

SATMARIN **MSS** SOLUTIONS



The low-frequency L-band spectrum (1-2GHz) for satellite transmissions is part of a selection of services labelled 'Mobile Satellite Services' (MSS). These services offer satellite bandwidth on a 'pay as you go' basis and have been the most popular form of voice and data connectivity in the maritime world since before the turn of the century.

Bandwidth spectrum is limited in L-band, so operational costs can be higher than VSAT, although equipment costs can be correspondingly lower. Likewise, L-band services are less cost-predictable than VSAT, and stories of 'bill shock' have been common in the past, where users have to pay tens of thousands of dollars more than expected because usage wasn't monitored, i.e., a large Windows update had been downloaded over the air.

However, L-band is prized in the maritime community as a medium for transmitting and receiving data/communications even in rainy, foggy and stormy conditions. Likewise, the global nature of L-band networks from Inmarsat and Iridium means that ships can communicate using a single service. The trade-off here, is the higher operational costs and the relatively low connectivity speeds of L-band..

In its favour though, is the fact that L-band terminals are much smaller than VSAT antennas, so can be deployed on almost any size and type of vessel, from yachts through to super tankers. In addition to L-band's all-weather ability, the hardware is ideal for maritime use also, because less pointing accuracy is required from the antennas, so a stable link is easier to achieve.

While the limitations of L-band restrict high dependence on digital applications for smart shipping, the frequency will continue to play a significant role in the future. L-band terminals are used to augment VSAT installations, coming into action when the primary Ka-, Ku- or C-band system is not available due to weather conditions or lack of service in specific regions.

INTELLIAN C700 TERMINAL

The Intellian C700 maritime satellite terminal connects to the Iridium Certus network of 66 Low-Earth Orbit (LEO) satellites, providing pole-to-pole communication.

The Intellian C700 uses a powerful 12 patch phased-array antenna to deliver the highest performing Certus® terminal, especially at low angles of elevation, which is

critical in a maritime environment. The C700 provides IP data speeds of up to 704 Kbps, and the H2 class high power amplifier supports uplink data speeds up to 352 Kbps as standard. Users will gain both scalability and advanced performance provided by the Iridium Certus network, keeping you connected whenever and wherever needed.



True Global Coverage

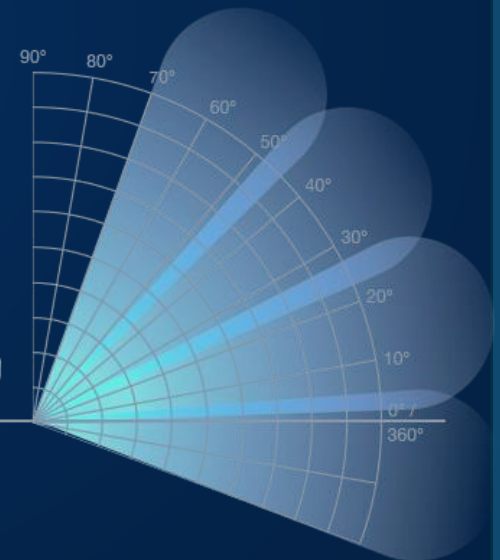
- Iridium LEO network of 66 satellites
- Pole to Pole coverage
- Low-Earth Orbit, stronger signals
- Low latency, high speed and always-on
- GMDSS Ready

Best in Class Performance

- Using a 12 element patch phased-array antenna for maximum coverage
- High power H2 antenna amplifier for 352 Kbps uplink speed
- Excellent performance during any ship motion and low satellite elevation angles
- VSAT companion for out of band management, supporting multiple users
- Optimal satellite and beam handover ensuring seamless voice and data connectivity



INTELLIAN C700
(12 PATCH)



COBHAM SAILOR 4300 TERMINAL

As a high-performance standalone terminal, or a reliable companion for existing VSAT systems, SAILOR 4300 L-band is the best solution in the market.

In choosing Cobham's SAILOR 4300 users will have the unique ability to access the largest portfolio of antennas in the industry, ensuring the seamless transition onto one

integrated platform, powered by the world's leading maritime connectivity company.

