GLOMEX®

The best in marine antennas

THE MARINE SATELLITE TV TECHNOLOGY

You are never alone on the water

GLOMEX®
The best in marine antennas

THE MOST COMPLETE RANGE OF INNOVATIVE PRODUCTS

YOU ARE NEVER ALONE ON THE WATER

INDEX

WHAT IS DVB-S2

DVB-S2 is the **second Generation Satellite**. It's a digital satellite transmission system developed by the DVB Project. It makes use of the latest modulation and coding techniques to deliver performance that approaches the theoretical limit for such systems. Satellite transmission was the first area addressed by the DVB Project in 1993 and DVB standards form the basis of most satellite DTV services around the world today, and therefore of most digital TV in general. DVB-S2 will gradually replace DVB-S in the future, as new HD services entice users to upgrade their receivers to more efficient DVB-S2 models.

HOW DOES IT WORK?

The original DVB-S system, on which DVB-S2 is based, specifies the use of QPSK modulation along with various tools for channel coding and error correction. Further additions were made with the emergence of DVB-DSNG (Digital Satellite News Gathering), for example allowing the use of 8PSK and 16QAM modulation. DVB-S2 benefits from more recent developments and has the following key technical characteristics:

- There **are four modulation modes** available, with QPSK and 8PSK intended for broadcast applications in non-linear satellite transponders driven close to saturation. 16APSK and 32APSK, requiring a higher level of C/N, are mainly targeted at professional applications such as news gathering and interactive services.

- DVB-S2 uses a very powerful **Forward Error Correction** scheme (FEC), a key factor in allowing the achievement of excellent performance in the presence of high levels of noise and interference. The FEC system is based on concatenation of

BCH (Bose-Chaudhuri-Hcquengham) with LDPC (Low Density Parity Check) inner coding.

- **Adaptive Coding and Modulation** (ACM) allows the transmission parameters to be changed on a frame by frame basis depending on the particular conditions of the delivery path for each individual user. It is mainly targeted to unicasting interactive services and to point-to-point professional applications.

- DVB-S2 offers **optional backwards compatible** modes that use hierarchical modulation to allow legacy DVB-S receivers to continue to operate, whilst providing additional capacity and services to newer receivers.

DVB-S2 delivers excellent performance, coming close to the Shannon limit, the theoretical maximum information transfer rate in a channel for a given noise level. It can operate at carrier-to-noise ratios from -2dB (i.e., below the noise floor) with QPSK, through to +16dB using 32APSK. The table overleaf (Figure 1) shows the improvements in efficiency that DVB-S2 delivers when compared to DVB-S with typical TV broadcast parameters, with gains in the useful bitrate of more than 30% in each case. (Source: DVB Project Office)

Satellite EIRP (dBW)	51		53.7	
System	**DVB-S**	**DVB-S2**	**DVB-S**	**DVB-S2**
Modulation & Coding	QPSK 2/3	QPSK 3/4	QPSK 7/8	8PSK 2/3
Symbol Rate (Mbaud)	27.5 (α = 0.35)	30.9 (α = 0.2)	27.5 (α = 0.35)	29.7 (α = 0.25)
C/N (in 27.5MHz) (dB)	5.1	5.1	7.8	7.8
Useful Bitrate (Mbit/s)	**33.8**	**46 (gain = 36%)**	**44.4**	**58.8 (gain = 32%)**
Number of SDTV Programmes	7 MPEG-2 15 AVC	10 MPEG-2 21 AVC	10 MPEG-2 20 AVC	13 MPEG-2 26 AVC
Number of HDTV Programmes	1-2 MPEG-2 3-4 AVC	2 MPEG-2 5 AVC	2 MPEG-2 5 AVC	3 MPEG-2 6 AVC

Example comparison between DVB-S and DVB-S2 for TV broadcasting (Source: EBU Technical Review 10/04)

Glomex has developed an upgrade of the electronic components (control unit and antenna board) that is compatible with the DVB-S2 standard, which means that all the new antennas will be able to work correctly and to benefit from software upgrades for years to come. Moreover, these new electronic components can also be used to make the old DVB-S antennas compatible with the DVB-S2 standard.

DVB S2

FULL HD

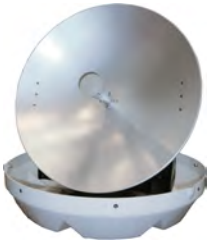
Glomex antennas - from left to right: 2.4m/8' High performing VHF antenna (model RA1225), weBBoat 4G Plus (the Dual Sim Coastal Internet antenna system), Rhea (47cm/18,5" DVB-S2 Satellite TV antenna), Altair (Full HD DVB-T2 TV antenna) and 2,4m/8' AM-FM radio antenna (model RA1288)

GLOMEX DVB-S2 KEY POINTS

FULL HD SATELLITE TV ANTENNAS

Glomex parabolic dishes ensure the highest performance standards for FULL HD signal reception you can count on by optimizing signals and compensating for quality loss using multiple satellites and simulcasted frequencies.

Rhea and Saturn4 parabolic Dish



Mars 4 and Rhine parabolic Dish

CONTROL UNIT WITH USB PORT FOR SOFTWARE UPDATE

Glomex MK2+ Satellite TV antennas (Saturn 4, Mars 4 and Rhine) are all equipped with the new **control unit with USB port for an easier and faster software update**. This enables the user to update the software to the latest version and ensures maximum performance over time. Moreover, the control unit has a built-in DC/DC adaptor **to simplify installation and reduce wiring**.

On the control unit you can easily select **8 preloaded satellites** (Astra2 28.2°E, Astra3 23.5°E, Astra1 19.2°E, Hotbird 13°E, Eurobird 9°E, Sirius 4.8°E, Thor 1°W, Hispasat 30°W). These satellites can be selected by way of the selector buttons on the front of the control unit as well as the display language.

The control unit can be conveniently mounted in an existing electric panel, on a vertical or horizontal surface, or integrated into the ship's cabin and includes all of the necessary accessories.

Control unit with USB input for an easier and faster software update

Saturn 4, Mars 4 and Rhine control unit

LATEST GENERATION MECHANICAL AND ELECTRONIC COMPONENTS

Each Glomex Satellite TV antenna is produced with the best components for ensuring the best performance in any environmental conditions. Glomex products are appreciated worldwide for the **quality materials and the technological research** products undergo on each product. Glomex carries out scrupulous testing in the laboratory and at sea in order to guarantee **quality without compromise**. The Glomex Sea trials are carried out with the Test Lab and are installed on the test boat to ensure product reliability.

NOISE REDUCTION SYSTEM

Each Glomex Satellite TV antenna is equipped with a special noise reduction system based on new electronics and new software for improving on-board comfort and keeping the satellite signal. Thanks to this system, Glomex antennas are extremely quiet while they are searching for signal.

FAST & EASY INSTALLATION

Each Glomex satellite TV antenna is very easy to install, thanks to a **single coaxial cable (SCC) connecting the antenna directly to the control unit**. Watch the video to see how easy installation is:

COAXIAL ROTATING JOINT

Allowing the antenna to turn infinetly on the azimuth axis with **no wrapping**.

