

Nobeltec® User's Guide

SLR-200 AIS Receiver

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SLR-200 AIS Receiver

For use with Nobeltec® Admiral™

NOBELTEC®

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AIS Receiver Limited Warranty

The Nobeltec SLR-200 AIS Receiver is warranted by Comar Systems Ltd. Comar Systems Ltd. warrants this product to be free from defects in materials and craftsmanship for one year from the date of purchase. Comar Systems Ltd will, at its sole option, repair or replace any components that fail in normal use. Such repairs or replacement will be made at no charge to the customer for parts and labor. In the event that an AIS receiver needs to be returned, Nobeltec should be contacted at 800-946-2877 to obtain an RMA # and instructions for returning the unit. Any AIS receiver sent to Nobeltec without an RMA # will be returned to the sender.

This warranty does not cover failures due to abuse, misuse, accident or unauthorized alteration or repairs. The above does not affect the statutory rights of the consumer.



Disclaimer: This product is designed to aid navigation and should be used to augment normal navigational procedures and practices. It is the user's responsibility to use this product prudently. Neither Comar Systems Ltd, Nobeltec or their dealers accept responsibility or liability either to the product user or their estate for any accident, loss, injury or damage whatsoever arising out of the use of this product.

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Nobeltec is the world leader in marine navigation software and charts for the PC. Nobeltec products are powerful tools and users may experience technical difficulties from time to time. To help you make the most of your Nobeltec product and to ensure that you have access to technical support if needed, Nobeltec has created a wide range of training and support options to fit your needs. In addition to offering free and unlimited phone, web and E-mail support during the first year, we also have solutions for more immediate needs. Make sure to read about our Annual VIP Support as well as our "Pay as you Go" options.

Nobeltec Training CD

If your needs are more training and education oriented, we have just the solution. Included with each copy of Nobeltec Admiral 7.0 is the Nobeltec Training CD. This easy to use CD is full of free training videos and useful information that ensures that even the most timid computer user can get right to work and make the most of Nobeltec! If you did not get a training CD with Admiral 7.0, please contact the Nobeltec sales team at 800-946-2877 to receive your copy.

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Nobeltec is proud to present a new and exciting technical support option for customers that prefer a higher level of service; the VIP Program!

The VIP Program includes:

- **Priority Phone Service** - Guaranteed maximum on hold time of 5 minutes or a call back is scheduled
- **Priority Email Service** - 2 hour business day response
- **Toll Free Line** - Optimal support with no long distance charges. (US and Canada only)
- **Nobeltec VIP Polo Shirt** - Official VIP shirt - One of a kind
- **VIP Membership Card** - Quick reference for contact numbers and more

You can purchase 12 months of unlimited VIP support for only \$399. To obtain more information or to sign up for the VIP program, please contact Nobeltec at 800-946-2877 and speak to anyone in our technical support or sales department.

Additional Support

During the first year of product ownership, Nobeltec is pleased to offer unlimited free technical support. Support is available on the phone as well as through the Internet and e-mail. If time is critical and you want more immediate support, we offer a 'Pay as you Go' option as well.

Support Options include:

- **Phone Support** - (800) 732-2800. Monday through Friday (except holidays) 6:00am to 7:00pm, Mountain Standard Time.
- **Unlimited Web** - www.nobeltec.com/support. Review our *Knowledge Base* and *Frequently Asked Questions* sections.
- **Unlimited E-Mail** - support@nobeltec.com. Answers to e-mailed support questions are usually answered within one business day.
- **Pay as you Go** - (800) 946-2877. Toll free access with priority routing. Calls are \$25 per half hour, billed in half hour increments. Same hours as standard phone support.

After the first year of product ownership, Nobeltec is pleased to continue providing support through the annual VIP service, 'Pay as You Go' option or through e-mail.

Installation and Operating Systems

Nobeltec provides support for most aspects of current Nobeltec products, such as installation and operation, during the first year of ownership. We do not provide support for operating systems that are not supported by their respective manufacturer, such as older versions of Windows®.

External Device Connection

Nobeltec can provide limited support assisting the integration of external devices such as a GPS into the Nobeltec software. However, it is highly recommended that your equipment is installed by an authorized and knowledgeable installer.

Satellite Phones

Nobeltec cannot return calls to satellite phones or other phone systems where charges are incurred by the caller.

