



LAND ANTENNA RANGE

- 477 MHZ, 27 MHZ, MOBILE PHONE, AM/FM, ANTENNAS
- SPRINGS, BASES AND MOUNTING BRACKETS



GAIN GUIDE

477 MHz, 27 MHz, mobile phone, AM/FM, antennas. Manufactured to exacting high standards to accessorise the GME range of market leading radios. Suitable for all applications whilst offering exceptional performance, reliability and value.

Two important factors when choosing an antenna are the mounting position and the desired radiating patterns for the terrain in which the antenna is to be used.

Mounting positions

An antenna needs a large uniform metal surface beneath the radiating elements to perform correctly. This is referred to as a 'ground plane'. Therefore the best position to install an antenna is in the centre of a metal roof, however, this is not always possible and installation on a bull bar or mirror mount is often necessary. In this case a 'ground independent' antenna should be used to give the antenna its desired radiating pattern without a metal ground plane.

Radiating pattern on a flat metal surface

The direction of a 'non ground independent' antenna radiation pattern varies with the

vehicle mounting position as shown right.

Rear – Strongest to the front, weak to the rear.

Left – Strongest to the right, weaker to the left (Antenna right – vice versa).

Centre – All directions equal (best).

The antenna to suit the terrain

Lower gain antennas are more suited to hilly terrain where reception does not depend on the angle of the antenna, as shown in figure 1 below.

Radiating patterns

It is important to understand the relation of an antenna's gain to its radiating pattern, as shown in figure 2 below. As the electrical design of the antenna is modified to increase the gain, the omnidirectional pattern is squashed in a vertical plane and is enhanced in a horizontal plane. This expands the signal's coverage. A high gain antenna will therefore give increased coverage on flat terrain but the elevation will be limited making it unsuitable in mountainous regions.

Antenna construction



Figure 1

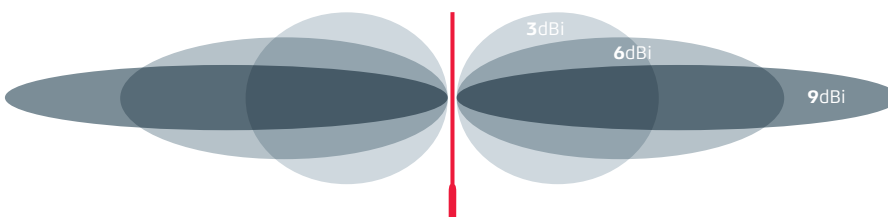


Figure 2

Shown right (Figure 3) are two examples of the electrical construction of antennas. High gain antennas (typical 8 to 9 dBi) are usually longer than lower gain antennas (typical 6 to 7 dBi).

Please note it is recommended to use an antenna of fibreglass construction for bull bar mounting or extensive off-road use.

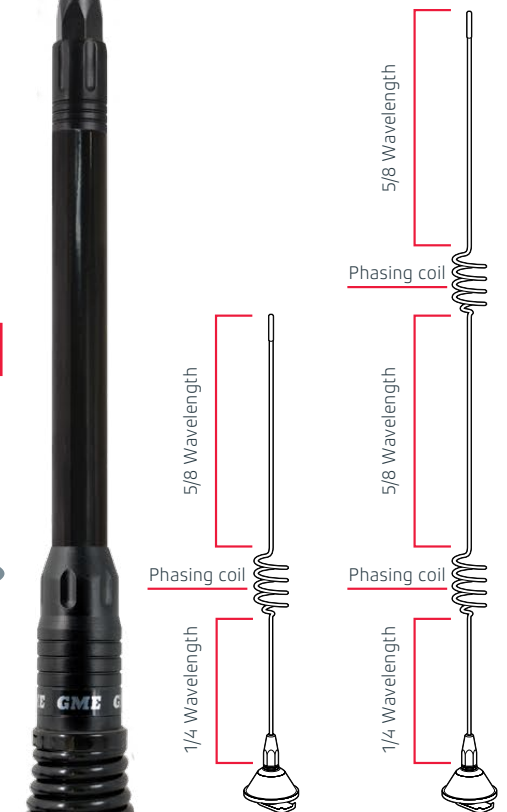
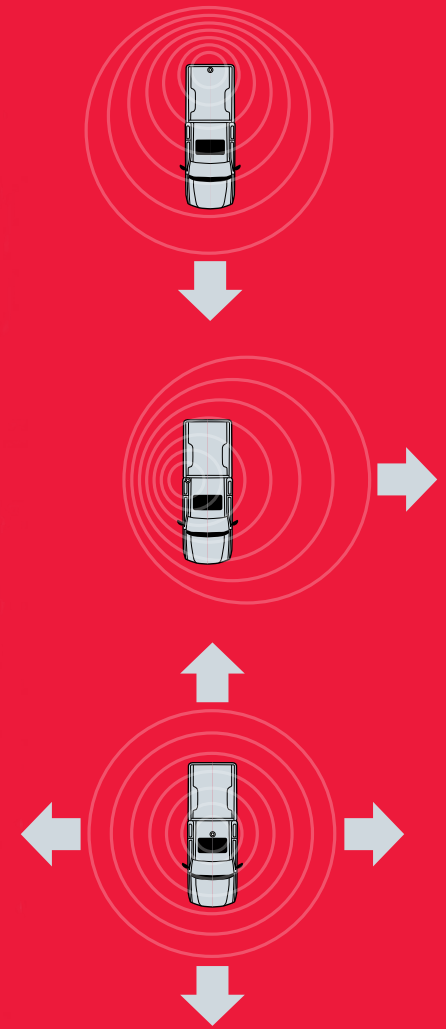


