STANDARD HORIZON

Nothing takes to water like Standard Horizon

CP390i - GPS Chart Plotters

NC$^{(*)}$Models

Addendum to Owner's Manual Issue 16.50 C 300311

to update to Software Version 16.70

BUILT-IN CHARTS ARE NOT INSTALLED

The following paragraphs/pictures are not applicable:

- page 13: in the paragraph 1.0 the first bullet point *"Built-In Charts for coastal navigation of USA including Alaska, Hawaii and Great Lakes, Canada, Bahamas, Caribbean, Cuba, Puerto Rico, and Central America"*.
  Please note that the following bullet point *"Built-In Charts for coastal navigation of USA including Alaska, Hawaii and Great Lakes, Canada, Bahamas, Caribbean, Cuba, Puerto Rico, and Central America"* has been replaced by *"2NM C-MAP World Wide background chart included"*.

- page 33: in the paragraph 3.1.0 the figure 3.1.0b.

- page 43: in the paragraph 3.9 the Built-In Charts row in the About page (Figure 3.9) is not present.

- page 55-56: the paragraph 5.0 *"Built-In Charts"* with the sub-paragraph 5.0.0 *"Coverage areas and details"* and the sub-paragraph 5.0.1 *"Updating Built-In Charts"*.

- page 92: in the paragraph 12.0 the sentence *"The GPS Chart Plotter come with Built-In Charts for coastal navigation of USA including Alaska, Hawaii and Great Lakes, Canada, Bahamas, Caribbean, Cuba, Puerto Rico, and Central America. For detail refer to Par. 5.0. For more detail, optional C-MAP BY JEPPESEN NT+/MAX C-CARDs or to update the Built-In Charts, refer to Par. 5.1."*

(*) **N**o **C**harts.

CODE: SH_NCmodels_390_211113e

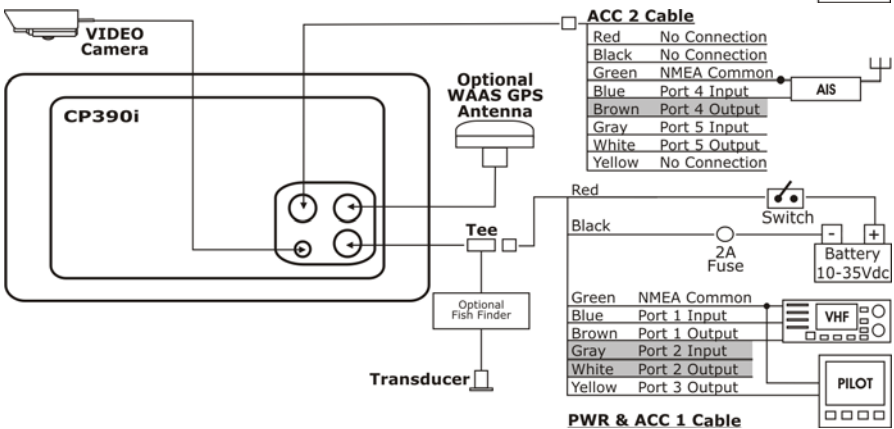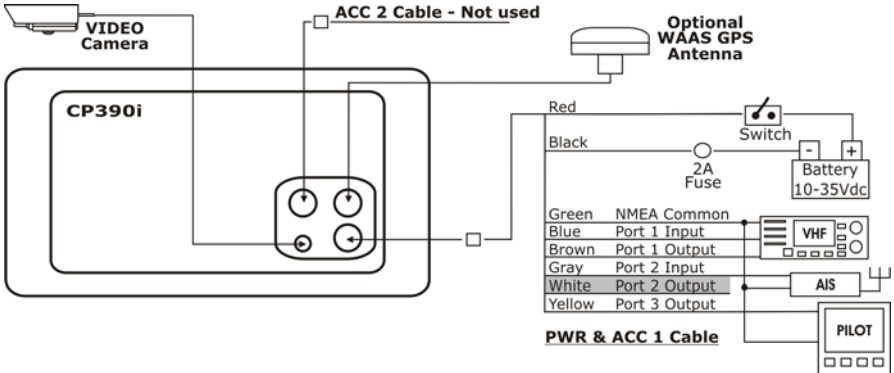*The pictures in the following paragraphs are changed because the position of the two connectors ACC2 and GPS antenna was wrong:*