Networks

Some Nobeltec applications are designed for the Windows® networking environment. While Nobeltec can provide support for Nobeltec's operation on your Windows® network, you must have a qualified network administrator to ensure that the network itself is fully operational.

Nobeltec Return Policy

Read the License Agreement for the complete return policy. In general, Nobeltec software and hardware purchased directly from Nobeltec comes with a 30-day return policy, provided procedures are followed. Software or hardware purchased from dealers are subject to that company's return or exchange policy. Data, including Passport Deluxe or Passport world charts, is non-returnable.



Warning: Every effort has been made to ensure that all information contained in this manual is accurate. However, AIS is a new technology and related legislation and regulation is subject to change. If regulation changes while this product is on the shelf, we cannot take responsibility for the outdated content in this manual. We advise you to take normal steps to ensure that the information is up to date and current.

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1

Hardware Installation

What is AIS?

AIS is an Automatic Identification System. For improved safety, and specifically for collision avoidance reasons, vessels need to know the position, details and navigational intentions of other vessels using the AIS system within VHF range.

IMO regulations have now been passed covering most commercial vessels worldwide requiring that they have AIS transponders installed on their vessels. The transponders use VHF frequencies to:

- Transmit details of their own vessel
- Receive details from other vessels or navigation aids within VHF range.

The SLR-200

The SLR-200 is an AIS receive-only unit, designed specifically for the small commercial, leisure, fishing boat and vessel monitoring markets in order to listen to other vessel's AIS information.

Once connected to an on-board PC that has **Nobeltec Admiral** installed, AIS data transmitted from ships within range can be displayed on the screen giving the skipper or navigator a visual interpretation of other vessels using the AIS system within VHF range.

The SLR-200 provides standard encapsulated AIS sentences according to the NMEA 0183 specification. Other navigation programs which support this format may use the SLR-200.

Note: When this device is used with another navigation system, Nobeltec Technical Support will troubleshoot the SLR-200 up to the point of verifying that the proper NMEA sentences are being sent to a PC.

Information from AIS transponders carried by most vessels or navigation aids are transmitted at different rates as specified in Table #1 (see Chapter 4, page 13).

Information transmitted from vessels that have AIS transponders on-board include:

- | | | | |
|------------------|-----------------------|------------------|---------------------|
| • Name of Vessel | • Destination | • Size of Vessel | • Vessel Dimensions |
| • Speed (SOG) | • Call Sign | • ETA | • Draft |
| • Position | • Course (COG) | • Type of Vessel | • Status |
| • MMSI Number | • Navigational Status | • Heading | • Cargo |
| • Rate of Turn | • IMO Number | | |

Note: Not all of the above information is necessarily transmitted by each vessel.

To review the latest information regarding AIS compliance and the current status on different regulations surrounding AIS transponders, we recommend you visit www.uais.org/CarriageRequirements.htm.

The Contents of This Box

Before proceeding with the installation of the SLR-200, please check the contents of the box, which should include:

- The SLR-200 AIS receiver with mounting bracket
- Cable #1 - Interface cable for direct serial connection to PC
- Cable #2 - Interface cable for NMEA connection to other devices (if applicable)
- Power cable (12/24 volts)
- User's Guide

Installing the Antenna

The SLR-200 receiver is not supplied with a VHF antenna as the type of antenna and cable requirements differ from vessel to vessel. A suitable VHF antenna should be acquired from a marine electronics outlet.



Tip: The antenna connector type is BNC, 50 ohms.

Choosing a Suitable Location to Install the Antenna

The AIS VHF antenna should be separated as far as possible from the voice VHF to avoid unnecessary interference. The best separation is achieved by installing the antennas apart from each other or on separate sides of the vessel. In addition, the VHF antenna should be mounted at least 3 meters away from and out of the transmitting beam of high-power transmitters or other VHF antenna installations. Once a location has been selected, mount the antenna with a relative clear view of the horizon. Large obstructions that might shade the antenna should be avoided.



Tip: The higher the antenna is located, the longer the range.

Mounting the SLR-200 Receiver

The SLR-200 receiver comes with a mounting bracket which is used to secure it to a suitable bulkhead or shelf. In addition, you should select a location away from excessive heat sources and avoid areas that have high levels of vibration and shock. The image below shows the rear view of the SLR-200 and each connector port.



