MOBILE MARK®
COMMUNICATION ANTENNAS

Introducing the Ultimate in Multiband Antennas

There are No limits!

How will you use the SMW Antenna?

School Bus: GPS for vehicle tracking. Cellular to communicate the location to the central monitoring station, and WiFi for video or data streaming to and from the bus

Train: GPS for timing, Cellular for M2M telemetry, and WiFi for transit surveillance or a quick data uplink at the main terminal

Delivery Van: GPS & Cellular for location tracking and fleet management, WiFi for data collection and transfer. Mag-mount option for quick setup also available

Truck: GPS for standard tracking, Cellular for real time connections, a second 1.9 GHz for data diversity, and fourth cable for Orbcomm for long range coverage

As the number of wireless applications explode, installing more and more antennas on a single vehicle is becoming difficult, if not impossible.

"If your dilemma can be described as -- so many wireless applications, so little roof space -- then Mobile Mark has the solution."

The new SMW Series Antenna provides simultaneous operation on a variety of bands, all in one compact antenna. These multiband antennas can accommodate two, three or even four different applications.

There are many reasons why someone might want to use multiple applications, for example, 3-cables allow the installer to combine GPS, Cellular and WiFi: the GPS antenna for vehicle tracking, the Cellular antenna to communicate the location and the WiFi antenna for quick data download at the dock door. Add a fourth cable to be part of an emergency response mesh network at 4.9 GHz.

"The SMW Series can accommodate a wide variety of combinations; the applications are almost endless."

Network designers can draw on a large range of wireless systems to figure out which combination best meets the customers' needs. Combinations are drawn from: GPS, Cellular & GSM, AWS, WiFi, WiMAX, Orbcomm, and Public Safety.

Normally, each application would require its own separate antenna. The SMW Series cuts down on install time and money by reducing the number of installations as well as reducing the size of the footprint. The SMW measures only 4.2" (11 cm) in diameter and 3.2" (8 cm) in height, significantly less than would be required for multiple antennas.

Mobile Mark used cutting edge technology to efficiently combine multiple antennas in the same radome. Each band is effectively isolated from interference from another band. The antennas feature efficiency ratings of up to 95%, extremely high ratings for mobile antennas.

"This high efficiency antenna has already passed PTCRB certification testing with a number of different systems."

The SMW Series are extremely rugged, making them ideal for industrial and commercial grade applications.

The antenna is easy to install and mechanically sound, this thru-hole antenna is sealed with a thick gasket and has a water ingress rating of IPX7 when properly mounted.

The radome is made from a heavy duty UV stable ASA plastic. The off-set conical shape and sturdy radome material resists damage from either vandalism or accidental impacts.

Product Selection Table

Please read down a column to identify all of the models that apply

Model Series	Cellular & GSM	Cellular Diversity	AWS 1.7-2.2 GHz	WiFi 2.4 GHz	WiFi 2.4 & 5.0 GHz	WiMAX 2.3-2.7 GHz	WiMAX 3.4-3.8 GHz	700 MHz band	Orbcomm	4.9 MHz	GPS
SMW-UMB	●		●	●		●					●
SMW-301	●		●	●	●	●				●	●
SMW-302	●	●	●	●		●					●
SMW-303				●	●					●	●
SMW-304				●	●					●	●
SMW-305				●	●			●		●	●
SMW-306				●			●			●	●
SMW-401	●	●	●	●		●					●
SMW-402	●		●	●	●	●				●	●
SMW-403	●		●	●		●			●		●
SMW-404	●		●	●	●	●				●	●
SMW-405	●		●	●		●					●
SMW-406	●		●	●	●	●				●	●
MGW-UMB	●		●	●		●					●
MGW-301	●		●	●	●	●				●	●
MGW-302	●	●	●	●		●					●
MGW-303				●	●					●	●
MGW-304				●	●					●	●
MGW-305				●	●			●		●	●
SMW-UMB-XXXX00	●		●	●		●					
SMW-301-XXXX00	●		●	●	●	●				●	
SMW-302-XXXX00	●	●	●	●		●					
SMW-303-XXXX00				●	●					●	
SMW-404-XXXXXX00	●		●	●	●	●				●	
SMW-405-XXXXXX00	●		●	●		●					
SMW-406-XXXXXX00	●		●	●	●	●				●	

In addition to customizing the bands covered by the antenna, Mobile Mark can also customize the cables and connectors. The specifics are called out in the model number.