Figure 3

































477 MHz ANTENNAS AND WHIPS

GI Ground Independent

477 MHz ANTENNA RANGE										
CODE	TYPE	LENGTH (MM)	GAIN (DBI)	THREAD	0 mm	200	400	600	800	1000
AE4026	Compact rare-earth magnet antenna, 2.9 m cable, pre-terminated FME plug.	84	N/A	N/A						
AE4001	Highly flexible stainless steel wire whip, chrome ferrule.	150	2.1	5/16"x26						
AE4002	Highly flexible stainless steel wire whip (internal), black heat shrink, chrome ferrule.	151	2.1	5/16"x26						
AE4005 GI	Highly flexible, threaded base and mounting nut for easy installation includes 4.5 m of low loss coaxial cable.	370	2.1	M10						
AE5002	On-glass antenna, pre-tuned to 477MHz with an inconspicuous under-glass coupling box.	180	2.1	-						
AE4007	Heavy duty stainless steel whip (3.5 mm), chrome plated ferrule.	600	6.6	5/16"x26						
AE4008	Heavy duty black stainless steel whip (3.5 mm), chrome plated ferrule.	600	6.6	5/16"x26						
AE4012	Heavy duty stainless whip (2.5 mm), chrome plated ferrule.	640	6.6	5/16"x26						
AE4017	Heavy duty black stainless steel whip (2.5 mm), chrome plated ferrule.	640	6.6	5/16"x26						
AE4018 AE4018W AE4018B	Black or white fibreglass with heavy duty braid and precision wound copper element, black or white heat shrink and black or chrome plated ferrule.	640	6.6	5/16"x26						
AE4018K GI	AE4018 black or white whip with high quality elevated feed (ABL002) with 4.5 m of low loss coaxial cable.	850	6.6	1/2" BSW						
AE4013 GI	Highly flexible whip, designed to mount onto SO239.	380	2.1	5/8"x24 UNEF						
AE4014 AE4014G GI	White or grey fibreglass raydome with electro polished ferrule and stainless steel spring, 4.5 m of low loss coaxial cable.	800	2.1	M16x1.5						
AE4012K1 GI	AE4012 whip with high quality elevated feed (ABL002), 4.5 m of low loss coaxial cable.	780	6.6	1/2" BSW						
AE4017K1 GI	AE4017 whip with high quality elevated feed (ABL002), 4.5 m of low loss coaxial cable.	780	6.6	1/2" BSW						
AE4012K2 GI	AE4012 whip with high quality elevated feed (ABL002) and electro polished stainless steel parallel spring (AS001), 4.5 m low loss coaxial cable.	860	6.6	1/2" BSW						
AE4017K2 GI	AE4017 black whip with high quality elevated feed (ABL002) and electro polished stainless steel parallel spring (AS001), 4.5 m low loss coaxial cable.	860	6.6	1/2" BSW						
AE4018K2 GI	AE4018 black whip with high quality elevated feed (ABL002) and electro polished stainless steel parallel spring (AS001), 4.5 m low loss coaxial cable.	955	6.6	1/2" BSW						
AE4018K1 AE4018WK1 AE4018BK1 GI	AE4018 black or white whip with high quality elevated feed (ABL002) and electro polished stainless steel barrel spring (AS002), 4.5 m low loss coaxial cable.	980	6.6	1/2" BSW						