VERY REDUCED WEIGHT

All Glomex satellite TV antennas have a very reduced weight thanks to the innovative technology and materials.

RELIABILITY

Glomex satellite TV antennas are **on hundreds of yachts and river cruise ships**. Glomex antennas' success is due to their reliability and high performance.

ANTI-YELLOWING AND U.V. RESISTANT HIGH QUALITY RADOME MATERIALS

The radome protects the antenna from extreme weather conditions. This special radome uses a **UV-resistant and anti-yellowing** thermoplastic material with a low attenuation factor (about 0.1dBuV per mm).This thermoplastic material minimizes moisture and water droplet accumulation which can cause attenuation to the satellite signal.

GLOMEX DVB-S2 ANTENNA LINE

Glomex entered into the market of satellite technology and designed its first satellite antennas for the marine industry. Facing the risks and uncertainties of this new technology, the company held with its belief in research and development and the uncompromising testing carried out on all Glomex products. For this very reason, Test Lab (Glomex's test boat) was launched. Owned and operated by none other than Piero Baldassarri himself, this boat is used for testing all Glomex products in order to guarantee **quality without compromise**.

In 2011 a new kind of R&D begins: cooperation between Glomex and engineers of the University of Milan. This partnership has led to the production and launch of a new version of Satellite TV antenna, based on High Performance Dish (**HPD**), Silent Tracking Operation (**STO**) and new software for more Advanced Signal Tracking (**ATS**).

In 2016 Glomex has developed the new range of Satellite TV antennas with **DVBS-2** technology: the Second Generation of Digital Video Broadcasting. This new technology allows perfect reception of the Sat TV signals all in **Full HD**.

Glomex offers three different satellite antenna lines:

Leisure / Pro


Rhea
code:
V8100S2


Saturn 4
code:
V9104S2


Mars 4
code:
V9804S2

Software dedicated only for use at sea Rhea, Saturn 4 and Mars 4 are FULL HD DVB-S2 antennas designed and developed for leisure and commercial boats watching TV in harbor and at sea. Equipped with a HPD parabolic dish, silent reduction system, advanced signal tracking, efficient compensation system for boat rolling and pitching and an easy installation system, these antennas are the best choice for yachtsmen.

Rhea has a 470mm (18") parabolic dish, 1 decoder output and a control unit with 3 satellites pre-loaded;

Saturn 4 has a 470mm (18") parabolic dish, up to max 16 decoders and a control unit with **USB** port for an **easier and faster software update by** downloading the free software update directly on www.glomex.it. The control unit has a built-in DC/DC Adaptor to simplify installation and reduce wiring, 8 satellites pre-loaded;

Mars 4 has a 600mm (24") parabolic dish, up to max 16 decoders and a control unit with **USB** port for an **easier and faster software update by** downloading the free software update directly on www.glomex.it. The control unit has a built-in DC/DC Adaptor to simplify installation and reduce wiring, 8 satellites pre-loaded. Mars 4 can be sold with the automatic skew option.

River


Danube 2
code:
R500S2


Rhine
code:
R9804S2

Software dedicated only for river navigation Danube 2 and Rhine are FULL HD DVB-S2 TV antennas designed and developed for river boats and houseboats as they are adaptable to all customer needs. Installed on thousands of boats and on cruising boats sailing on the most important European rivers (such as Danube, Loire, Seine, Po and Thames rivers), this special antenna line is suitable for having excellent performance on river environments in any weather conditions.

Danube 2 has a 580x320mm (23x13") parabolic dish, 1 decoder output and a control unit with 3 satellites pre-loaded;

Rhine has a 600mm (24") parabolic dish, up to max 16 decoders and a control unit with **USB** port for an **easier and faster software update by** downloading the free software update directly on www.glomex.it. The control unit has a built-in DC/DC Adaptor to simplify installation and reduce wiring, 8 satellites pre-loaded.

Mobile


Discovery 2
code:
S500SS2


Explorer 2
code:
S500MS2

Software dedicated only for R.V. vehicle Discovery 2 and Explorer 2 are FULL HD DVB-S2 TV antennas designed and developed for motor-homes, trucks and buses. These satellite TV antennas have exceptional performance with every weather conditions thanks to a high performing parabolic dish and the innovative elliptic feed-horn to avoid spillover, coupled with a high gain and a low noise factor LNB. These antennas are designed according to the offset technology (the focus point is outside the parabolic area), so the LNB is supported by an arm which does not cast any shadow onto the dish for the best performance. With these satellite TV antennas, Glomex wants to offer the best products to watch TV for all owners of motorhomes and caravans.

Discovery 2 works with parked vehicle, has a 580x320mm (23x13") parabolic dish, 1 decoder output and a control unit with 3 satellites pre-loaded;

Explorer 2 works with moving vehicle, has a 580x320mm (23x13") parabolic dish, 1 decoder output and a control unit with 3 satellites pre-loaded.