After you have correctly mounted the SLR-200 receiver, you are ready to connect the cables to the receiver and then configure your software.

Step 1 - Wiring the Data Connector

Two cables have been included with the SLR-200 receiver. You only need one of these cables to properly install the hardware. Review the options below to determine which cable you should use.

Option #1 - Interface Cable for Direct Serial Connection to PC

This cable contains a 9-pin serial port connector at each end of the cable. Use this cable if you plan to connect the SLR-200 to your PC and track AIS targets using Nobeltec Admiral. Plug one end of the cable into the back of the receiver into the Data Connector. Next, plug the other end into an available serial port on your PC. If your computer does not have an available serial port, you can plug this into an available USB port but you will need to purchase a serial port to USB adapter first. Nobeltec offers USB adapters and they can be purchased by calling 800-946-2877 (Single Port Part # NTHSL001, 2-Port Part # NTHSL002, 4-Port Part # NTHSL004).

Option #2 - Interface Cable for NMEA Connection to Other Devices

This package also contains a 9-pin connector that dead-ends on nine separate wires, four of which are visible. This connector is to be used when interfacing the SLR-200 to other NMEA devices. If you need to use this additional cable, the following guide identifies which wires to use.

Cable # 2 - Interface cable for NMEA connection			
	Pin #	Wire Color	Function
RS422	1	Brown	NMEA Output +
	4	Yellow	NMEA Output -

The output data is a NMEA data sentence (VDM) string at 38.4k baud rate.

Step 2 - Wiring the Antenna Connector

In order to complete this step, you must have purchased a separate VHF antenna. In addition, the Antenna Connector on the back of the receiver requires a BNC plug type. After selecting a suitable location to mount the antenna, run the cable from the VHF antenna to the SLR-200 receiver and plug the coaxial cable into the Antenna Connector.

Step 3 - Wiring the Power Connector

Connect the power lead to a 12 or 24-volt DC supply.



Tip: This should be connected to a breaker/switch panel preferably with a fuse rated at 1 amp. Pin connections are shown below.

Power Cable		
Pin #	Wire Color	Function
1	Red	Positive (+9 to +30 VDC)
2	Black	Negative

Your SLR-200 AIS receiver should now be properly wired and ready to receive AIS broadcasts from other vessels. In the next section, we will cover how to configure the receiver for use in Nobeltec Admiral and how to acquire targets.

2

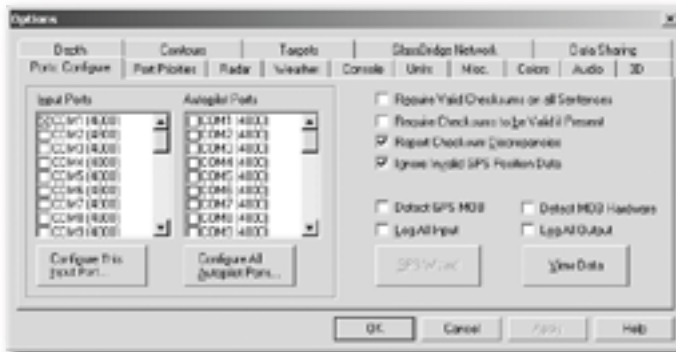
Tracking Targets

Overview

There are three basic types of target inputs supported in Nobeltec Admiral: ARPA and MARPA; which come from a radar and AIS (Automatic Identification System); which comes from a dedicated AIS receiver like the SLR-200. You should now have the SLR-200 wired and connected to your PC. However, before you can begin detecting targets, you must first configure the software to receive information from the SLR-200.

Configuring Admiral To Receive AIS Data

1. Go to **Tools | Options | Ports: Configure**.



2. In the Input column, check the box that lists the port your SLR-200 is connected to.
3. Click the **Configure** button and the bottom of the list box and set baud rate to **38400**.
4. Click **OK**.




Tip: Click the **View Data** button to verify that AIS data is coming into the PC. You must be in a location where AIS data is available in order to see AIS data in this screen. All NMEA data that is being received by the PC will be displayed in this window including that of your GPS and any other devices that you may have connected to the PC. To determine if AIS data is being received, look for an AIVDM NMEA sentence. When finished, click **Done**.