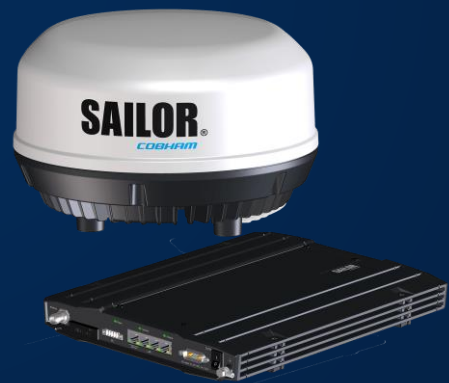


Convenience

- A standard Application Programming Interface (API) provides the flexibility needed for service providers or end users to create custom features and capabilities.
- Extremely light and compact with one cable below deck and an integrated antenna and modem
- Part of trusted SAILOR portfolio
- Familiar user interfaces known from SAILOR VSAT portfolio and expert trained global maritime service network
- Easy integration with onboard voice and data smart boxes

Cost Effective

- Through a simplified installation process, cost optimised hardware and with no scheduled service requirements, the SAILOR 4300 minimises the overall cost of ownership.
- Cost effective cabling approach: No need for new, expensive high spec cables. Reuse any existing cabling to save hours of installation time and thousands of dollars
- Reuse existing network devices: No new devices required. SAILOR 4300 easily plugs into existing network setup onboard



COBHAM FB 150/250/500 TERMINAL

SAILOR FleetBroadband brings broadband Internet to almost any vessel. They are by far the most advanced, function rich terminals in the markets they clearly lead.

The high-performance SAILOR FleetBroadband family enables email and web browsing, voice calling, video streaming and custom IP applications. Rugged and reliable, SAILOR FleetBroadband terminals allow you to enhance operational communication, fulfil reporting requirements, monitor equipment and diagnose faults, or just stay

connected with friends and family on land. These maritime broadband terminals are compact and lightweight, yet quality design and manufacturer ensure reliability in even the harshest conditions.

SAILOR FleetBroadband terminals feature the Inmarsat FleetBroadband Multi-Voice Service, where you can add up to nine simultaneous voice lines to a single terminal without affecting crucial onboard communication

SAILOR 150 FleetBroadband is a compact system designed to open up the world of maritime broadband for almost any vessel.

With a small antenna, weighing just 3.9kg, SAILOR 150 FleetBroadband is the most lightweight, compact and easy to install FleetBroadband system available. Get reliable, high quality global internet and voice on any kind of boat or ship. Email, web browsing, even custom IP solutions; SAILOR 150 FleetBroadband opens up a world of communication.

SAILOR 250 FleetBroadband is a compact system designed to provide performance and power at the right price point for a wide variety of vessel types.

With data speeds up to 284 kbps from an antenna diameter less than 30 cm, which weighs just 5 kg, SAILOR 250 FleetBroadband is the perfect balance between form and function. Easy installation and the ability to provide affordable, high-speed access to internet/intranet and email, with voice calling and data simultaneously ensures professional communication possibilities for any vessel.

SAILOR 500 FleetBroadband is the Flagship of our market leading Inmarsat FleetBroadband portfolio and is designed to meet the voice and data communication needs of maritime professionals globally.

SAILOR 500 FleetBroadband is small and lightweight but enables a wealth of functionality including broadband internet/intranet, email and secure VPN with voice calling and data use simultaneously. Lower capital investment relative to competing connectivity services and flexible, simple installation, even by crew, enables cost-effective, high bandwidth connectivity and communication.



	SAILOR 500 FleetBroadband	SAILOR 250 FleetBroadband	SAILOR 150 FleetBroadband
Standard IP	Up to 432 kbps	Up to 284 kbps	Up to 150 kbps
Streaming IP	8, 16, 32, 64, 128,256 kbps	8, 16, 32, 64,128 kbps	-
ISDN Data	64 kbps	-	-
SMS (standard 3G)	160 characters	160 characters	160 characters
Multi-voice	9 voice lines simultaneously	6 voice lines simultaneously	4 voice lines simultaneously
Ethernet/PoE	4 ports	4 ports	2 ports
Phone/Fax (2-wire)	2 ports	2 ports	1 ports
ISDN	1 port (data/3.1 kHz Audio)	1 port (data/3.1 kHz Audio)	-

IRIDIUM CERTUS 700 MARITIME

Iridium Certus is the new advanced multi-service platform enabled by the upgraded Iridium constellation.

Extending the reach of terrestrial and cellular infrastructure like never before, Iridium Certus redefines the capabilities of mobile satellite communications across maritime, IoT, aviation, land mobile, and government applications.

With a portfolio of ever-expanding voice and data services,

Iridium Certus allows enterprises, governments, and individuals to connect with greater value and greater reach than any other mobile wireless network.