477 MHz ANTENNA RANGE										
CODE	TYPE	LENGTH (MM)	GAIN (DBI)	THREAD	0 mm	200	400	600	800	1000
 AE4017K2	AE4017 black whip with high quality elevated feed (ABL002) and electro polished stainless steel parallel spring (AS001), 4.5 m low loss coaxial cable.	860	6.6	1/2" BSW						
 AE4018K3	AE4018 black whip with the heavy duty elevated feed (ABL017) and heavy duty parallel stainless steel spring (AS003).	1000	6.6	1/2" BSW						
 AE409L GI	Fold down antenna with 2 stainless steel whip sets (differing gains), 4.5 m of low loss coaxial cable.	830/ 1230	6, 9	5/8" UNEF						
 AE4401 GI	Fold down stainless steel/anodised finish with 4.5 m of low loss coaxial cable pre terminated FME connector and adaptor.	850	6	5/8" UNEF						
 AE4006	Fibreglass with heavy duty braid and precision wound copper element, black heat shrink and chrome plated ferrule.	1200	8.1	5/16"x26						
CODE	TYPE	LENGTH (MM)	GAIN (DBI)	THREAD						
 AE4701 GI	White fibreglass raydome with electro polished ferrule (ABL004) and stainless steel parallel spring (AS001/B), 4.5 m of low loss coaxial cable. <i>White and black whips also available separately.</i>	580	2.1	1/2" BSW						
 AE4701B GI	Black fibreglass raydome with electro polished ferrule (ABL004) and stainless steel parallel spring (AS001/B), 4.5 m of low loss coaxial cable. <i>White and black whips also available separately.</i>	580	2.1	1/2" BSW						
 AE4702 GI	White fibreglass raydome with electro polished ferrule (ABL004) and stainless steel barrel spring (AS002/B), 4.5 m of low loss coaxial cable. <i>White and black whips also available separately.</i>	1040	6.6	1/2" BSW						
 AE4702B GI	Black fibreglass raydome with electro polished ferrule (ABL004) and stainless steel barrel spring (AS002/B), 4.5 m of low loss coaxial cable. <i>White and black whips also available separately.</i>	1040	6.6	1/2" BSW						
 AE4703 GI	White or fibreglass raydome with electro polished ferrule (ABL004) and medium duty stainless steel parallel spring (AS003/B), 4.5 m of low loss coaxial cable. <i>White, black and grey whips also available separately.</i>	1100	6.6	1/2" BSW						
 AE4703B GI	Black fibreglass raydome with electro polished ferrule (ABL004) and medium duty stainless steel parallel spring (AS003/B), 4.5 m of low loss coaxial cable. <i>White, black and grey whips also available separately.</i>	1100	6.6	1/2" BSW						
 AE4703G GI	Grey fibreglass raydome with electro polished ferrule (ABL004) and medium duty stainless steel parallel spring (AS003/B), 4.5 m of low loss coaxial cable. <i>White, black and grey whips also available separately.</i>	1100	6.6	1/2" BSW						
 AE4704 GI	White fibreglass raydome with electro polished ferrule (ABL004) and medium duty stainless steel barrel spring (AS004/B), 4.5 m of low loss coaxial cable. <i>White and black whips also available separately.</i>	580	2.1	1/2" BSW						
 AE4704B GI	Black fibreglass raydome with electro polished ferrule (ABL004) and medium duty stainless steel barrel spring (AS004/B), 4.5 m of low loss coaxial cable. <i>White and black whips also available separately.</i>	580	2.1	1/2" BSW						
 AE4705 GI	White fibreglass raydome with electro polished ferrule (ABL004) and heavy duty stainless steel barrel spring (AS004/B), 4.5 m of low loss coaxial cable. <i>White, black and grey whips also available separately.</i>	1200	6.6	1/2" BSW						
 AE4705B GI	Black fibreglass raydome with electro polished ferrule (ABL004) and heavy duty stainless steel barrel spring (AS004/B), 4.5 m of low loss coaxial cable. <i>White, black and grey whips also available separately.</i>	1200	6.6	1/2" BSW						
 AE4705G GI	Grey fibreglass raydome with electro polished ferrule (ABL004) and heavy duty stainless steel barrel spring (AS004/B), 4.5 m of low loss coaxial cable. <i>White, black and grey whips also available separately.</i>	1200	6.6	1/2" BSW						
 AE4706 GI	White fibreglass raydome with electro polished ferrule (ABL004) and heavy duty stainless steel barrel spring (AS004/B), 4.5 m of low loss coaxial cable. <i>White and black whips also available separately.</i>	2100	8.1	1/2" BSW						
 AE4706B GI	Black fibreglass raydome with electro polished ferrule (ABL004) and heavy duty stainless steel barrel spring (AS004/B), 4.5 m of low loss coaxial cable. <i>White and black whips also available separately.</i>	2100	8.1	1/2" BSW						