Low loss RF-195 cable is typically used on the SMW antennas. Installers find it easy to work with and it ensures minimum losses, which is especially important at the higher frequency bands. RG-174 cable is used with the GPS antenna.

A long list of connector options is available for each of the different feeds. The only limitation is whether or not the connector can be fitted to the cable.

Most of the SMW antennas are configured with GPS, but the antenna can also be configured without GPS.

When GPS is eliminated from the antenna, the final cable & connector pair is coded with double zeros "00", e.g. SMW-301-1A3C00. Some of the more common "non-GPS" models are listed on the back page in a separate table.

The typical model number contains the antenna family, the frequency combinations and the individual cable/connector combination.

Example: MMM-AAA-XXYYZZ

"MMM" indicates surface or mag-mount

"AAA" indicates frequency combination

"XXYYZZ" indicates 3 cable/connector combinations

Each cable/connector code is two-digits long. The number in the pair indicates the cable and the letter in the pair indicates the connector.

For example, the SMW-UMB-3A3C2B indicates:

SMW	SMW Series
UMB	Cellular, WiFi & GPS combination
3A	Cable 1 (Cellular): RF-195 & TNC
3C	Cable 2 (WiFi): RF-195 & SMA
2B	Cable 3 (GPS): RG-174 & SMB

Models with 3-cables

The unique modular construction of the SMW antennas means that a large number of combinations are possible.

The broadband nature of some of the antenna elements also provides flexibility for network changes down-the-road. For example, the 800 MHz – 2.7 GHz antenna element can be used today for Cellular & GSM networks and then used tomorrow for WiMAX.

Model Series	Cable #1	Cable #2	Cable #3
SMW-UMB	800 MHz – 2.7 GHz	2.4 GHz	1575 MHz
SMW-301	800 MHz – 2.7 GHz	2.4 & 4.9-6.0 GHz	1575 MHz
SMW-302	800 MHz – 2.7 GHz	1.7 – 2.7 GHz	1575 MHz
SMW-303	2.4 & 4.9-6.0 GHz	2.1-2.5 & 4.4-6.0 GHz	1575 MHz
SMW-304	2.4 GHz	2.4 & 4.9-6.0 GHz	1575 MHz
SMW-305	694-894 MHz	2.4 & 4.9-6.0 GHz	1575 MHz
SMW-306	2.4 GHz	3.3-6.0 GHz	1575 MHz

Models with 4-cables

For maximum coverage, the SMW can be configured with 4-cables to cover four different applications. The current listing reflects the specific combinations that have been requested to-date, but other combinations can be accommodated on request.

Some 4-cable antennas maintain the same form as the standard SMW antenna, but the SWM-403 (SMW with Orbcomm) adds an external whip antenna for Orbcomm coverage. This antenna has an extremely high efficiency rating on the Orbcomm channel.

Model Series	Cable #1	Cable #2	Cable #3	Cable #4
SMW-401	800 MHz – 2.7 GHz	2.4 GHz	1.7 – 2.7 GHz	1575 MHz
SMW-402	800 MHz – 2.7 GHz	2.4 GHz	2.4 & 4.9-6.0 GHz	1575 MHz
SMW-403	800 MHz – 2.7 GHz	2.4 GHz	137 MHz (Orbcomm)	1575 MHz
SMW-404	800 MHz – 2.7 GHz	2.4 & 4.9-6.0 GHz	2.1-2.5 & 4.4-6.0 GHz	1575 MHz
SMW-405	800 MHz – 2.7 GHz	2.4 GHz	1575 MHz	1575 MHz
SMW-406	800 MHz – 2.7 GHz	1.7 – 2.7 GHz	2.1-2.5 & 4.4-6.0 GHz	1575 MHz

The applications are almost endless!