MARINE AND RIVER SATELLITE TV ANTENNAS TECHNICAL SPECIFICATIONS



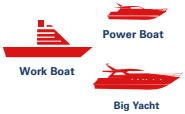


ANTENNA NAME	RHEA	SATURN 4	MARS 4	DANUBE 2	RHINE
ANTENNA CODE	V8100S2	V9104S2	V9804S2	R500S2	R9804S2
ANTENNA DISH DIAMETER	470 mm (18”)	470 mm (18”)	600 mm (24”)	580 mm (23”) x 320 mm (13”)	600 mm (24”)
RADOME DIMENSIONS (diameter x height)	500 x 560 mm (20 x 22”)	500 x 560 mm (20 x 22”)	660 x 660 mm (26 x 26”)	660 mm (26”) x 390 mm (15”)	660 x 660 (26 x 26”)
ANTENNA WEIGHT	8 kg (17,6 lb)	13 kg (28,50 lb)	15,5 kg (34,17 lb)	8 kg (17 lb)	15,5 kg (34,17 lb)
TRACKING RATE	50°/sec	50°/sec	50°/sec	AZ 25°/sec EL 25°/sec	25°/sec
ANTENNA GAIN	35 dB (12 GHz)	35 dB (12 GHz)	36,5 dB (12 GHz)	34 db	36,5 dB (12GHz)
DISH TYPE	Prime Focus + HPD	Prime Focus + HPD	Prime Focus + HPD	OFFSET	Prime Focus + HPD
POLARIZATION	Linear V/H	Linear V/H	Linear V/H	Linear V/H	Linear V/H
LNB FREQUENCY RANGE	10.7 to 12.75 GHz LNB universal	10,7 - 12,75 GHz LNB universal	10,7 - 12,75 GHz LNB universal	10.7 to 12.75 GHz LNB universal	10.7 to 12.75 GHz LNB universal
RADOME TYPE	UV resistant	U.V. resistant	U.V. resistant	UV resistant	UV resistant
POWERCONSUMPTION	12 Vdc (1,5 Ah)	12-24 Vdc (2,5 Ah)	12-24 Vdc (3 Ah)	11.5 ÷ 13.8 VDC / 0.9 A/h	12 - 24 Vdc (3 Ah)
POWER REQUIREMENT	3 A	3 A	3 A	5 A	5 A
OPERATING TEMPERATURE RANGE	-20° C to +55° C	- 20° + 55°	- 20° + 55°	-20° C to +55° C	-20° C to +55° C
AZIMUTH TURN RANGE	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited
FULL ELEVATION RANGE	-9° / 81°	5° - 90°	5° - 90°	15° - 50°	5° - 90°
TYPE OF STABILIZATION	Gyro on 2 axis + 3° axis by interpolation	gyro on 2 axis + 3° axis by interpolation	gyro on 2 axis + 3° axis by interpolation	Gyro on 2 axis	gyro on 2 axis + 3° axis by interpolation
SATELLITE IDENTIFICATION	NIT (Network Information Table)	NIT (Network Information Table)	NIT (Network Information Table)	SSI (Sync Satellite Identification)	SSI (Sync Satellite Identification)
MIN EIRP	49 dBW	49 dBW	47 dBW	48 dBW	47 dBW
FUTURE UPGRADES READY	Yes	Yes	Yes	Yes	Yes
DECODER OUTPUT	1 output	4 output to multiswitch (max 16 output)	4 output to multiswitch (max 16 output)	1 output	4 outputs to multiswitch (max 16 output)
AUTOSKEW OPTION	No	Yes	Yes	No	Yes
CONTROL UNIT	3 satellites loaded: ASTRA2 28°E - ASTRA1 19°E - HOTBIRD 13°E	8 satellites loaded	8 satellites loaded	3 satellites loaded: ASTRA2 28°E - ASTRA1 19°E - HOTBIRD 13°E	8 satellites loaded

SATURN 4 - model V9104S2

DVB S2 FULL HD

Control unit with USB port for an easier and faster software update and a built in DC/DC adaptor for power supply



- Satellite TV antenna with **DVB-S2** technology for receiving all **FULL HD** channels and insuring high performance standards of signal reception;
- **47cm (18")** HPD (High Performance Dish) parabolic dish that, thanks to the MK2+ hardware and software, ensures improved quality performance, high degree of signal reception and a total silence factor;
- With **4 decoder outputs**. You can connect **up to 16 decoders** with the included multi-switch;
- Equipped with the new **control unit with USB port** for an **easier and faster software update** by **downloading the free software update** directly on www.glomex.it. The control unit has a **built-in DC/DC Adaptor** to simplify installation and reduce wiring;
- With **8 preloaded satellites** – see pages 27/28 to see the satellites coverage area.

Control Unit 8 sat

Supplied

V9139/10 10m/33' (4 pcs) + V9143 1,5m/5' (1 pc) coax cables

Supplied

V9191 Multiswitch

Supplied

high thickness synthetic rubber gasket

Supplied

V9104 Twin

Option

V9500 Mount

Option

MARS 4 - model V9804S2

DVB S2 FULL HD

Control unit with USB port for an easier and faster software update and a built in DC/DC adaptor for power supply

2 YEARS GLOMEX WARRANTY

Power Boat
Big Yacht
Commercial Ship

- Satellite TV antenna with **DVB-S2** technology for receiving all **FULL HD** channels and insuring high performance standards of signal reception;
- **60cm (24")** HPD (High Performance Dish) parabolic dish that, thanks to the MK2+ hardware and software, ensures improved quality performance, high degree of signal reception and a total silence factor;
- With **4 decoder outputs**. You can connect **up to 16 decoders** with the included multi-switch;
- Equipped with the new **control unit with USB port** for an **easier and faster software update** by downloading the free software update directly on www.glomex.it. The control unit has a **built-in DC/DC Adaptor** to simplify installation and reduce wiring;
- With **8 preloaded satellites** – see pages 27/28 to see the satellites coverage area;
- With **Automatic Skew Option**. It's a compensation system acting physically on the LNB and acknowledging the geographic position by changing automatically the inclination. In this way the polarization is optimized and the best possible signal quality is achieved.

Control Unit 8 sat — Supplied

V9139/10 10m/33' (4 pcs) + V9143 1,5m/5' (1 pc) coax cables — Supplied

V9191 Multiswitch — Supplied

high thickness synthetic rubber gasket — Supplied

V9804 Twin — Option

V9500 Mount — Option

RHEA - model V8100S2

DVB S2 FULL HD

3 preloaded satellites Control Unit

Power Boat

2 YEARS GLOMEX WARRANTY

- Satellite TV antenna with **DVB-S2** technology for receiving all **FULL HD** channels and insuring high performance standards of signal reception;
- **47cm (18")** HPD (High Performance Dish) parabolic dish that, combined with the new software for signal research and the innovative noise reduction system STO (Silent Tracking Operation);
- With **1 decoder output**;
- Equipped with the **control unit** that can be **easily updated with a SD Card** (not included) and **downloading the free software update** directly on www.glomex.it by boat owners
- With **3 preloaded satellites** – see page 27 to see the satellites coverage area.

Control Unit 3 sat

Supplied

V9140/10 10m/33' (1 pc) + V9143 1,5m/5' (2 pcs) coax cables

Supplied

high thickness synthetic rubber gasket

Supplied

V8100 Twin

Option

V9500 Mount

Option

DANUBE 2 - model R500S2

3 preloaded satellites Control Unit

DVB S2 FULL HD

2 YEARS GLOMEX WARRANTY

River Boat

- Satellite TV antenna for **river boats**;
- Efficient and High performing dish **as a 60cm (24") home parabolic dish**;
- With **DVB-S2** technology for receiving all **FULL HD** channels and insuring high performance standards of signal reception;
- **58x32cm (32x13")** parabolic dish with high gain and a low noise factor LNB and the innovative elliptic feed-horn to avoid spill-over (H.P.F.);
- With **1 decoder output**;
- Equipped with the **control unit** that can be **easily updated with a SD Card** (not included) and **downloading the free software update** directly on www.glomex.it by boat owners;
- With **3 preloaded satellites** – see page 27 to see the satellites coverage area.