Maritime Terminals:

Intellian C700 Standalone: \$ 8,995,-

Intellian C700 Rack Mount: \$ 9,495,-

Sailor 4300 Standalone: \$ 8,995,-

Sailor 4300 Rack Mount: \$ 9,495,-

3 Month Minimum Plan

	0 MB	50 MB	100 MB	250 MB Double	1 GB Double	5 GB	10 GB	VSAT Backup
Activation	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Included MB	0	50	100	500	2,000	5,000	10,000	300
Subscription	\$108	\$323	\$575	\$869	\$1,275	\$1,580	\$2,297	\$359
Out of bundle/MB	\$14.36	\$7.18	\$5.74	\$3.73	\$1.08	\$0.79	\$0.50	\$1.44
Minimum contract	3	3	3	3	3	3	3	3
Early termination	\$144	\$502	\$861	\$1,292	1,938	\$2,297	\$2,297	\$2,756
DSG Pooling	No	No	Yes	Yes	Yes	Yes	Yes	
DSG surcharge	n/a	n/a	10%	10%	10%	10%	10%	

Streaming Data Rates per minute	
14.4 Kbps	\$1.00
28 Kbps	\$2.87
40 Kbps	\$4.31
56 Kbps	\$5.17
96 Kbps	\$10.05
128 Kbps	\$14.36
168 Kbps	\$18.66
256 Kbps	\$28.71
Additional Services	
Static public IP	\$30.00

Voice Rates per minute	
To PSTN including call forward	\$0.43
To Iridium	\$0.30
To other satellite networks	\$12.92
To voicemail	\$0.30
To additional shortcodes	\$0.30
Alerts and other calls	\$0.43
PSTN to Iridium using local numbering	\$0.52
PSTN to Iridium via 2-stage dialing	\$0.52
Call forward to voicemail	\$0.00
To Global Customer Service	\$0.00

Certus prepaid scratch cards	5 minutes	45 minutes	90 minutes
Price per card	\$5.18	\$27.27	\$50.24
Cost per minute	\$1.04	\$0.61	\$0.56



2022

IRIDIUM CERTUS 700 LEASE MARITIME

Iridium Certus is the new advanced multi-service platform enabled by the upgraded Iridium constellation.

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Intellian C700 Standalone: \$ 8,995,-

Intellian C700 Rack Mount: \$ 9,495,-

Sailor 4300 Standalone: \$ 8,995,-

Sailor 4300 Rack Mount: \$ 9,495,-

12 Month Minimum Plan

	0 MB	50 MB	100 MB	250 MB Double UP	1 GB Double UP	5 GB	10 GB	VSAT Backup
Activation	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Included MB	0	50	100	500	2,000	5,000	10,000	300
Intellian C700 no DSG Pooling	\$572	\$787	\$1,039	\$1,333	\$1,739	\$2,043	\$2,760	\$822
Intellian C700 with DSG Pooling			\$1,096	\$1,419	\$1,867	\$2,300	\$2,990	\$858
Minimum contract	12	12	12	12	12	12	12	12

36 Month Minimum Plan

	0 MB	50 MB	100 MB	250 MB Double UP	1 GB Double UP	5 GB	10 GB	VSAT Backup
Activation	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Included MB	0	50	100	500	2,000	5,000	10,000	300
Intellian C700 no DSG Pooling	\$292	\$506	\$758	\$1,052	\$1,458	\$1,763	\$2,480	\$542
Intellian C700 with DSG Pooling			\$815	\$1,140	\$1,586	\$1,920	\$2,710	\$578
Minimum contract	12	12	12	12	12	12	12	12

INMARSAT FLEETBROADBAND

FleetBroadband remains a cost-efficient solution to keep your vessel connected.

Easily navigate through tough waters with access to real-time weather reporting, electronic charts and communications from shore-based teams.

Improve vessel performance, reduce fuel costs and increase the accuracy of port arrival times with remote diagnostics and better route planning.

Guarantee you and your crew can make more than one call at the same time with access to multiple telephone lines and data streams.

Meet the operational and safety challenges of your crew and vessel without fail.

FleetBroadband keeps running day and night, always, no matter where in the world you are.