2.4.1   CP390i Connections

2.4.1.0 DC Power Connection
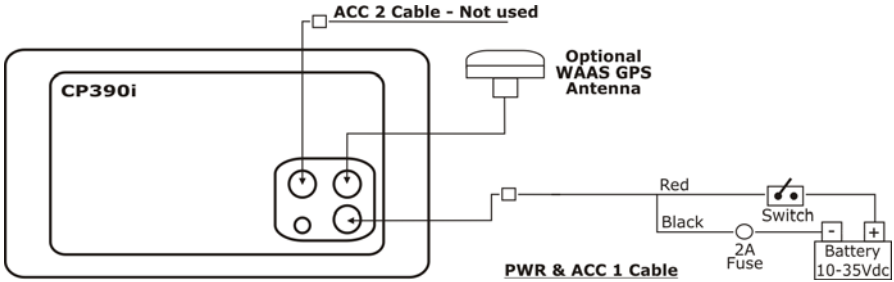
2.4.1.1 Connection a Video Camera, FF525, AIS Receiver, VHF and Autopilot

STANDARD HORIZON

Also please see the following paragraphs/chapters which are changed/added:

7.4.3   Stop Navigation to Destination

When the last navigation point is reached (last point of navigated route or single navigation point), navigation stops. You can decide whether the navigation is automatically stopped or if the user confirmation is required (see Par. 13.1).
If confirmation is required, when the Destination is reached a WARNING window is shown. Move the ShuttlePoint knob to highlight **YES** and press **[ENT]** to stop the navigation:
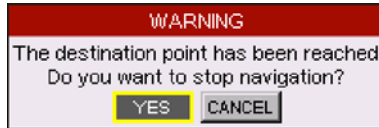

Figure 7.4.3 - Warning window

13.1   NAVIGATE

The Navigate Menu allows customization of the Coordinate System (Loran TD's), Chart Datum, Chart Orientation Resolution (angle the vessel has to change before the chart is redrawn) and Static Navigation. See the following table

Coordinate System	:	Selections are: a. TD: Time Difference, based on Loran (see the following Par. 13.1.0) b. UTM: Universal Transverse Mercator Grid c. ddd mm.mmm: Degrees Minutes and Thousands of Minutes d. ddd mm.mm: Degrees Minutes and Hundredths of Minutes e. ddd mm.ss: Degrees Minutes and Seconds (default)
Chart Datum	:	Allows selection of Chart Datums. The default Datum is WGS84 as C-MAP BY JEPPESEN cartography has been compiled using the WGS84 Datum. A datum is a mathematical model of the Earth which approximates the shape of the Earth, and enables calculations such as position and area to be carried out in a consistent and accurate manner.
Chart Orientation Resolution	:	Sets the angle the vessel has to change before the chart is redrawn. The default setting is 30 degrees. Example: if the vessel is heading 000T at a speed of 25 Kts, the display will redraw: a. In Home Mode the GPS Chart Plotter centers the location of the vessel in the center of the display. To keep the vessel in the center of the display the GPS Chart Plotter will occasionally redraw. b. If the vessel changes course greater than 330T or more than 30T the chart will be redrawn.
Static Navigation	:	Sets up a threshold for the speed. When the speed received from the positioning device is under that threshold, the GPS Chart Plotter displays zero.
Stop Navigation on Arrival	:	When the Destination is reached, the navigation is automatically stopped. You can decide whether the navigation is automatically stopped or if the user confirmation is required (Auto Confirmation is the default setting): a. **Auto Confirmation**: the Destination is removed on arrival without informing the user. b. **Manual Confirmation**: on arrival a window pop-ups to require the user confirmation to remove the Destination.

14. AIS

AIS is an Automatic Identification System. It has been introduced to improve the safety of navigation by assisting in the efficient operation of ship-to-ship location reporting and VTS applications. The system should enable operators to obtain information from the ship automatically, requiring a minimum of involvement of ship's personnel, and should have a high level of availability. AIS transponders installed on IMO vessels use VHF frequencies to:

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

STANDARD HORIZON GPS Chart Plotters are able to display AIS Target (for collision avoidance) on the Chart page and AIS List pages when connected to a AIS Receiver (GX2100 or GX2150 STANDARD HORIZON VHF/AIS transceiver) or transponders which output NMEA-0183 VDM sentence at 38400 or 4800 baud. The Chart Plotters are able to show targets from both Class A (commercial) and Class B targets.

