

## GPS & IRIDIUM ANTENNAS WITH BROAD BEAM WIDTH



**MARUWA** offer a unique class of dielectric-loaded multi-filar antennas which provide unrivalled performance in applications which:

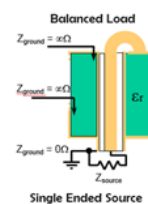
### The most important detail: A Pattern with Broad Beam-Width

MARUWA's multi-filar antennas offer a broader angle of reception than patch antennas. This enables the antenna to track more satellite signals even when the device is tilted from the upright angle of use. The device provides faster and more robust position fixes and an overall better user experience. The device is handheld, body-worn, or otherwise surrounded by materials of high relative dielectric constant which would de-tune other antennas. The antenna is installed in close proximity to other antennas sharing the same device housing and ground plane and it is necessary to avoid cross-interference. For example if a

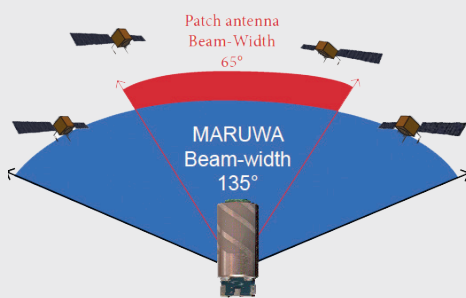
MARUWA GPS receiving antenna is co-sited with Bluetooth, Wifi, LTE, WiMax, or cellular radio antennas, there should be no impairment of performance. The antenna must fit into a very small installation volume with close proximity to other components and little or no space available for a ground plane. The orientation of the device may not be ideal so that the antenna's omni-directional broad beam-width is required.

The lower metallised part of the structure functions as a sleeve balun (un-balanced to balanced transition). This structure isolates the antenna's radiating section from the device ground-plane so that the antenna's resonance is independent from the housing. The device configuration can easily be designed so that human-body loading does not detune or significantly reduce the efficiency of the antenna. Also as a balanced structure incorporating a balun, the antenna does not pass common-mode ground noise to the receiver input.

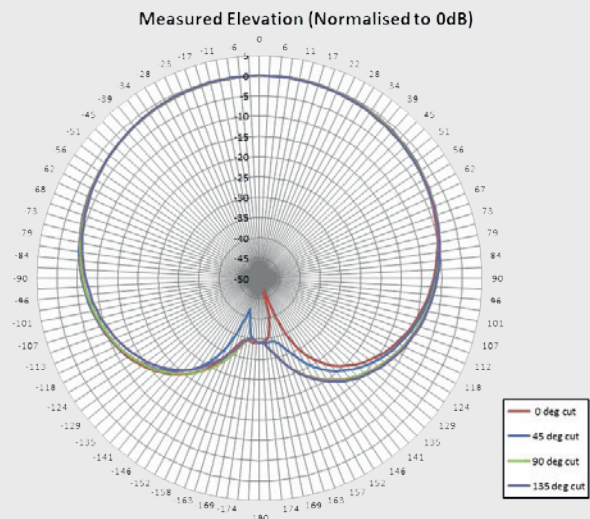
The effect of incorporating an isolating structure (balun) together with the high-quality design of the antenna provides excellent performance. The use of distinctive dielectric materials concentrates resonance fields into the dielectric core (across which fields are balanced at all times). Therefore the antenna can provide excellent pattern performance when tightly integrated into the device even when close to cluttering objects (LCD, switches, connectors etc).



### BEAM CHARACTERISTICS



Broad angle of reception:  
- more freedom in angles of use  
- More information, high accuracy



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PRODUCT/SIZE [mm]	IMAGE	ANTENNA TYPE	APPLICATION/REMARKS
<b>GPS &amp; IRIDIUM ANTENNAS – LINE UP</b>			
<b>MWSL1203C</b> 15 (D1) × 19 (D2) × 32.9 (L)		PASSIVE	Handheld, body worn products Industrial GPS Waterproof, dust proof
<b>MWSL1203D</b> 15 (D1) × 32.9 (L)		PASSIVE	Handheld, body worn products Industrial GPS Waterproof, dust proof
<b>MWSL1204</b> 11.3 (W) × 32.45 (L)		ACTIVE GPS L1	Handheld, mobile GPS requiring an active antenna Excellent amplifier performance with low current (~3 mA)
<b>MWSL1206</b> 14.75 (W) × 42.57 (L)		ACTIVE GPS L1	All applications requiring a high level active antenna. High gain option with higher current (~13 mA)
<b>MWSL1205/1252</b> 10 (W) × 17.75 (L) (excluding connector)	 <b>MWSL1205</b> <b>MWSL1252</b>	PASSIVE: for moderate degree of embedding. Free-space Frequency = 1593.5MHz. Embedded Frequency = GPS L1	GPS enabled UMPC/MID devices, tracking devices. DSC/ SLR cameras for Geo-Tagging. For embedded use
<b>MWSL1208/1251</b> 10 (W) × 17.75 (L) (excluding connector)	 <b>MWSL1208</b> <b>MWSL1251</b>	PASSIVE: for tighter degree of embedding. Free-space Frequency = 1603.5MHz Embedded Frequency = GPS L1	GPS enabled UMPC/MID devices, tracking devices. DSC/ SLR cameras for Geo-Tagging
<b>MWSL1300</b> 7.55 (W) × 15.6 (L) (excluding connector)		PASSIVE: Frequency = 1582.5MHz. Embedded Frequency = GPS L1	Small handheld products and tightly integrated GPS devices, cameras, mobile phones, UMPC's
<b>MWSL1350</b> 7.60 (W) × 16.46 (L) (excluding connector)		PASSIVE: Frequency = 1582.5MHz. Embedded Frequency = GPS L1	Small handheld products and tightly integrated GPS devices, cameras, mobile phones, UMPC's
<b>MWSL3105</b> 14 (W) × 33 (L)		PASSIVE: Frequency = 1616.0 MHz ... 1626.0 MHz	Iridium applications, Waterproof, dust proof