Control Unit 3 sat

Supplied

V9140/10 10m/33'
(1 pc) + V9143 1,5m/5' (2 pcs)
coax cables

Supplied

high thickness synthetic
rubber gasket

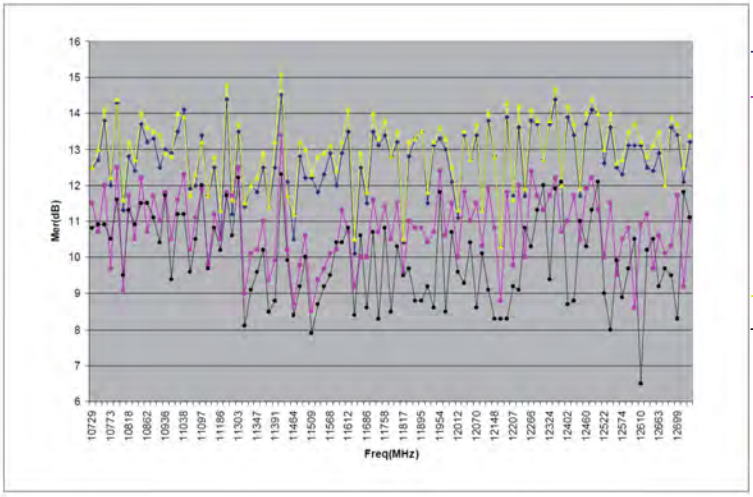
Supplied

R500 Twin

Option

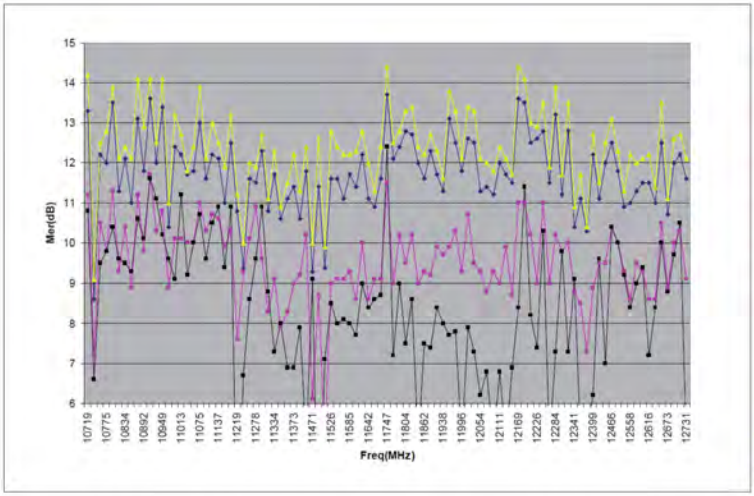
DANUBE 2 PARABOLIC DISH: EFFICIENT AND HIGH PERFORMING AS A 60CM / 24" HOME PARABOLIC DISH

Parabolic dishes comparative graphic on ASTRA 1 19° E - Average MER (dB)



Parabolic home dish: 12.68 Competitor: 10.78 R500S2: 12.95 Danube (R8500) 9.95

Parabolic dishes comparative graphic on HOTBIRD 13° E- Average MER (dB)



Parabolic home dish: 11.76 Competitor: 9.5 R500S2: 12.36 Danube1 (R89500) 8.28

RHINE – model R9804S2

DVB S2 FULL HD

Control unit with USB port for an easier and faster software update and a built in DC/DC adaptor for power supply

2 YEARS GLOMEX WARRANTY

River Boat

- Satellite TV antenna for **river boats**;
- With **DVB-S2** technology for receiving all **FULL HD** channels and insuring high performance standards of signal reception;
- **60cm (24")** HPD (High Performance Dish) parabolic dish that, thanks to the MK2+ hardware and software, ensures improved quality performance, high degree of signal reception and a total silence factor;
- With **4 decoder outputs**. You can connect **up to 16 decoders** with the included multi-switch;
- Equipped with the new **control unit with USB port** for an **easier and faster software update** by downloading the free software update directly on www.glomex.it. The control unit has a **built-in DC/DC Adaptor** to simplify installation and reduce wiring;
- With **8 preloaded satellites** – see pages 27/28 to see the satellites coverage area.

Control Unit 8 sat

Supplied

V9139/10 10m/33' (4 pcs) + V9143 1,5m/5' (1 pc) coax cables

Supplied

V9191 Multiswitch

Supplied

high thickness synthetic rubber gasket

Supplied

R9804 Twin

Option

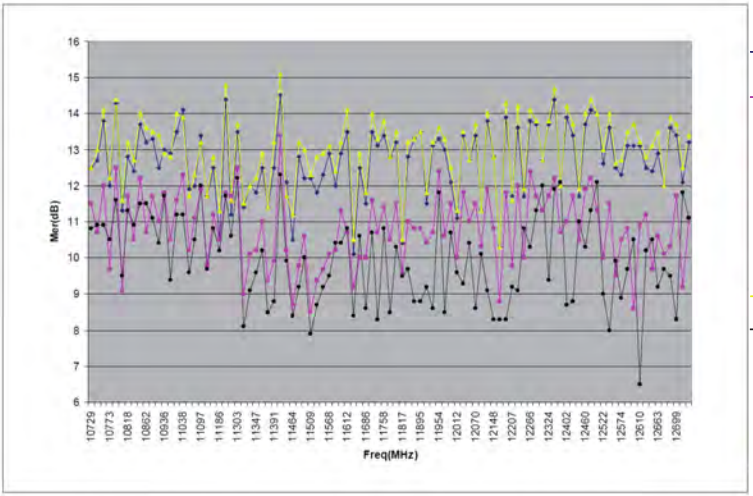
V9500 Mount

Option

SATELLITE TV ANTENNAS FOR R.V.
TECHNICAL SPECIFICATIONS

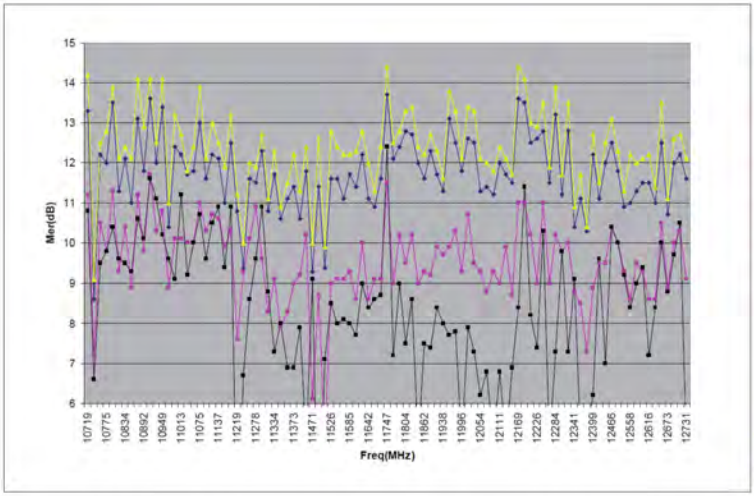
	STATIONARY	FULL MOTION
SPECIFICATION	**DISCOVERY 2**	**EXPLORER 2**
Min E.I.R.P.	**48 dBW**	**48 dBW**
Antenna Gain	**35 dB**	**35 dB**
Dish size	**580 mm (23") x 320 mm (13")**	**580 mm (23") x 320 mm (13")**
Antenna type	**OFFSET + H.P.F.**	**OFFSET + H.P.F.**
Antenna polarization	Linear V/H	Linear V/H
LNB frequency range	10.7 to 12.75 GHz	10.7 to 12.75 GHz
Radome type	UV resistant	UV resistant
Radome diameter	**660 mm (26")**	**660 mm (26")**
Radome height	**390 mm (15")**	**390 mm (15")**
Antenna weight (including radome)	**8 kg (17,6 lb)**	**8 kg (17,6 lb)**
Transmission	**Gear**	**Gear**
Power supply	11,5 ÷ 13,8 VDC/ 0,6 A/h	11,5 ÷ 13,8 VDC/ 1,2 A/h with moving vehicle 1 A/h in standby
Peak	2.5A	5A
Operating temperature range	- 20° to + 55°	- 20° to + 55°
Elevation range	**15° to 50°**	**15° to 50°**
Azimuth turn range	Unlimited	Unlimited
Acquisition time stationary	about 40 sec.	< 40 sec.
Acquisition time in motion	-	< 50 sec.
Tracking rate	-	> 50°/sec.
Standard Satellites loaded in control unit *	ASTRA1 19°E ASTRA2 28°E HOTBIRD 13°E	2 satellites + 1 standby
Work conditions	Stationary	Stationary and full motion
Type of stabilization	-	gyro on 2 axis + 3° axis by interpolation
Standby	Automatic	Manual