14.0   SYSTEM DEFINITIONS

- **Target:** vessel equipped with AIS. Information about the Targets is being received by AIS Receiver and displayed on the screen.
- **CPA** *(Closest Point of Approach)***:** 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.
- **CPA Limit:** distance from your vessel that a Target may reach before a Target is deemed a threat.
- **CPA Alarm:** occurs if CPA is less or equal to CPA Limit. This test is done for active Targets only.
- **TCPA** *(Time to Closest Point of Approach)***:** time remaining until the CPA will occur.
- **TCPA Limit:** time remaining before the CPA is reached.
- **TCPA Alarm:** occurs if TCPA is less or equal to TCPA Limit. This test is done for active Targets only and if CPA value is less or equal to CPA Limit.
- **Radio Call Sign:** international call sign assigned to vessel, often used on voice radio.
- **Name:** name of ship, 20 characters.
- **MMSI** *(Maritime Mobile Service Identity)* **number:** a unique 9 digit number that is assigned to a DSC radio station. It primarily registers the boat information in the U.S. Coast Guard's national distress database for use in emergency situations.
- **Active Target:** Target located within the Activation Range. Active Targets are represented by oriented triangle with COG and Heading vectors. Rate of turn may also be displayed.
- **Dangerous Target:** Target detected by CPA or TCPA Alarm. Dangerous Targets are Active Targets by definition. For better visibility Dangerous Target symbol is flashing.
- **Sleeping Target:** Target located outside the Activation Range. Sleeping Targets are represented by a small oriented triangle.
- **Lost Target:** when the AIS info is not received from that vessel for 3.5 minutes. The presentation will be a flashing black triangle with a cross through.
- **Activation Range:** range around your boat where Targets become active. AIS Targets become active within this range. Activation Range should be greater than CPA Limit by definition.

A Target is removed from the screen if data is not received for 10 minutes.
The maximum number of tracked Class A or B targets is 200.
This information is updated every 3 seconds to 6 minutes depending on speed and rate of turn, enabling the track of the vessels in range to be plotted.

TARGET STATUS	DESCRIPTION	SYMBOL
ACTIVE TARGET	Target located within the Activation Range.	⋀
DANGEROUS TARGET	Target detected by CPA or TCPA Alarm. Dangerous Target is Active Target by definition.	Flashing
SLEEPING TARGET	Target located outside the Activation Range.	△
LOST TARGET	Ais info is not received from that vessel for 3.5 minutes.	⍍

Figure 14.0 - AIS Symbols

14.1   AIS SETUP MENU

To configure the GPS Chart Plotter to receive AIS data, follow the procedure:
1. Press **[MENU]**, move the ShuttlePoint knob to highlight **SETUP MENU** and press **[ENT]**.
2. Move the ShuttlePoint knob to highlight **AIS SETUP** and press **[ENT]** or move the ShuttlePoint knob to the right. The AIS menu appears on the screen. The available functions are described in the following table.

Display	: Turns the display of AIS Targets overlay on the cartography On or Off. The default setting is On.
Activation Range	: Defines the range from the fix within which the AIS Target becomes active. The values allowed are from 0.1 to 20Nm. The default setting is 5Nm.
CPA Alarm	: Turns On or Off the alarm. The default setting is On.
CPA Limit	: The values allowed are from 0.1 to 10 Nm. The default setting is 0.5Nm.
TCPA Alarm	: Turns On or Off the alarm. The default setting is On.
TCPA Limit	: The values allowed are from 1 to 30 Min. The default setting is 10 Min.
SART/MOB/EPIRB Test	: Turns On or Off receiving of AIS-SART, AIS-MOB or AIS-EPIRB test alerts.

14.2   QUICK INFO ON AIS TARGET

By placing the cursor over a AIS Target icon using the ShuttlePoint knob, the following information is displayed. Press **[EXPAND]** to select the Enhanced AIS Page with information related to the selected AIS object (see the following Par. 14.6).

① Vessel name
② MMSI number
③ Speed over Ground
④ Closest Point of Approach
⑤ Radio Call Sign
⑥ Course Over Ground
⑦ Time to Closest Point of Approach

Figure 14.2 - Quick Info on AIS

The selected AIS Target icon is surrounded by a square frame when user places the cursor over the icon.

14.3   AIS TARGET COLORS

The received AIS Targets are shown in color. The color depicts the type of AIS ship shown on the Chart page. Refer to following table.