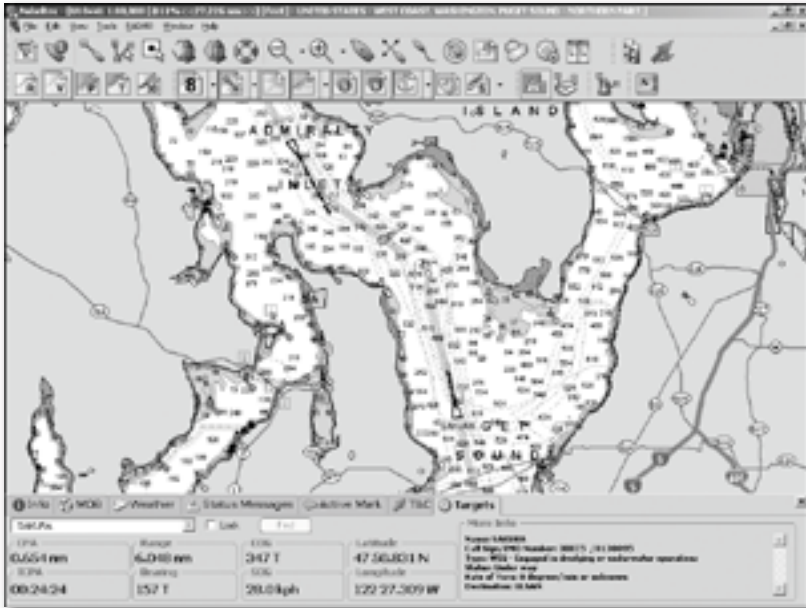
5. Click **OK**.

Setting Up AIS Target Tracking

1. Start Nobeltec Admiral.
2. Make sure the AIS receiver is properly wired and connected to the PC.
3. Click **Tools | Options | Targets**.
4. Click the small down arrow next to the display ARPA Targets and display AIS Targets in the upper portion of the dialog box. Set items to **Yes**.
5. Click **OK**.

Viewing and Selecting AIS Targets

1. Click the **NavBar** toolbar button  to display the NavBar.
2. Click the **Targets** tab.



3. Click the down arrow on the target list to view all targets in the area. If targets are listed, check to make sure that the provider of this data is properly set up and configured to send the data to the computer.
4. The targets will appear on screen at their Lat/Lon.
5. Click on a target on the list in the NavBar and click the **Find** button to center it on the screen.



Tip: You can also select AIS targets by clicking on them on the screen. Their information will then appear in the Targets tab in the NavBar.

Changing How Targets Appear On The Screen

1. Click **Tools | Options | Targets**.
2. Click **Display Predictor** to show an extension line from the target to its predicted location.
3. Adjust the prediction time as needed. Keep in mind that a long prediction time might be misleading because the target can change course.
4. Click **Display Wakes** to see how the target has changed course over time.
5. Click the small down arrow next to the **Target Name Settings** to change the appearance of the target names in the chart window.
6. Click **OK** to complete these changes.

Viewing Target Information On The NavBar

Use the Targets tab on the NavBar to view additional information about a specified tracked target.

Information Listed

- **CPA** - Closest Point of Approach is the closest distance that will be achieved between your vessel and the tracked target, based on your vessel's speed and direction and the target's speed and direction.
- **TCPA** - Time to closest Point of Approach is the time remaining until the CPA will occur.
- **RNG** - The distance between your vessel and the target.
- **BRG** - The bearing to the target vessel.
- **SOG** - The tracked target's Speed Over Ground.
- **COG** - The tracked target's Course Over Ground
- **LAT** - The Latitude of the target vessel.
- **LON** - The Longitude of the target vessel.

Changing The Alarm Settings For Tracked Targets

1. Click **Tools | Options | Targets**.
2. Click **Detect Threats**.
3. Adjust the **Closest Point of Approach (CPA)**. This is the distance from your vessel that a target may reach before a target is deemed a threat.
4. Set the **Time to Closest Point of Approach (TCPA)**. This is the time remaining before the CPA is reached. Enter a value in seconds.
5. Click the **Audible Alarm** if desired.