Parabolic dishes comparative graphic on ASTRA 1 19° E - Average MER (dB)



Parabolic home dish: 12.68 Competitor: 10.78 S500S/M: 12.95 Discovery (S460S) 9.95

Parabolic dishes comparative graphic on HOTBIRD 13° E- Average MER (dB)



Parabolic home dish: 11.76 Competitor: 9.5 S500S/M: 12.36 Discovery (S460S) 8.28

DISCOVERY 2 – model S500S2

12V Control Unit

SD Card Reader

DVB S2 FULL HD

- Satellite TV antenna for **motor-homes, trucks and buses**;
- It works with **parked vehicle**;
- Efficient and High performing dish **as a 60cm (24") home parabolic dish**;
- With **DVB-S2** technology for receiving all **FULL HD** channels and insuring high performance standards of signal reception;
- **58x32cm (32x13")** parabolic dish with high gain and a low noise factor LNB and the innovative elliptic feed-horn to avoid spill-over (H.P.F.);
- With **1 decoder output**;
- Equipped with the **control unit** that can be **easily updated with a SD Card** (not included) and **downloading the free software update** directly on www.glomexmobile.com;
- With **3 preloaded satellites** – see page 27 to see the satellites coverage area.

SUPPLIED WITH THE ANTENNA

1,5 mt
TV cable cord

5 mt
Coaxcable

T140
Roof Feed thru

control
unit 12V

SD Card reader*

EXPLORER 2 – model S500M2

12V Control Unit

SD Card Reader

- Satellite TV antenna for **motor-homes, trucks and buses**;
- It works with **moving vehicle**;
- Efficient and High performing dish **as a 60cm (24") home parabolic dish**;
- with **DVB-S2** technology for receiving all **FULL HD** channels and insuring high performance standards of signal reception;
- **58x32cm (32x13")** parabolic dish with high gain and a low noise factor LNB and the innovative elliptic feed-horn to avoid spill-over (H.P.F.);
- With **1 decoder output**;
- Equipped with the **control unit** that can be **easily update with a SD Card** (not included) and **downloading the free software update** directly on www.glomexmobile.com;
- With **3 preloaded satellites** – see page 27 to see the satellites coverage area.

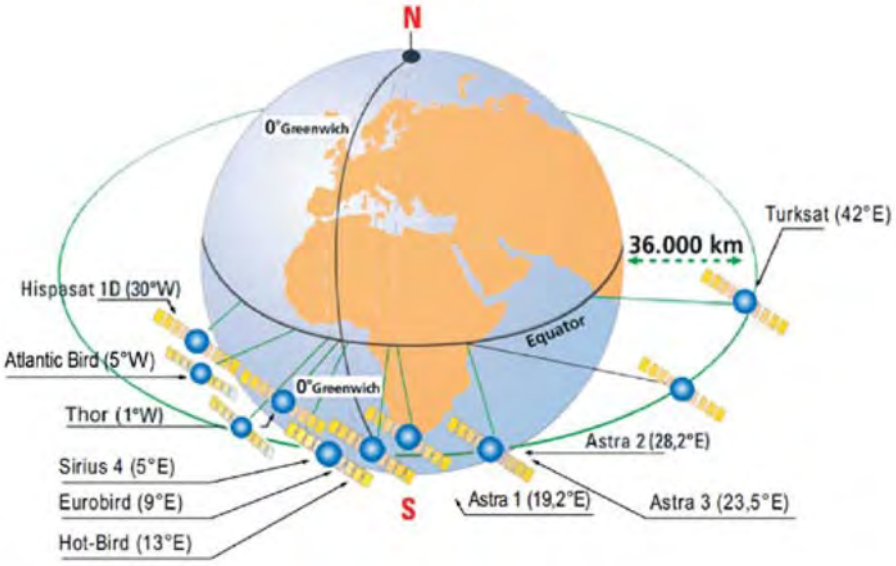
DISCOVERY 2 / EXPLORER 2 PARABOLIC DISH: EFFICIENT AND HIGH PERFORMING AS A 60CM / 24" HOME PARABOLIC DISH

Ø 600mm/24"

Watch our videos on

TV AND RADIO SATELLITE POSITIONS

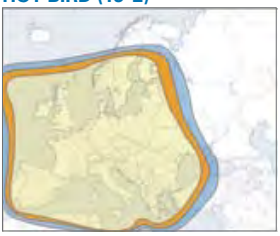
The satellites for telecommunication are positioned on a geostationary orbit around the earth, synchronized with terrestrial rotation and are relatively static according to the Greenwich meridian, at a height of about 36,000 km above the equator. The satellites are powered by solar panels and they concentrate the transmission of the signal on relatively small terrestrial areas (footprint). The effect of the satellites' signal is of the highest intensity particularly in the center of the area and weaker at the extremities. The below footprint shows the satellite coverage areas that the Glomex antennas are capable of receiving.



FOOTPRINT – EUROPEAN SATELLITE COVERAGE AREA

These maps show the satellite coverage area for each Glomex satellite TV antenna.
The performance of the satellite antenna is affected by meteorological conditions from the navigation area (in the case of bad weather, signals will be weaker and the image quality could decrease, it can even completely fade).
Each satellite covers a specific geographic area and the size of the dish should be suitable for signal reception in the area in which you view TV.