27 MHz AND 26 MHz ANTENNAS AND WHIPS

27/26 MHz ANTENNA RANGE											
CODE	TYPE	LENGTH (MM)	THREAD	0 mm	200	400	600	800	1000	1200	1400
AE2001	Black flexible rubber helical pre-tuned for 27 MHz.	320	5/16"x26								
AE2007	Stainless steel base loaded pre-tuned for 27 MHz.	1200	5/16"x26								
AE2007N 26 MHz NZ	Stainless steel base loaded pre-tuned for 26 MHz.	1200	5/16"x26								
AE220 GI	Black fibreglass base loaded helical whip, pre-tuned for 27 MHz, 4.5 m of low loss coaxial cable.	1100	M12x1.75								
AE220N GI 26 MHz NZ	Black fibreglass base loaded helical whip, pre-tuned for 26 MHz, 4.5 m of low loss coaxial cable.	1100	M12x1.75								
AE221W	White fibreglass base loaded helical whip, pre-tuned for 27 MHz, 4.5 m of low loss coaxial cable.	1100	M12x1.75								
AE2400	Black fibreglass helical whip, pre-tuned for 27 MHz.	600	5/16"x26								
AE2400N 26 MHz NZ	Black fibreglass helical whip, pre-tuned for 26 MHz.	600	5/16"x26								
AE2401	Black fibreglass helical whip, pre-tuned for 27 MHz.	900	5/16"x26								
AE2401N 26 MHz NZ	Black fibreglass helical whip, pre-tuned for 26 MHz.	900	5/16"x26								
AE2402N 26 MHz NZ	Black fibreglass helical whip, pre-tuned for 26 MHz.	1200	5/16"x26								



CELLULAR

MOBILE PHONE					
CODE	TYPE	LENGTH (MM)	GAIN (DBI)	THREAD	
AT6DB GI	Dual band mobile phone antenna (824-960 MHz), white fibre glass raydome chrome ferrule and spring 4.5 m of low loss coaxial cable.	800	6.1	M16x1.5	
AT6DBG GI	Dual band mobile phone antenna (824-960 MHz), grey fibre glass raydome chrome ferrule and spring 4.5 m of low loss coaxial cable.	800	6.1	M16x1.5	

AM/FM

AM/FM											
CODE	TYPE	LENGTH (MM)	THREAD	0 mm	200	400	600	800	1000	1200	1400
AEM2	Black fibreglass helical whip pre tuned for AM and FM broadcast bands. DAB compatible.	1560	5/16"x26								
AEM3	Black fibreglass helical whip pre-tuned for AM and FM broadcast bands. DAB compatible.	1000	5/16"x26								



BASE STATIONS

BASE STATION ANTENNAS												
CODE	TYPE	LENGTH (MM)	GAIN (DBI)	THREAD	0 mm	700	1400	2100	2800	3500	4200	4900
AE4106 GI	477 MHz base antenna, white fibreglass raydome, stainless steel base, N connector fitting.	1500	6	N/A								
AE4108 GI	477 MHz base antenna, white fibreglass raydome, stainless steel base, N connector fitting.	2400	8	N/A								
AE4110 GI	477 MHz base antenna, white fibreglass raydome, stainless steel base, N connector fitting.	3900	10	N/A								

BASES, ELEVATED FEEDS AND SPRINGS


BASES		
CODE	TYPE	
AB001	27/477 MHz base (5/16" TPI thread)	
ABL001	27/477 MHz base with 4.5 m low loss foam coaxial (5/16" TPI thread)	
AB406	Magnetic base/lead assembly (5/16" TPI thread)	