Admiral is designed to look for threats using the combination of CPA and TCPA. As an example, a vessel 1 nm away is not a threat if your threat CPA is set to 0.05 nm. However, if you set threat TCPA to 3:00 minutes (for example) and the target vessel is heading towards you and will be within 0.05 nm of your position within the next 3 minutes, Admiral warns you of this threat.

Naming Conventions For Targets

When Admiral displays target information, sometimes names are not yet associated with the target. AIS transmits a target's positional information far more frequently than it sends name, cargo and destination type info. Furthermore, when the name of the vessel is "Great Tiger of the Seven Seas", it becomes a display problem on the screen because the name is so long. AIS targets are abbreviated as specified in the **Tools | Options | Targets** menu.

How AIS Targets Appear In Admiral

There are several types of AIS targets and depending on what they are doing (or about to do) they may appear differently on your screen. It is important to recognize the different AIS symbols and their meaning. The table below outlines the various AIS targets and their meanings.



Tip: If symbols listed in the table below appear in red, they pose a danger to your vessel based on Closest Point of Approach (CPA) or Time to Closest Point of Approach (TCPA) as configured in Tools | Options | Targets.

AIS Symbols		
Symbol	Topic	Description
	AIS Active State	The vessel appears as a triangle and is oriented by heading or COG if heading is missing. If heading is available, heading line will be visible as a solid line. COG appears as a dashed line. The length of one dash plus one space is equal to one minute.
	Target Indicating Turn	Vessel appears as a triangle with a flag of fixed length indicating intended turning path.
	Active State - True Scale Outline	If zoomed in close enough, the triangle symbol may be replaced by true scale outline of the vessel located relative to own ship's reference position, oriented along own ship's heading. The cross hair on the true scale outline of a vessel indicates the AIS antenna position.
	Active State - Target Indicating Turn	Vessel appears as a triangle with a curved dashed line indicating intended turning path. The length of one dash plus one space is equal to one minute.
	Active State - Incomplete Data	The vessel appears as a broken triangle and is oriented by heading or COG if heading is missing. If heading is available, heading line will be visible as a solid line.
	Active State - Past Track	Past track or path is indicated by a series of dots.
	Lost State	Triangle with bold solid cross indicates that no information for the target has been received and information is not available. Triangle oriented per last known value. Cross has fixed orientation.

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What Is AIS?

What Is The Automatic Identification System (AIS)?

Picture a shipboard radar display, with overlaid electronic chart data, that includes a mark for every significant ship within radio range, each as desired with a velocity vector (indicating speed and heading). Each ship "mark" could reflect the actual size of the ship, with position to GPS or differential GPS accuracy. By "clicking" on a ship mark, you could learn the ship name, course and speed, classification, call sign, registration number, and other information. Maneuvering information, closest point of approach (CPA), time to closest point of approach (TCPA) and other navigation information, more accurate and more timely than information available from an automatic radar plotting aid, could also be available. Display information previously available only to modern Vessel Traffic Service operations centers could now be available to every AIS-equipped ship.

With this information, you could call any ship over VHF radiotelephone by name, rather than by "ship off my port bow" or some other imprecise means; or you could dial it up directly using GMDSS equipment; or you could send to the ship, or receive from it, short safety-related email messages.

The AIS is a shipboard broadcast system that acts like a transponder, operating in the VHF maritime band, that is capable of handling well over 4,500 reports per minute and updates as often as every two seconds. It uses Self-Organizing Time Division Multiple Access (SOTDMA) technology to meet this high broadcast rate and ensure reliable ship-to-ship operation.



Warning: The SLR-200 is a "listen-only" device and does not transmit AIS data.

How Does it Work?

Each AIS system consists of one VHF transmitter, two VHF TDMA receivers, one VHF DSC receiver, and a standard marine electronic communications link (IEC 61162/NMEA 0183) to shipboard display and sensor systems. Position and timing information is normally derived from an integral or external global navigation satellite system (e.g. GPS) receiver, including a medium frequency differential GNSS receiver for precise position in coastal and inland waters. Other information broadcast by the AIS, if available, is electronically obtained from shipboard equipment through standard marine data connections. Heading information and course and speed over ground would normally be provided by all AIS-equipped ships. Other information, such as rate of turn, angle of heel, pitch and roll, and destination and ETA could also be provided.

