GME

LAND ANTENNA RANGE

> 477 MHz, 27 MHz, mobile phone, AM/FM antennas.
> Mounting brackets, springs and bases.

Cover photo courtesy of Carlisle Rogers

GAIN GUIDE

GME offers a wide range of 27 MHz, 477 MHz, mobile phone and 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 for 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.

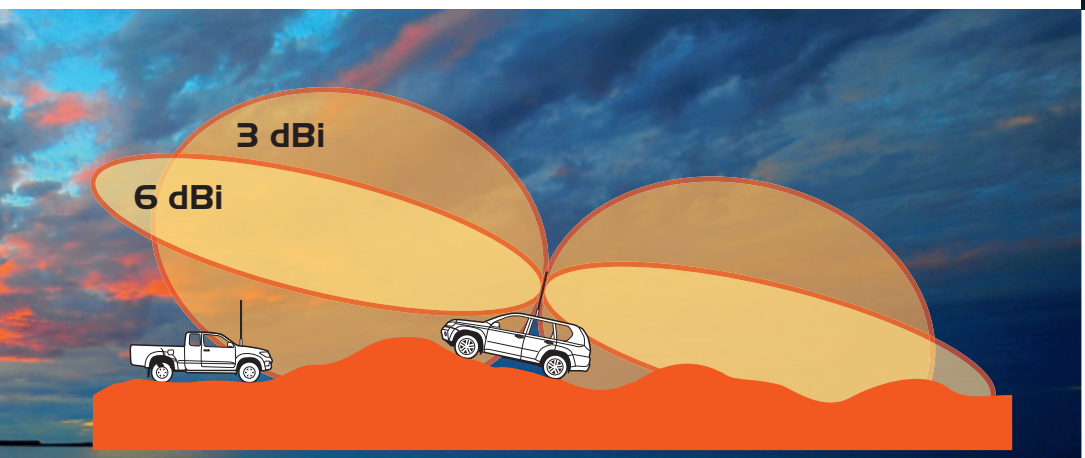


Figure 1

Figure 2

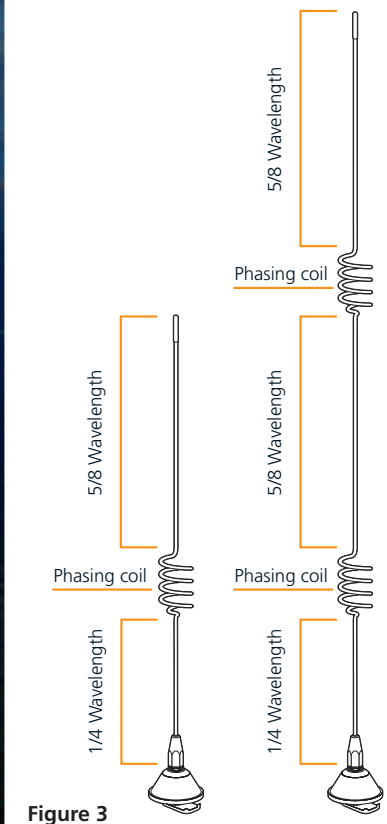


Figure 3

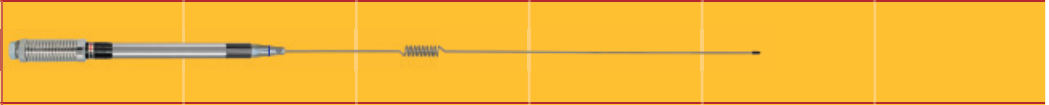
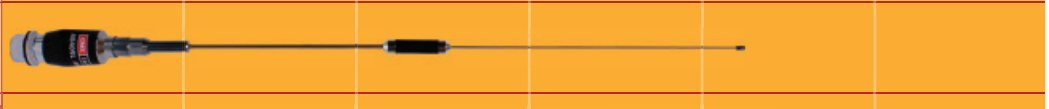
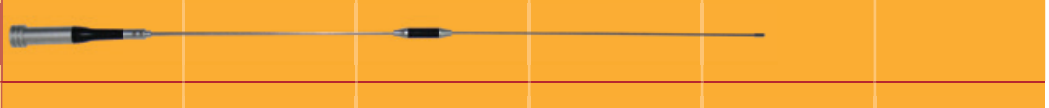
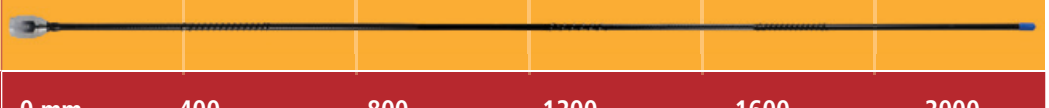
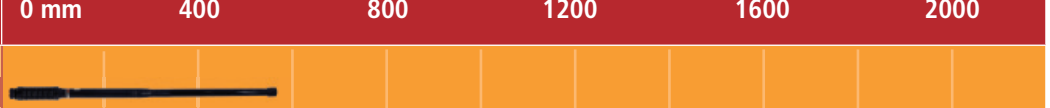
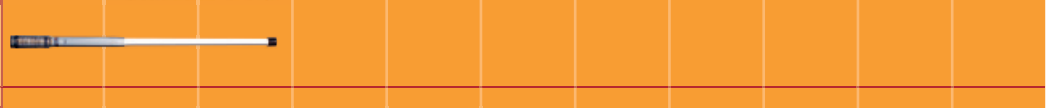
Antenna construction

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.

477 MHz ANTENNA RANGE

CODE	TYPE	LENGTH (MM)	GAIN (DBI)	THREAD	0 mm 200 400 600 800 1000
AE4020	Compact rare-earth magnet antenna, 2.4 m cable, pre-terminated FME plug.	45	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**	Fibreglass with heavy duty braid and precision wound copper element, black or white heat shrink and chrome plated ferrule.	640	6.6	5/16"x26	
AE4018K **AE4018WK** 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 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	

CODE	TYPE	LENGTH (MM)	GAIN (DBI)	THREAD	0 mm 400 800 1200 1600 2000
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 **AE4018WK2** GI	AE4018 black or white 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** GI	AE4018 black or white whip with high quality elevated feed (ABL002) and electro polished stainless steel barrel spring (AS001), 4.5 m low loss coaxial cable.	980	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	