Terminals

Sailor 500 FleetBroadband:	\$ 13.995,-
Sailor 500 FleetBroadband Rack Mount:	\$ 14.795,-
Sailor 250 FleetBroadband:	\$ 7.995,-
Sailor 250 FleetBroadband Rack Mount:	\$ 8.795,-
Sailor 150 FleetBroadband:	\$ 6.495,-

1 Month Minimum Plan

	Std 1 SIM	100MB 1 or 2 SIMs	375MB 1 or 2 SIMs	750MB 1 or 2 SIMs	1.5GB 1 or 2 SIMs	5GB 1 or 2 SIMs	10GB 1 or 2 SIMs	20GB 1 or 2 SIMs	40GB 1 or 2 SIMs
Monthly subscription	\$531	\$986	\$1.593	\$1.820	\$ 2.173	\$2.586	\$3.413	\$6.405	\$9.516
Included MB	25	100	375	750	1.536	5.120	10.240	20.480	40.960
In Allowance per MB	\$21.23	\$9.55	\$4.25	\$2.43	\$1.41	\$0.51	\$0.33	\$0.31	\$0.24
Out of Allowance per MB	\$31.84	\$14.33	\$6.37	\$3.64	\$2.12	\$0.75	\$0.49	\$0.48	\$0.35
Voice per Minute									
Fixed Global Rate	\$0.55	\$0.55	\$0.55	\$0.53	\$0.51	\$0.46	\$0.46	\$0.46	\$0.46
Cellular Global Rates	\$0.64	\$0.64	\$0.64	\$0.64	\$0.64	\$0.62	\$0.62	\$0.62	\$0.62
FB/FO/BGAN/SB/GSPS	\$0.71	\$0.71	\$0.71	\$0.53	\$0.51	\$0.46	\$0.46	\$0.46	\$0.46
SMS per message	\$0.48	\$0.48	\$0.48	\$0.31	\$0.27	\$0.18	\$0.18	\$0.18	\$0.18

These plans have a 1 month minimum contract term. Standard billing rules apply. A full 1 month charge will apply if activated on the 1st of the month. Customers can move between plans after the minimum term has been reached in line with the next billing period. A new minimum term will apply once moved.

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Sailor 250 FleetBroadband Rack Mount:	\$ 8.795,-
Sailor 150 FleetBroadband:	\$ 6.495,-

12 Month Minimum Plan

	Std 1 SIM	100MB 1 or 2 SIMs	375MB 1 or 2 SIMs	750MB 1 or 2 SIMs	1.5GB 1 or 2 SIMs	5GB 1 or 2 SIMs	9GB 1 or 2 SIMs	20GB 1 or 2 SIMs	40GB 1 or 2 SIMs
Monthly subscription	\$470	\$846	\$1.410	\$1.611	\$1.922	\$2.288	\$3.020	\$3.942	\$5.256
Included MB	\$18.78	\$8.45	\$3.75	\$2.14	\$1.24	\$0.44	\$0.33	\$0.20	\$0.13
In Allowance per MB	25	100	375	750	1.536	5.120	9.216	20.480	40.960
Out of Allowance per MB	\$28.16	\$12.68	\$5.64	\$3.22	\$1.88	\$0.68	\$0.49	\$0.29	\$0.20
Voice per Minute									
Fixed Global Rate	\$0.55	\$0.55	\$0.53	\$0.48	\$0.46	\$0.40	\$0.40	\$0.40	\$0.40
Cellular Global Rates	\$0.64	\$0.64	\$0.64	\$0.64	\$0.64	\$0.55	\$0.55	\$0.55	\$0.55
FB/FO/BGAN/SB/GSPS	\$0.71	\$0.62	\$0.53	\$0.48	\$0.46	\$0.40	\$0.40	\$0.40	\$0.40
SMS per message	\$0.48	\$0.40	\$0.33	\$0.27	\$0.24	\$0.16	\$0.16	\$0.16	\$0.16

- These plans have a 12 month minimum contract term. Standard billing rules apply.
- Customers may upgrade at any time in line with the next billing period.
- A new minimum term will apply once moved.
- There will be early termination charge for early deactivation or plan downgrade. This is the monthly subscription charge times the number of months to complete the minimum term or 3 months, whichever is lowest.
- A SCAP application form is required to be authorized by Inmarsat before a connection on a 20GB or 40GB plan can be completed.