The AIS transponder normally works in an autonomous and continuous mode, regardless of whether it is operating in the open seas or coastal or inland areas. Transmissions use 9.6 kb GMSK FM modulation over 25 or 12.5 kHz channels using HDLC packet protocols. Although only one radio channel is necessary, each station transmits and receives over two radio channels to avoid interference problems, and to allow channels to be shifted without communications loss from other ships. The system provides for automatic contention resolution between itself and other stations, and communication integrity is maintained even in overload situations.

Each station determines its own transmission schedule (slot), based upon data link traffic history and knowledge of future actions by other stations. A position report from one AIS station fits into one of 2250 time slots established every 60 seconds. AIS stations continuously synchronize themselves to each other, to avoid overlap of slot transmissions. Slot selection by an AIS station is randomized within a defined interval, and tagged with a random timeout of between 0 and 8 frames. When a station changes its slot assignment, it pre-announces both the new location and the timeout for that location. In this way new stations, including those stations which suddenly come within radio range close to other vessels, will always be received by those vessels.

The required ship reporting capacity according to the IMO performance standard amounts to a minimum of 2000 time slots per minute, though the system provides 4500 time slots per minute. The SOTDMA broadcast mode allows the system to be overloaded by 400 to 500% through sharing of slots, and still provide nearly 100% throughput for ships closer than 8 to 10 NM to each other in a ship to ship mode. In the event of system overload, only targets further away will be subject to drop-out, in order to give preference to nearer targets that are a primary concern to ship operators. In practice, the capacity of the system is nearly unlimited, allowing for a great number of ships to be accommodated at the same time.

The system coverage range is similar to other VHF applications, essentially depending on the height of the antenna. Its propagation is slightly better than that of radar, due to the longer wavelength, so it's possible to "see" around bends and behind islands if the land masses are not too high. A typical value to be expected at sea is nominally 20 nautical miles. With the help of repeater stations, the coverage for both ship and VTS stations can be improved considerably.

The system is backwards compatible with digital selective calling systems, allowing shore-based GMDSS systems to inexpensively establish AIS operating channels and identify and track AIS-equipped vessels, and is intended to fully replace existing DSC-based transponder systems.

AIS Broadcasts That Nobeltec Software Recognizes

Nobeltec Admiral recognizes the AIS information types listed below. A Class A AIS unit broadcasts the following information every 2 to 10 seconds while underway, and every 3 minutes while at anchor at a power level of 12.5 watts. The information broadcast includes:

- Navigation status (as defined by the COLREGS - not only are "at anchor" and "under way using engine" currently defined, but "not under command" is also currently defined among others)
- Rate of turn - right or left, 0 to 720 degrees per minute (input from rate-of-turn indicator when present)
- Speed over ground - 1/10 knot resolution from 0 to 102 knots
- Longitude and Latitude - 1/10000 minute
- Course over ground - relative to true north to 1/10th degree
- True Heading - 0 to 359 degrees derived from gyro input
- Time stamp - The universal time to nearest second that this information was generated

In addition, the Class A AIS unit broadcasts the following information every 6 minutes:

- MMSI number - same unique identification used above, links the data above to described vessel
- IMO number - unique identification reference (related to ship's construction)
- Radio call sign - international call sign assigned to vessel, often used on voice radio
- Name - Name of ship, 20 characters are provided
- Type of ship/cargo - there is a table of possibilities that are available
- Dimensions of ship - to nearest meter
- Location on ship where reference point for position reports is located
- Draught of ship - 1/10 meter to 25.5 meters [note "air-draught" is not provided]
- Destination - 20 characters are provided (at Master's discretion)
- Estimated time of arrival at destination - month, day, hour, and minute in UTC (at Master's discretion)

Although there are two types of AIS classifications (A and B), Nobeltec's AIS receiver does not have a classification and does not transmit data, but is capable of receiving the data types listed above from Class A transmitters.

Types of Automatic Identifications Systems

ITU-R Recommendation M.1371-1 describes the following types of AIS:

Class A

Shipborne mobile equipment intended for vessels meeting the requirements of IMO AIS carriage requirement.