AE4018BK3	AE4018 black whip with the heavy duty black elevated feed (ABL017B) and heavy duty black parallel stainless steel spring (AS003B).	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	
AE4701B **AE4701W** GI	White or black fibreglass raydome with electro polished ferrule (ABL004) and stainless steel parallel spring (AS001/B), 4.5 m of low loss coaxial cable. *White and black whips also available separately.*	580	2.1	1/2" BSW	
AE4702B **AE4702W** GI	White or black fibreglass raydome with electro polished ferrule (ABL004) and stainless steel barrel spring (AS002/B), 4.5 m of low loss coaxial cable. *White and black whips also available separately.*	1040	6.6	1/2" BSW	
AE4703B **AE4703W** **AE4703G** GI	White, black or 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. *White, black and grey whips also available separately.*	1100	6.6	1/2" BSW	
AE4704B **AE4704W** GI	White or 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. *White and black whips also available separately.*	580	2.1	1/2" BSW	

AE4705B **AE4705W** **AE4705G** GI	White, black or 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. *White, black and grey whips also available separately.*	1200	6.6	1/2" BSW
AE4706B **AE4706W** **AE4706G** GI	White, black or 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. *White, black and grey whips also available separately.*	2100	8.1	1/2" BSW

27 MHz ANTENNA RANGE

CODE	TYPE	LENGTH (MM)	THREAD
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
AE2008	Black stainless steel base loaded pre-tuned for 27 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
AE2402	Black fibreglass helical whip, pre-tuned for 27 MHz.	1200	5/16"x26

