth (mm)	41 (1.6")
Termination	N Socket

## DMM-7-27



Wideband MIMO solution

Packs flat for easy transportation

Desk stand, screen clip or window mount

The DMM offers a portable, lightweight and stylish MIMO solution for your 4G connection. With 2G/3G fallback, the DMM guarantees a secure connection and high data rates in any location. The unique 'X' design enables MIMO connectivity across a huge frequency range.

The DMM comes fully equipped with 3 solutions for different mounting options. With fold away feet, laptop screen clips and suction cups for window mounting, the DMM is ready for every possible situation.

## Standard Data

Electrical Data		
Frequency Range (MHz)		698-960, 1710-2700
Radiation Pattern		Omnidirectional
VSWR		< 2.5:1
Peak Gain (excluding cable loss)		2.5dBi (698-960) 4dBi(1710-2170) 3dBi(2200-2700)
Correlation Coefficient (all bands)		< 0.1
Element Isolation		> 20dB
Mechanical Data		
Dimensions (mm)	Height	137 (5.4")
	Width	151 (5.94")
Material		U.V. Stabilised ABS
Fixing		Desk mount/screen clip/window mount
Cable Data		
Type		2 x RG174
Length (m)		2 (6.56')
Termination		2 x SMA Male (DMM-7-27-2SP) 2 x SMK TS9 Male (DMM-7-27-2TS9) 2 x CRC9 Male (DMM-7-27-2CRC9)



## TPD-BC3G-26

Hook and loop attachment for laptops

Suitable for OEM bundling

Slimline and lightweight to enhance LTE signal on the go

This simple multi-band solution can be used to enhance performance of USB modems. The small size and low cost makes it an ideal in-box accessory for customer retention offers or promotional deals.

Its innovative hook and loop attachment for laptops allows it to easily be utilised on the move, whilst it's small and streamlined design means that when not in use it slips conveniently into a laptop bag or briefcase.



Electrical Data		
Frequency Range (MHz)		698-960, 1575, 1710-2170, 2396-2700
VSWR		<2.5:1
Peak Gain: Isotropic		2dBi
Pattern		Omnidirectional
Mechanical Data		
Dimensions (mm)	Length	131 (5.16")
	Width	20 (0.79")
	Depth	7 (0.27")
Material		ABS
Type		Adhesive hook & loop pad
Cable Data		
Type		RG174
Length (m)		0.5 (19.7")
Termination		TS9 Male (TPD-BC3G-26-05TS9) CRC9 Male (TPD-BC3G-26-05CRC9) SMA Male (TPD-BC3G-26-05SMAF)



### MAR-7-21-2SP

Magnetic mount base for temporary installation

Covers 2G, 3G, 4G cellular

Compact overmoulded design for durability

The MAR-7-21-2SP is a compact, flexible cellular whip with a magnetic base for temporary mounting situations. This versatile whip performs across six major cellular/GSM/LTE bands supporting 2G, 3G and 4G cellular technologies.

The stylish flexible design of the antenna whip makes it both discreet in appearance and resistant to damage.

### Standard Data

Electrical Data		
Frequency Range (MHz)		698-960, 1710-2170
Gain: Isotropic		2dBi
Pattern		Omnidirectional
Mechanical Data		
Dimensions (mm)	Whip Length	100 (3.94")
	Base Diameter	10.5 (0.41")
Material		TPE + Polyamide
Fixing		Magnetic Mount
Cable Data		
Type		RG174
Length (m)		2 (6.5')
Termination		SMA Male

## W21-CP-9

High gain directional antenna  
Improves 3G/UMTS network range  
Point to point communications

The Panorama client patch antenna is a directional wall mounting or mast mounting antenna covering 2.1GHz. This antenna is ideal for point to point communications or used to cover a wide area thanks to its 65° azimuth and 65° elevation.

Ideal to infill network coverage or subscriber terminals the W21-CP-9 is a cost effective solution to network coverage issues.



Electrical Data		
Frequency Range (MHz)		1900-2170
VSWR		≤ 1.5:1
Gain: Isotropic		9dBi
Pattern		Directional
Mechanical Data		
Dimensions (mm)	Height	93 (3.6")
	Width	93 (3.6")
	Depth	25 (0.9")
Material		UV stable ABS & Die cast aluminium
Mounting Data		
Fixing		Wall mount or Mast mount
Connector Data		
Termination		SMA socket





## PWB-7-27-RSMAP

Easy to install plug and play solution  
Articulated right angled connector  
Covers LTE, 2G, 3G & 4G, WiMAX & GPS

Ultra-broadband antenna with articulated right-angled connector, ideal for modems and terminals. Performing at all 2G, 3G & 4G frequencies, the PWB keeps up with the most advanced terminals on the market today.

As an easy to install, plug and play antenna, it is ideal for any developers kit.

## Standard Data

Electrical Data		
Frequency Range (MHz)		690-960, 1575, 1700-2700
Gain: Isotropic		2dBi
Pattern		Omnidirectional
Mechanical Data		
Dimensions (mm)	Height	190.5 (7.5")
	Width	100 (3.9")
	Depth	17.5 (0.6")
Material		ABS
Terminal Data		
Type		Right hand 90° hinge
Termination		SMA Male

C74-FP-015

Cable for data cards  
Various connectors available  
Plug & play application

Connecting an external antenna to a 3G modem or data card can make a great difference to data transfer speeds. Panorama Adaptor leads are designed to fit most Data Cards, Express Cards and USB modems that have antenna ports, transferring the signal to a better positioned antenna.

Panorama provides compatible adaptor leads for all major modem and data card manufacturers and models.



Cable Data	
Type	C74
Impedance	50Ω
Attenuation	1.25dB/m @ 1.575GHz
Outer Diameter (mm)	2.5 (0.09")
Outer Jacket	Black Flexible PVC
Length (mm)	15 (0.6")

Termination Data

Part No.	Termination 1	Termination 2
C74-FP-TS9S	FME Plug (male)	TS9S Plug (male)
C74-FP-SMAP	FME Plug (male)	SMA Plug (male)
C74-FP-CRC9	FME Plug (male)	CRC9 Plug (male)
C74-SJ-TS9S	SMA Jack (female)	TS9S Plug (male)
C74-SJ-CRC9	SMA Jack (female)	CRC9 Plug (male)




## 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.





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