Class B

Shipborne mobile equipment provides facilities not necessarily in full accord with IMO AIS carriage requirements. IEC has begun work on a Class B certification standard, which should be completed by 2004 - 2005. The Class B is nearly identical to the Class A, except the Class B has a reporting rate less than a Class A (e.g. every 30 sec. when under 14 knots, as opposed to every 10 sec. for Class A). Other differences include the following:

- Does not transmit the vessel's IMO number or call sign
- Does not transmit ETA or destination
- Does not transmit navigational status
- Is only required to receive, not transmit, text safety messages
- Is only required to receive, not transmit, application identifiers (binary messages)
- Does not transmit rate of turn information
- Does not transmit maximum present static draught



Please Note: Class B devices are not yet available at the time of this printing.

Search and Rescue Aircraft

Aircraft mobile equipment, normally reporting every ten seconds.

Aids to Navigation

Shore-based station providing location of an aid to navigation. Normally reports every three minutes. This may eventually replace the racon.

AIS Base Station

Shore-based station provides text messages, time synchronization, meteorological or hydrological information, navigation information, or position of other vessels. Normally reports every ten seconds.

4

Technical Specifications

Technical Specifications

SLR-200 is a compact dual channel synthesized VHF receiver designed to receive and decode transmissions from vessels fitted with Class A AIS transceivers.

Electrical

Power supply range: 9 - 30 Volts DC
Power consumption: 400mW

Output

Baud rate: 38400 Baud (38.4Kb) or 4800 (internal link)
Format: ITU/ NMEA 0183
Output message: VDM

Receiver

Frequency: AIS 161.975 MHz to AIS 162.025 MHz
Channel spacing: 25KHz
Sensitivity: -112dBm
Demodulation: GMSK
Data Rate: 9600
Antenna Impedance: 50 ohms

Physical

Dimensions: Length: 140mm, Width: 120mm, Height: 50mm and Weight: 600g
Mounting: Trunnion bracket
Connectors: Antenna BNC
Output port: 9 pin D socket
Power: 2-pole plug

Transmission Specification:

Static information: Every 6 min, when data has been amended, or on request.
Dynamic information: This is dependent on speed and course alteration (see Table #1)

Table #1 - Class A Shipborne Mobile Equipment Reporting Intervals

Ship's Dynamic Conditions	Reporting Interval
Ship at anchor or moored and not moving faster than 3 knots	3 Minutes
Ship at anchor or moored and moving faster than 3 knots	10 Seconds
Ship 0 - 14 knots	10 Seconds
Ship 0 - 14 knots and changing course	3 1/3 Seconds
Ship 14 - 23 knots	6 Seconds
Ship 14 - 23 knots and changing course	2 Seconds
Ship > 23 knots	2 Seconds
Ship > 23 knots and changing course	2 Seconds



Warning: AIS is a recently introduced system that has been designed to improve safety at sea and anti-collision avoidance. The mandatory requirement for vessels to have Class A AIS transponders installed on-board at the time of print depends on the size of the vessel, where it trades and where it is based, however, this could still be subject to change. Currently, international legislation requires all such ships over 300 tons engaged in international voyages to fit AIS Class A transponders no later than 31 December 2004. The deadline for ships not engaged in international voyages remains at 1 July 2008, but national authorities can move this date forward in their own waters. In the USA different regulations apply, more details can be found at www.uais.org/CarriageRequirements.htm.

5

Troubleshooting

Frequently Asked Questions

- Q: My SLR-200 AIS receiver is plugged into my PC, but I am not picking up any targets. What could be wrong?
- A: Make sure that all your cables are connected properly and that power is coming into the receiver. If you have power, the lights on the front of the receiver should be turned on. In addition, you should also make sure that you have correctly configured your software to operate with the AIS receiver. If all cables are connected properly, you may want to verify that your 9-pin NMEA cable is transmitting data by connecting it to another device that you know accepts NMEA 0183 data, such as a GPS.
- Q: I was tracking a target on my screen and it suddenly disappeared. What happened to it?
- A: Target data is broadcast, typically, at expected intervals. When Nobeltec Admiral hasn't received an updated message from an AIS target for a period of time, the target will move into an "unknown" state before leaving the screen altogether. However, if you experience lost targets on a consistent basis, please contact Nobeltec's Technical Support Department for further information.
- Q: I'm not seeing any AIS targets on-screen. What's wrong?
- A: If you have properly configured and installed both the hardware as well as Nobeltec software (sold separately), it may be that there are no AIS-carrying vessels within range.