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Terminals

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Sailor 250 FleetBroadband:	\$ 7.995,-
Sailor 250 FleetBroadband Rack Mount:	\$ 8.795,-
Sailor 150 FleetBroadband:	\$ 6.495,-

24 Month Minimum Plan

	150MB 1 or 2 SIMs	500MB 1 or 2 SIMs	1GB 1 or 2 SIMs	2GB 1 or 2 SIMs	6GB 1 or 2 SIMs	10GB 1 or 2 SIMs	20GB 1 or 2 SIMs	40GB 1 or 2 SIMs
Monthly subscription	\$934	\$1.501	\$1.702	\$2.013	\$2.471	\$3.203	\$3.843	\$5.124
Included MB	150	500	1.024	2.048	6.144	10.240	20.480	40.960
Annual in Advance Sub.	\$11.200	\$18.000	\$20.423	\$24.156	\$29.646	\$38.430	--	--
Annual Allowance per MB	1.800	6.000	12.288	24.576	73.728	122.880	--	--
In allowance per MB	\$6.22	\$3.00	\$1.67	\$0.99	\$0.40	\$0.31	\$0.18	\$0.13
Out of allowance per MB	\$9.33	\$4.50	\$2.49	\$1.48	\$0.60	\$0.48	\$0.27	\$0.18
Voice per Minute								
Fixed Global Rate	\$0.53	\$0.51	\$0.46	\$0.40	\$0.40	\$0.40	\$0.40	\$0.40
Cellular Global Rates	\$0.62	\$0.62	\$0.62	\$0.55	\$0.55	\$0.55	\$0.55	\$0.55
FB/FO/BGAN/SB/GSPS	\$0.60	\$0.51	\$0.46	\$0.40	\$0.40	\$0.40	\$0.40	\$0.40
SMS per message	\$0.38	\$0.31	\$0.26	\$0.16	\$0.16	\$0.16	\$0.16	\$0.16

- These plans have a 24 month minimum contract term. Standard billing rules apply.
- Customers may upgrade at any time in line with the next billing period.
- A new minimum term will apply once moved.
- There will be early termination charge for early deactivation or plan downgrade. This is the monthly subscription charge times the number of months to complete the minimum term or 6 months, whichever is lowest.
- These plans are available as 12 months in advance. The full 12 month allowance is available for use from the day of activation. The service can be deactivated in the 12 month advance period but there will be no refund.
- A SCAP application form is required to be authorized by Inmarst before a connection on a 20GB or 40GB plan can be completed.

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Terminals

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Sailor 500 FleetBroadband Rack Mount:	\$ 14.795,-
Sailor 250 FleetBroadband:	\$ 7.995,-
Sailor 250 FleetBroadband Rack Mount:	\$ 8.795,-
Sailor 150 FleetBroadband:	\$ 6.495,-

Shared Corporate Allowance Package

SCAP 12/24 Month Plans	1.5GBB 1 or 2 SIMs 12 Months	5GB 1 or 2 SIMs 12 Months	9GB 1 or 2 SIMs 12 Months	2GB 1 or 2 SIMs 24 Months	6GB 1 or 2 SIMs 24 Months	10GB 1 or 2 SIMs 24 Months
Monthly subscription per vessel	\$2.105	\$2.471	\$3.203	\$2.196	\$2.654	\$3.386
Included MB	1.536	5.120	9.216	2.048	6.144	10.240
In Allowance per MB	\$1.37	\$0.48	\$0.35	\$1.08	\$0.44	\$0.33
Out of Allowance per MB	\$2.05	\$0.73	\$0.51	\$1.61	\$0.64	\$0.49
Voice						
Fixed Global Rate	\$0.46	\$0.40	\$0.40	\$0.40	\$0.40	\$0.40
Cellular Global Rates	\$0.64	\$0.55	\$0.55	\$0.55	\$0.55	\$0.55
FB/FO/BGAN/SB/GSPS	\$0.46	\$0.40	\$0.40	\$0.40	\$0.40	\$0.40
SMS per message	\$0.24	\$0.16	\$0.16	\$0.16	\$0.16	\$0.16

- These plans have a 12 or 24 month minimum contract term. Standard billing rules apply. Customers may upgrade at any time in line with the next billing period. A new minimum term will apply once moved.
- There will be early termination charge for early deactivation or plan downgrade. This is the monthly subscription charge times the number of months to complete the minimum term or 3 months (for a 12 month term plan) or 6 months (for a 24 month term plan), whichever is lowest.
- Once a fleet has 5 or more vessels connected on the same plan then that fleet can apply for a SCAP.
- A SCAP application form is required to be authorized by Inmarsat the vessels can be moved into a SCAP. Each vessels adds the subscription and allowance into the SCAP which can then be shared by all vessels into the SCAP.
- Additional vessels may be added to an existing SCAP on the 1st of the month, if activation is required prior to the 1st the vessel is to be activated on another plan then upgraded on the 1st.