ELEVATED FEEDS		
CODE	TYPE	
ABL002	Elevated feed with 4.5 m low loss foam coaxial (BSW thread)	
ABL004	S0239 lead assembly suit AE4700 series	
ABL017	Heavy duty elevated feed with 4.5 m low loss coaxial and PL259 connector	
ABL017B	Black heavy duty elevated feed with 4.5 m low loss coaxial and PL259 connector	










SPRINGS		
CODE	TYPE	
AS001 AS001B	Light duty parallel spring (BSW thread)	
AS002 AS002B	Medium duty barrel spring (BSW thread)	
AS003 AS003B	Medium duty parallel spring (BSW thread)	
AS004 AS004B	Heavy duty barrel spring (suits AE4705/6)	
CA201	Medium duty aerial spring (suits 5/16" whips up to 4')	
CA202	Heavy duty aerial spring (suits 5/16" whips over 4')	

MOUNTING BRACKETS

MIRROR MOUNTS			
CODE	TYPE	THICKNESS	
MB034	Heavy duty mirror mount single	Premium cast stainless steel	
MB035	Heavy duty mirror mount double	Premium cast stainless steel	
MB4015S	Mirror mount	2.5 mm stainless steel	
MB4115S	Mirror mount with cable slot	2.5 mm stainless steel	

GUTTER MOUNTS			
CODE	TYPE	THICKNESS	
MB017	Ford Falcon/Territory driver's side front	1.5 mm stainless steel	
MB018	Ford Falcon/Territory passenger's side front	1.5 mm stainless steel	
MB039	Mondeo driver side bracket	2 mm stainless steel	
MB040	Mondeo passenger side bracket	2 mm stainless steel	
MB050	Ranger driver side bracket	2 mm stainless steel	
MB051	Ranger passenger side bracket	2 mm stainless steel	
MB056B MB056	Black or natural finish, Hilux guard mount bracket	2 mm stainless steel	
MB4035S	L-shaped universal	1.5 mm stainless steel	
MB4045S	Holden bracket	1.5 mm stainless steel	
MB4155S	L-shaped with cable slot	2.5 mm stainless steel	
MB4055S	L-shaped	2.5 mm stainless steel	
MB4065S	VT Commodore gutter bracket	1.5 mm stainless steel	
MB407B MB4075S	Black or natural finish, Bonnet/boot 'Z'	1.5 mm stainless steel	

GUTTER MOUNTS			
CODE	TYPE	THICKNESS	
MB03	Adjustable gutter mount	Stainless steel	

BULLBAR MOUNTS			
CODE	TYPE	THICKNESS	
MB024B MB024SS	Black or natural finish bull bar antenna mounting - right angle	3 mm black stainless steel	
MB038	Heavy duty bull bar bracket (up to 60mm)	Stainless steel	
MB042B MB042	Fold-down bracket	Stainless steel	
MB101B MB101SS	38 mm bull bar bracket wrap around	3 mm stainless steel	
MB102B MB102SS	45 mm bull bar bracket wrap around	3 mm stainless steel	
MB103B MB103SS	50 mm bull bar bracket wrap around	3 mm stainless steel	
MB104B MB104SS	63 mm bull bar bracket wrap around	3 mm stainless steel	
MB105B MB105SS	76 mm bull bar bracket wrap around	3 mm stainless steel	
MB408B MB408SS	Bull bar antenna mounting	3 mm stainless steel	

AE4700 series

The AE4700 series is the most diverse and adaptable range of large vehicle mount antennas on the market today. Engineered with the coaxial termination protected inside the spring assembly and easy screw down fitting of the whip, the antenna can easily be changed for different gain and lengths to suit operating conditions.

This is beneficial when travelling from flatter open plains where a two metre, high gain antenna is needed compared to driving in the city where a lower gain, shorter length is required.

Any of the whips in the AE4700 range can be effortlessly interchanged without changing the AS004/B spring base. The AE4401, AE409L and AE4013 will also fit onto the spring base, this offers an alternative to thicker radomes.

dBi – dBd comparison

There are a number of different ways an antennas gain can be rated, the most common two are dBi and dBd. dBi is the amount of gain of an antenna with respect to an isotropic radiator where as dBd refers to the antenna gain with respect to a dipole.

It is now becoming more common in the radio industry for dBi to be used when rating antennas. To convert the dBi to dBd the following formula can be used $\text{dBd} = \text{dBi} - 2.15$.



Interchange whips without changing the AS004/B spring base.



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