City Bus: Cellular to communicate with the central office, WiFi to communicate to the passing bus shelter

Emergency Vehicle: GPS for vehicle tracking, Cellular for data, WiFi for Mobile Hotspot and 4.9 for Public Safety mesh networking at 4.9 GHz

Agri-business: GPS for location-specific treatment, cellular for data transfer, option for second cellular antenna reserved for voice

Police: GPS for positioning, Cellular for real time internet connections, WiFi for surveillance and a fourth cable for Public Safety mesh networking a 4.9 GHz

Mag-mount models

These versatile antennas can be configured for temporary mount applications with the addition of a magnet mount base. The Mag-Mount Series begins with "MGW" and can accommodate up to three cables. The antenna is housed in a rugged dome-shaped antenna, available in either black or white, and can be moved easily from vehicle to vehicle.

Model Series	Cable #1	Cable #2	Cable #3
MGW-UMB	800 MHz – 2.7 GHz	2.4 GHz	1575 MHz
MGW-301	800 MHz – 2.7 GHz	2.4 & 4.9-6.0 GHz	1575 MHz
MGW-302	800 MHz – 2.7 GHz	1.7 – 2.7 GHz	1575 MHz
MGW-303	2.4 & 4.9-6.0 GHz	2.1-2.5 & 4.4-6.0 GHz	1575 MHz
MGW-304	2.4 GHz	2.4 & 4.9-6.0 GHz	1575 MHz
MGW-305	694-894 MHz	2.4 & 4.9-6.0 GHz	1575 MHz
MGW-306	2.4 GHz	3.3-6.0 GHz	1575 MHz

Models without GPS

The SMW Series is most commonly configured with GPS, but some applications may call for the robust radome and only the non-GPS wireless connections. The cable/connector identifiers for GPS are always listed at the end of the model numbers, regardless of where it is part of the 300-Series or 400-Series antennas. Simply replace the last two cable/connector identifiers with "00" to indicate that there is no GPS antenna module in the antenna model.

Model Series	Cable #1	Cable #2	Cable #3
SMW-UMB-XXXX00	800 MHz – 2.7 GHz	2.4 GHz	N/A
SMW-301-XXXX00	800 MHz – 2.7 GHz	2.4 & 4.9-6.0 GHz	N/A
SMW-302-XXXX00	800 MHz – 2.7 GHz	1.7 – 2.7 GHz	N/A
SMW-303-XXXX00	2.4 & 4.9 - 6.0 GHz	2.1-2.5 & 4.4-6.0 GHz	N/A
SMW-404-XXXXXX00	800 MHz – 2.7 GHz	2.4 & 4.9-6.0 GHz	2.4 & 4.9-6.0 GHz
SMW-406-XXXXXX00	800 MHz – 2.7 GHz	1.7 – 2.7 GHz	2.1-2.5 & 4.4-6.0 GHz





These Mobile Mark antennas are designed to be both electrically efficient and mechanically sound. The antenna elements incorporated within the antenna provide efficient coverage and perform well on electrical tests such as the VSWR measurements.

In addition, the Mobile Mark SMW Series antennas are tested to vigorous industry standards for shock, vibration, water resistance, and temperature. These tests include Shock and Vibration testing to EN61373, IEEE1478, MIL-STD-810G; vibration testing to TIA-329.2-C; water ingress testing to IPX7 of the IE60529 standard; and temperature cycling testing to MIL-STD-810.

Mechanically, the antennas are rugged enough for commercial and industrial application and attractive enough for consumer applications. The unique shape of the radome offers practical advantages as well; it sheds ice & snow easily and resists impact.

The SMW and MGW Multiband Antennas have received high marks across the industry. From Truck Fleets to Trains to Buses to Vans, these antennas have proven themselves time and time again in different settings and in different applications. It is no wonder these antennas are considered by many to be the industry gold standard for multiband coverage.

Mobile Mark, Inc.
3900-B River Road
Schiller Park, IL 60176, USA
Tel: +1 847-671-6690
Fax: +1 847-671-6715
Email: info@mobilemark.com
Web: www.mobilemark.com

Mobile Mark (Europe), Ltd.
106 Anglesey Business Park
Hednesford, Staffs. WS12 1NR, UK
Tel: +44 1543 878343
Fax: +44 1543 871714
Email: enquiries@mobilemarkeurope.co.uk
Web: www.mobilemark.com