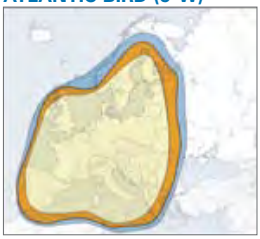
HOT BIRD (13°E)



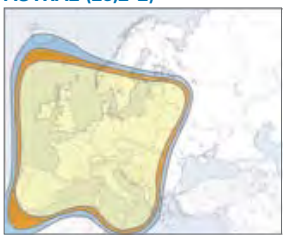
ASTRA1 (19,2°E)

ASTRA2 UK (28,2°E)

ATLANTIC BIRD (5°W)



ASTRA2 (28,2°E)



THOR (1°W NORDIC)

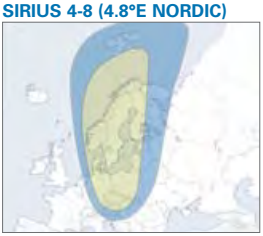
SIRIUS 4-8 (4.8°E EUROPE BSS)

60 cm (24") DISH MARS 4 / RHINE

47 cm (18") DISH SATURN 4 / RHEA

58x32 cm (23"x13")
DISH DANUBE 2 / DISCOVERY 2 /
EXPLORER 2

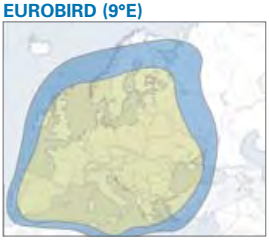
SIRIUS 4-8 (4.8°E NORDIC)



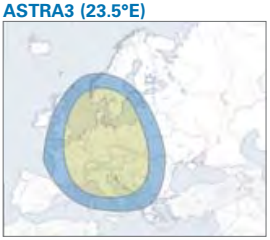
SIRIUS 4-8 (5°E EUROPE FSS)

THOR (1°W EUROPE)

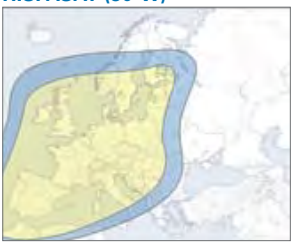
EUROBIRD (9°E)



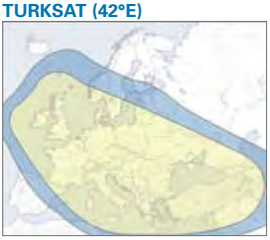
ASTRA3 (23.5°E)



HISPASAT (30°W)



TURKSAT (42°E)



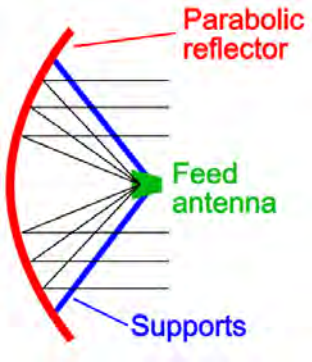
60 cm (24″) DISH MARS 4 / RHINE

47 cm (18″) DISH SATURN 4 / RHEA

PARABOLIC DISHES

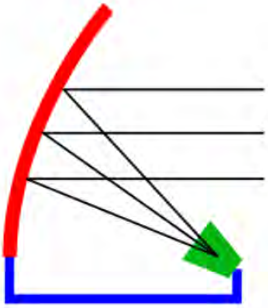
PRIME FOCUS ANTENNA

In this kind of antenna, the focus is on correct spacing between axis and with the antenna in the center of the dish. In order to receive satellite signals the LNB is installed at the center of the dish.



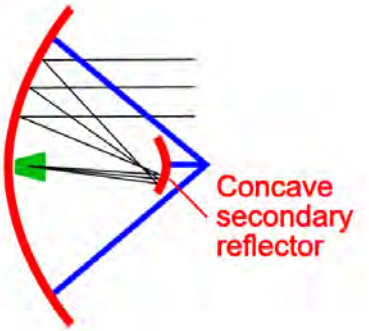
OFFSET ANTENNA

An Offset antennas focus (where the LNB is installed) is shifted into an offset angle with respect to the dish center (usually 20-25). As opposed to a Prime focus antenna, an Offset antenna reflects the signal totally and the LNB does not shadow the dish. Normally Offset antennas are elliptical. **Danube 2, Discovery 2 and Explorer 2 Glomex antennas are based on this technology**.



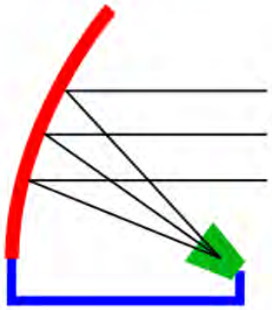
GREGORIAN ANTENNA

The Gregorian Antennas are special dishes that have a double reflector. The parabolic dish reflection conveys the signal to the primary focus of the paraboloid. A second reflector (convex) suitably placed before the first reflector focuses the signal back to the illuminator placed at the center of the first parabolic reflector.



CASSEGRAIN ANTENNA

The Cassegrain Antenna is similar to the Gregorian. The only difference is that the secondary reflector is placed after the primary focus. This implies that, in order to focus the signal towards the feed, also in this case placed at the center of the parabolic reflector, its shape must be convex.

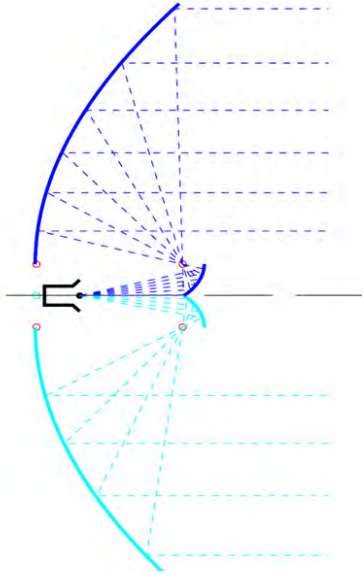


ADE

ADE Antennas are similar to the Gregorian Antenna but the secondary reflector (subreflector) is illuminated in a more homogeneous way, exploiting all dish area. ADE Antennas are more efficient.

Glomex Mars, Rhine, Rhea and Saturn antennas' dishes are based on ADE Technology.

Glomex Mars 4, Rhea, Rhine and Saturn 4 Feed-horn



ADE Antenna

LNB

The LNB (low noise block converter) is the first active component that the signal encounters on its way to the television. Its function is to **amplify** the satellite signal and make the **"frequency conversion"**, i.e. move both frequency bands into a lower one - First Intermediate Frequency. The frequency conversion is necessary because the satellites transmit signals with a very high frequency that is difficult to manage by a coaxial cable. With the conversion block, the full reception range is transferred to a frequency from 5 to 10 times lower (**950-2150 MHz**) for better manageability. The converted signal is transferred to the satellite receiver through a coaxial cable.

An universal LNB converts 4 frequency blocks:

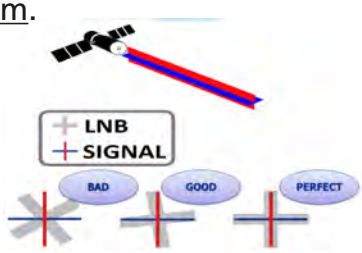
1. **VL** = Vertical Low	10750-11750 MHz (OL 9750 MHz)
2. **HL** = Horizontal Low	10750-11750 MHz (OL 9750 MHz)
3. **VH**= Vertical High	11750-12750 MHz (OL 10600 MHz)
4. **HH**= Horizontal High	11750-12750 MHz (OL 10600 MHz)

POLARIZATION

Satellites can transmit in **linear** (Europe/Middle East) or **circular** (USA) polarization. **Circular polarization does not require any calibration** for the optimization of the received signal.
On the contrary, an LNB operating with **linear polarization needs calibration** upon installation, in order to optimize the alignment of the LNB with the satellite whose transmission you want to receive (**Skew adjustment**).