AE2402N 26 MHz NZ	Black fibreglass helical whip, pre-tuned for 26 MHz.	1200	5/16"x26	
AE2403N 26 MHz NZ	Black fibreglass helical whip, pre-tuned for 26 MHz.	1500	5/16"x26	

MOBILE PHONE

CODE	TYPE	LENGTH (MM)	GAIN (DBI)	THREAD	0 mm 200 400 600 800 1000 1200 1400
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

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. DBA compatible.	1560	5/16"x26	
AEM3	Black fibreglass helical whip pre-tuned for AM and FM broadcast bands. DBA compatible.	1000	5/16"x26	

BASE STATION ANTENNAS

CODE	TYPE	LENGTH (MM)	GAIN (DBI)	THREAD	0 mm 700 1400 2100 2800 3500 4200 4900
AE2102 GI	27 MHz base antenna, white fibreglass raydome, stainless steel base, PL259 fitting.	5400	N/A	N/A	
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	

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 fit 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 AE4705/6 spring base. The AE4401, AE409L and AE4013 will also fit onto the spring base, this offers an alternative to thicker radomes.

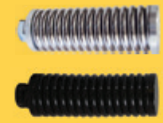
dBi – dBd comparison

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 covert the dBi to dBd the following formula can be used dBd = dBi – 2.15.

Interchange whips without changing the AE4705/6 spring base.

SPRINGS AND BASES

CODE	TYPE		CODE	TYPE	
BASES			**SPRINGS**		
AB001	27/477 MHz base (5/16" TPI thread)		**AS001** **AS001B**	Light duty parallel spring (BSW thread)	
ABL001	27/477 MHz base with 4.5 m low loss foam coaxial (5/16" TPI thread)		**AS002** **AS002B**	Medium duty barrel spring (BSW thread)	
AB406	Magnetic base/lead assembly (5/16" TPI thread)		**AS003** **AS003B**	Medium duty parallel spring (BSW thread)	
ELEVATED FEEDS			**AS004** **AS004B**	Heavy duty barrel spring (suits AE4705/6)	
ABL002	Elevated feed with 4.5 m low loss foam coaxial (BSW thread)		**CA201**	Medium duty aerial spring (suits 5/16" whips up to 4')	
ABL004	S0239 centre, with 5 m low loss foam coaxial (suits AE4700 series)		**CA202**	Heavy duty aerial spring (suits 5/16" whips over 4')	
ABL017	Heavy duty elevated feed with 4.5 m low loss coaxial with PL259 connector				
ABL017B	Black heavy duty elevated feed with 4.5 m low loss coaxial with PL259 connector				

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	
MB401SS	Mirror mount	2.5 mm stainless steel	
MB411SS	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	
MB403SS	L-shaped universal	1.5 mm stainless steel	
MB404SS	Holden bracket	1.5 mm stainless steel	
MB415SS	L-shaped with cable slot	2.5 mm stainless steel	
MB405SS	L-shaped	2.5 mm stainless steel	

CODE	TYPE	THICKNESS	
MB406SS	VT Commodore gutter bracket	1.5 mm stainless steel	
MB407SS	Bonnet/boot 'Z'	1.5 mm stainless steel	
MB03	Adjustable gutter mount	Stainless steel	

BULLBAR MOUNTS

CODE	TYPE	THICKNESS	
MB038	Heavy duty bull bar bracket (up to 60mm)	Stainless steel	
MB024SS	Bull bar antenna mounting - right angle	3 mm stainless steel	
MB408B	Bull bar antenna mounting	3 mm black mild steel	
MB408SS	Bull bar antenna mounting	3 mm stainless steel	
MB101SS	38 mm bull bar bracket wrap around	3 mm stainless steel	
MB102SS	45 mm bull bar bracket wrap around	3 mm stainless steel	
MB103SS	50 mm bull bar bracket wrap around	3 mm stainless steel	
MB104SS	63 mm bull bar bracket wrap around	3 mm stainless steel	
MB105SS	76 mm bull bar bracket wrap around	3 mm stainless steel	

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