TYPE OF SHIP	GRAPHICAL PRESENTATION
Undefined	△ (yellow)
Fishing	△ (white)
Pleasure Craft	▲ (light green)
Tanker	▲ (dark blue)
Pilot Vessel	△ (light gray)
SAR	▲ (black)
Tug	△ (pale green)
Port tenders	▲ (brown)
Vessels with antipollution facilities or equipment	△ (light blu)
Low enforcement vessels	▲ (light red)
Medical transport	▲ (dark green)
Vessels according to Resolution N° 18 (Mob-83)	▲ (cyan)
HSC	▲ (red)
Passenger ship	▲ (magenta)
Cargo ship	▲ (dark gray)

Figure 14.3 - AIS Targets Colors

14.4   AIS-SART

AIS-SART, AIS-MOB and AIS-EPIRB signals are all emergency signals sent out by different types of survivor locating devices.

When an AIS-SART, AIS-MOB or AIS-EPIRB signal is received, the GPS Chart Plotter will display and sound an alarm. The AIS-SART icons will be displayed on the chart depending on the current status of the emergency signal (see the following table).

ICON	⊗	⊗	⊗	⊗
SIGNAL	SART AIS-MOB EPIRB Active	SART AIS-MOB EPIRB Test	SART AIS-MOB EPIRB Active lost	SART AIS-MOB EPIRB Test lost

Figure 14.4 - AIS-SART

14.4.0 AIS-SART Test Mode

The GPS Chart Plotter by default ignores test AIS-SART, AIS-MOB and AIS-EPIRB signals

in order to avoid a large number of alerts. However the GPS Chart Plotter can be enabled to receive test alerts (see Par. 14.1 *"AIS Setup Menu"*) if you want to test them.

14.5   AIS LIST

The AIS List page shows basic information of the Target ship with the ability to select a Target ship and locate it on the chart.

AIS Targets are sorted by distance from current GPS position: the closest Targets are displayed at the top of the list. AIS-SART, AIS-MOB and AIS-EPIRB objects are also listed on this page and are also sorted by distance.

To select this page follow the procedure:
1. Press **[MENU]**, move the ShuttlePoint knob to highlight **USER POINTS** and press **[ENT]**.
2. Move the ShuttlePoint knob to highlight **AIS LIST** and press **[ENT]**.

AIS LIST							
NAME	CALL SIGN	MMSI	IMO NUMBER	SOG Kts	COG T	CPA Nm	TCPA
SIMUL0	SIMUL0	100000000	100000003	1.0	55°	1.04	06:30
SIMUL6	SIMUL6	100000006	100000009	3.0	288°	1.07	01:01
SIMUL5	SIMUL5	100000005	100000008	4.5	3°	1.61	--:--:--
SIMUL9	SIMUL9	100000009	100000012	3.1	200°	3.25	--:--:--
SIMUL8	SIMUL8	100000008	100000011	1.0	186°	3.87	--:--:--
SIMUL1	SIMUL1	100000001	100000004	3.7	79°	--,--	--:--:--
SIMUL2	SIMUL2	100000002	100000005	4.6	255°	--,--	--:--:--
SIMUL3	SIMUL3	100000003	100000006	1.0	311°	--,--	--:--:--
SIMUL4	SIMUL4	100000004	100000007	1.2	256°	--,--	--:--:--

EXPAND   LOCATE

Figure 14.5 - AIS List page

3. Move the ShuttlePoint knob up or down to select the Target and scroll the page up or down. Press **[CLR]** exits the page and shows the Target ship on the Chart page along with the current position of the GPS Chart Plotter.

This page allows to:

LOCATE	Locates the selected AIS object on the Chart page
EXPAND	Opens the Enhanced AIS page with information related to the selected AIS object (see the following Par. 14.6).

14.6   ENHANCED AIS PAGE

The Enhanced AIS page contains all data related to the selected AIS object. The page shows data received from AIS sentences Class A Position Report, Class A Static & Voyage Data, Class B Reports or calculated by the software.

The Enhanced AIS page can be selected in two ways:

① **From the Chart page**
1. Place the cursor over a AIS Target icon using the ShuttlePoint knob.
2. Press **[EXPAND]** to select the Enhanced AIS Page with information related to the selected AIS object.

② **From the AIS List page**
1. Press **[MENU]**, move the ShuttlePoint knob to highlight **USER POINTS** and press **[ENT]**.
2. Move the ShuttlePoint knob to highlight **AIS LIST** and press **[ENT]**.
3. Move the ShuttlePoint knob to highlight **EXPAND** and press **[ENT]**.