When you are at the same longitude of the satellite, its horizontal and vertical signals are aligned with the horizon. When the satellite is east or west of your position, the signal of the satellite will appear clockwise or counterclockwise shifted. **Both the horizontal and the vertical signals will be shifted by the same angle, and therefore they will always be perpendicular to each other**.

The degree of rotation will depend on the distance to the east or to the west between the position of the antenna and the position of the satellite, and on your distance from the equator. Once you move to an area with a longitude more than +/-10° from the previous position, the LNB has to be manually adjusted in order to obtain the best possible signal. For calculating the skew adjustment please go to: www.satbeams.com.



MAIN FEATURES OF GLOMEX SATELLITE ANTENNAS

NIT - Network Information Table

This is a special check used in order to ensure that the antenna is tracking the right satellite, as the small separation angle between one satellite and another could generate problems in satellite tracking.

CRJ - Coaxial Rotating Joint

Glomex satellite TV antennas with one output (V8100S2) are equipped with a single coaxial rotating joint and 2 SMB connectors for high quality radio frequency transmission, allowing the antenna to turn infinetly on the azimuth axis.

MCRJ - Multi Output Coaxial Rotating Joint

Glomex satellite TV antennas with multi-output (V9104S2, V9804S2 and R9804S2) are equipped with a coaxial rotating joint allowing the antenna to transmit 4 polarizations (VL, VH, HL, HH) with no coax cable wrapping needed.

EGS - Electronics Gyro Stabilized

All Glomex antennas are equipped with MEMS electronic gyroscopes, developed by Murata, a leader in this sector. Gyroscopes help to counterbalance the movements of the boat, thus obtaining the fastest and most precise rolling and pitching compensation available today on the market.

NO GPS AND OR COMPASS NEEDED

Glomex satellite antennas **do not need to be connected to** external tools such as a **GPS** or **compass** to find the satellite. Installations are simplified without losing signal acquisition speed.

SKEW

The skew option is an automatic compensating system that, physically acts on the LNB and automatically changes its inclination optimizing the polarization in order to obtain the best signal quality. The exact position of the boat is detected by a GPS receiver placed inside the antenna.

SKEW

SSI - Sync Satellite Identification

SSI is the new satellite's recognition system that allows faster speed in searching for satellites. The system checks the NID (Network ID) to track the selected satellite.
SSI is current used on the Glomex R9804S2 and the R500S2 river antennas.

SSI Sync Satellite Identification

SCC - Single Cable Connection

Glomex antennas make installation and setup **easier** for installers. Glomex antennas with one output need **only one cable** to work and to connect to the TV set.

SCC

HPD - High Performance Dish

Glomex antennas are equipped with the new **high-performance parabolic dishes**, designed to optimize signals and to compensate quality loss due to the duplication of satellites in the Earth's orbit and to transmissions on the same frequencies.

HPD

STO - Silent Tracking Operation

This new noise reduction system is based on new electronics and software which allow for quiet tracking of the satellites.

STO

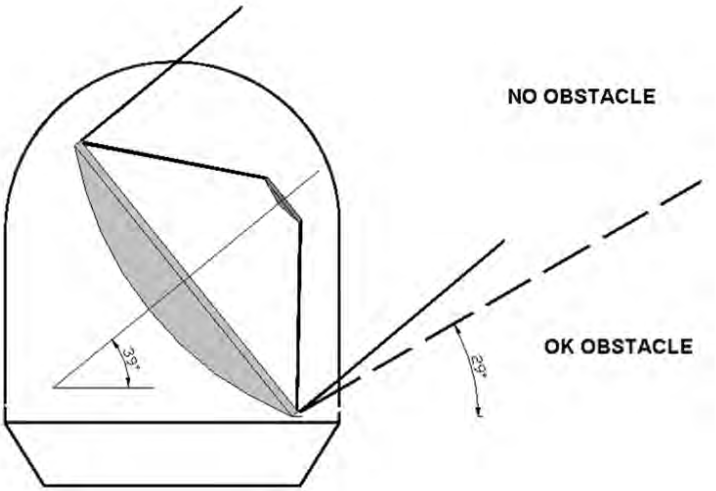
TLT - Test Lab Tested

All Glomex products undergo rigorous testing for UV exposure, mechanical, electrical and electronic operation before the are tested aboard the Test Lab boat. Once aboard the Test Lab, these antennas are subjected to typically installation and harsh marine environments to faithfully reproduce the conditions that the customer will experience on their boat ensuring complete customer satisfaction. The acronym TLT is synonymous with the research, development, experimentation, and quality assurance that have made Glomex the leader in antennas.

ROLLING and PITCHING

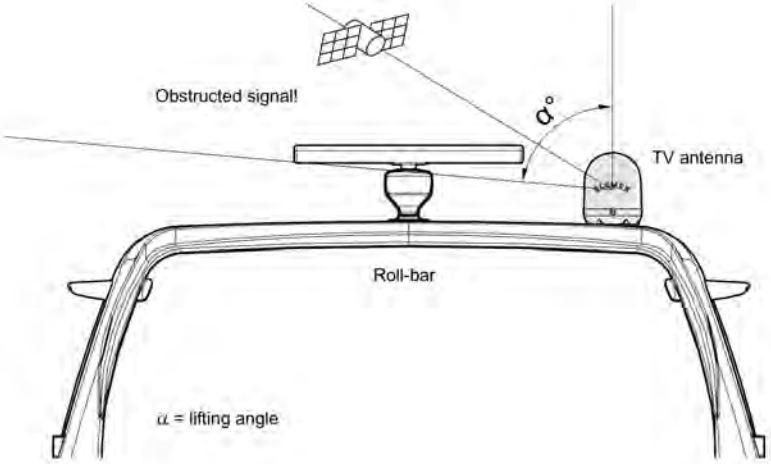
Rolling and pitching are harsh marine environmental conditions. In such applications, satellite TV antennas require stabilization in order to accurately receive TV signal. DVB-S2 antennas can only accommodate a small amount of pointing error before being rendered unable to communicate with the satellite.
In the past, many types of gyros have been used for this application, with varying degrees of success: i.e. dynamically tuned gyros are very stable, but have reliability problems; fiber optic gyros have been used, but stability in the environment is an issue.

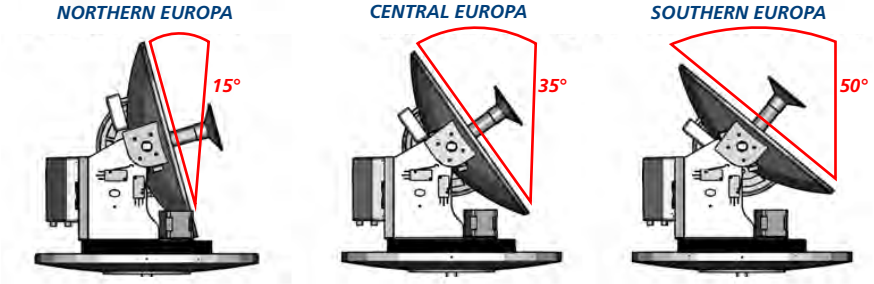
Glomex TV satellite antennas are equipped with an efficient compensation system (for boat roll and pitch) by means of electronic gyro-stabilizers (EGS), and with a single or multi coaxial rotating joint (CRJ or MCRJ), allowing the antenna to balance the reception of signal by turning infinitely on the azimuth axis.



ELEVATION

Elevation is the pointing angle up from the ground or horizon. 0° is the horizontal angle looking along the ground and 90° is the vertical straight up or 'zenith' pointing angle.
In the **northern hemisphere** the angles are different to those in the southern hemisphere. This is because below the equator you have to look north while in the northern hemisphere you have to look south to the equator.
This is determined by your Lat and Long (Latitude and Longitude) which is your position.
When at or near the equator the angles are more extreme. In the north of Europe the elevation angle is very small, the satellite is very low in the horizon and it is more probably to have an obstacle between the antenna and the satellite.



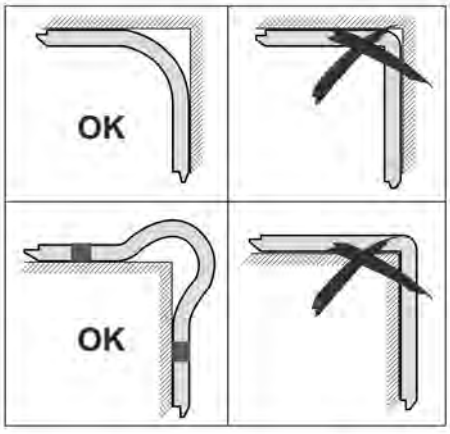


COAXIAL CABLES

- **Do not exceed the recommended length of cable** as this may reduce the signal to an unusable level and make finding the satellites difficult and/or watching TV.

- **Pay attention not to bend the coaxial cables** at a right angle; the bending angle must always be greater than 120°.

- You must use solderless **gold-plated** F connectors with satellite coaxial cables.



INSTALLATION - USEFUL TIPS

Before proceeding with the installation, please understand the following guidelines:

- Please remember that the best position for the satellite TV antenna is in the middle of the boat, in the lowest possible position.

- Minimize obstruction. The antenna requires a clear view of the sky in order to receive satellite TV signals. The fewer the obstacles, the better the system operation. Any foreign body (flags, antennas, radar antennas, sailboat masts, cranes, bridges, etc.) between the antenna and the satellite obstructs the signal and prevents correct reception.

- Make sure that the mounting surface is wide enough for the antenna base to be installed.

- Make sure that the mounting surface is resistant and rigid enough to support the weight of the antenna and the vibrations which could occur.

- Do not install the antenna near speakers or magnetic sources. If this is not possible, it is necessary to compensate the magnetic source, paying attention not to interfere with the on-board compass.

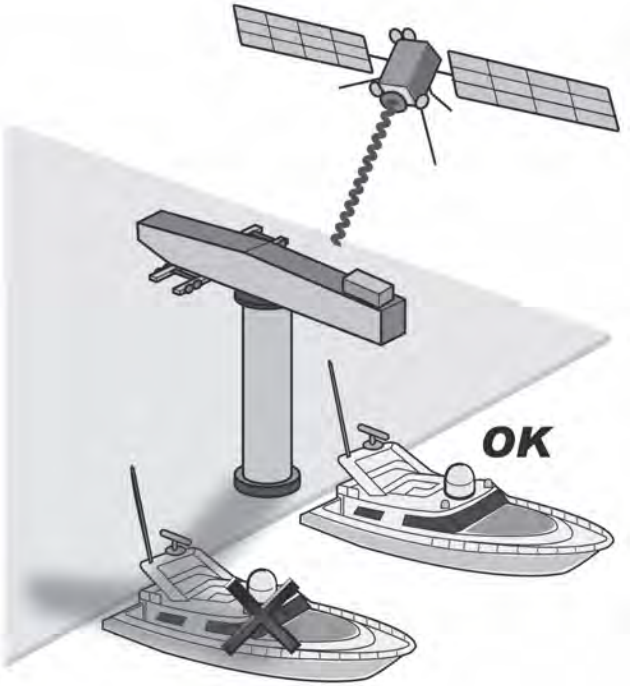
- The antenna requires a lifting angle between 5° and 90° for models V8100S2 and V9104S2 and between 15° and 90° for models V9804S2 and V9804SKEWS2 to receive satellite signals.

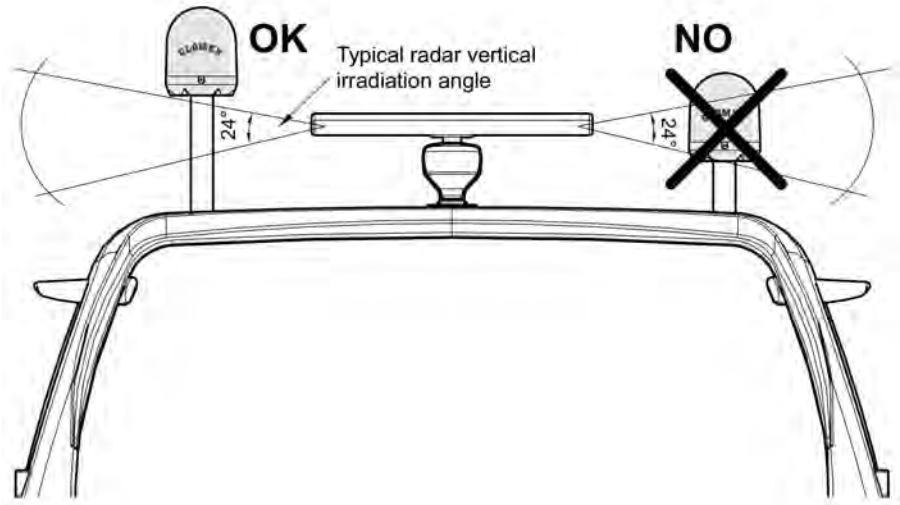
- Satellite antenna requires a clear view of the sky to receive satellite signals. Possible very common signal obstructions include masts of other boats, bridges, on-board equipment, etc. Satellite antennas also do not operate inside storage areas.

- Please also consider the position of the antenna with respect to the position of all various attachments or wiring harnesses inside the boat.

- The control unit should be mounted in a convenient position for the adjusting operations. It should be near the receiver/TV-set unit, so that the TV screen may be watched while carrying out the operations on the control unit.

We recommend not to install the antenna at the same level of the radar, as the radar's energy could damage the antenna. The antenna should be positioned at a distance of at least 1.5 m from other transmitting antennas (VHF, radar).


OK


OK
Typical radar vertical
irradiation angle
NO
24°
24°

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