AIS INFO		
MMSI	NAME	POSITION
622121213	TAAWON 14	54°23.338N 019°23.612E
CALL SIGN	IMO No.	STATUS	LAST SEEN
SUSF	8316742	at anchor	08/16/13 01:10 AM
SOG	COG	HDG	ROT
10.5	90	89	3
CPA	TCPA	DEST	ETA
15.6	00:55:46	PORT SAID	09/10/13 10:23 AM
TYPE	LENGHT	DRAUGHT	BEAM
Tanker	220	5.6	33

Figure 14.6 - Enhanced AIS page

The data contained in the Extended AIS page are:
- MMSI   = MMSI number
- NAME   = Name of ship (20 characters)
- POSITION   = Latitude and Longitude
- CALL SIGN   = Call Sign
- IMO No.   = IMO number
- STATUS   = AIS Navigation Status
- LAST SEEN   = date and time of the last received updated for the selected object (MMSI number)
- SOG   = Speed Over Ground
- COG   = Course Over Ground
- HDG   = True Heading
- ROT   = Rate Of Turn
- CPA   = Closest Point of Approach
- TCPA   = Time to Closest Point of Approach
- DEST   = Destination name (20 characters)
- ETA   = Estimated Time of Arrival
- TYPE   = Type of ship and cargo type
- LENGTH   = Length of ship
- DRAUGHT   = Maximun present static draught
- BEAM   = Beam of ship

14.6.0 AIS Vessel Types

The types of vessel displayed in the Type box are shown in the following table.

TYPE DATA BOX	TYPE OF SHIP	
Undefined	Reserved for future use	(1-38-39)
WIG	WIG	(20)
WIG-Hazard A	Hazardous category A	(21)
WIG-Hazard B	Hazardous category B	(22)
WIG-Hazard C	Hazardous category C	(23)
WIG-Hazard D	Hazardous category D	(24)
WIG	Reserved for future use	(25-28)
WIG	No additional information	(29)
Fishing	Fishing	(30)
Towing	Towing	(31)
Towing Long	Towing/length of the tow exc. 200m or breadth exc. 25m	(32)
Dredger	Engaged in dredging or underwater operations	(33)
Dive Vessel	Engaged in diving operations	(34)
Military Ops	Engaged in military operations	(35)
Sailing	Sailing	(36)
Pleasure Craft	Pleasure craft	(37)
HSC	HSC	(40)
HSC-Hazard A	Hazardous category A	(41)
HSC-Hazard B	Hazardous category B	(42)
HSC-Hazard C	Hazardous category C	(43)
HSC-Hazard D	Hazardous category D	(44)
HSC	Reserved for future use	(45-48)
HSC	No additional information	(49)
Pilot Vessel	Pilot vessel	(50)
SAR	Search and Rescue vessel	(51)
Tug	Tugs	(52)
Port Tender	Port Tenders	(53)
Anti-pollution	Vessel with anti-pollution facilities or equipment	(54)
Law Enforce	Law enforcement vessel	(55)
Undefined	Spare - for assignment to local vessels	(56-57)
Medical	Medical trans. (as defined in the 1949 Geneva Conventions and Additional Protocols)	(58)
Mob-18	Ship according to RR Resolution No.18 (Mob-18)	(59)
Passenger	Passenger ship	(60)
Passenger-Hazard A	Hazardous category A	(61)
Passenger-Hazard B	Hazardous category B	(62)
Passenger-Hazard C	Hazardous category C	(63)
Passenger-Hazard D	Hazardous category D	(64)
Passenger	Reserved for future use	(65-68)
Passenger	No additional information	(69)
Cargo	Cargo ships	(70)
Cargo-Hazard A	Hazardous category A	(71)
Cargo-Hazard B	Hazardous category A	(72)
Cargo-Hazard C	Hazardous category A	(73)
Cargo-Hazard D	Hazardous category A	(74)
Cargo	Reserved for future use	(75-78)
Cargo	No additional information	(79)
Tanker	Tanker(s)	(80)
Tanker-Hazard A	Hazardous category A	(81)
Tanker-Hazard B	Hazardous category A	(82)
Tanker-Hazard C	Hazardous category A	(83)
Tanker-Hazard D	Hazardous category A	(84)
Tanker	Reserved for future use	(85-88)
Tanker	No additional information	(89)
Other	Other types of ship	(90)
Other-Hazard A	Hazardous category A	(91)
Other-Hazard B	Hazardous category A	(92)
Other-Hazard C	Hazardous category A	(93)
Other-Hazard D	Hazardous category A	(94)
Other	Reserved for future use	(95-98)
Undefined	No additional information	(99)

Figure 14.6.0 - AIS Vessel Types