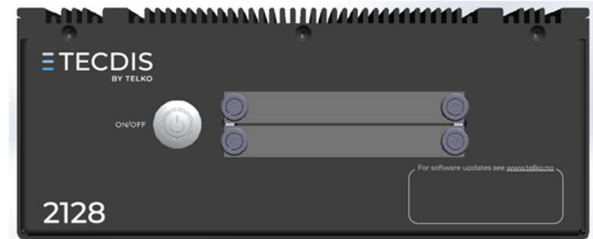


# SPECIFICATIONS: TECDIS 2128

TECDIS 2128 is a standalone ECDIS computer.

It is type-approved according to IMO regulations, allowing paperless navigation<sup>1</sup>. The compact, feature rich design makes it a versatile solution for any kind of vessel.



## STANDARDS COMPLIANCE

TECDIS 2128 conforms to the following standards:

Marine Equipment Directive 2014/90/EU of the EC council.

<b>Regulation (EU) 2018/773:</b>	Item No. MED/4.30
<b>SOLAS 74 as amended</b>	Regulations V/18, V/19 & X/3
<b>IMO Resolutions</b>	A.694(17) MSC.36(63) MSC.97(73) MSC.191(79) MSC.232(82) MSC.302(87)
<b>IMO Circulars</b>	MSC.1/Circ 1503
<b>IEC Standards</b>	Performance testing – IEC 61174 (2015) Performance testing, presentation – IEC 62288 (2014) Environmental testing – IEC 60945 (2002) Serial interface testing – IEC 61162 (2010)

<b>Usable Charts</b>	S-57 ed.3 S-63 (including Primar and AVCS) CM-93/3 (C-Map ENC / ENC+ / CAES / Professional+ <sup>2</sup> )
<b>Display</b>	Separate purchase (from compatible monitors listed on next page)
<b>Operating system</b>	Windows 7 32-bit, English
<b>Processor</b>	Intel Celeron 3955U – 2.0 GHz (2 cores)
<b>Chipset</b>	Intel HD 510
<b>Memory (RAM)</b>	4 GB
<b>Storage</b>	150 GB SSD (approximately 100 GB free) in removable disk tray
<b>Other</b>	Fanless 3U height Two units can fit side by side in a 19" rack

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<sup>1</sup> Paperless navigation requires a dual ECDIS installation.

<sup>2</sup> C-Map Professional+ is not an official chart service, it does however provide world scale charts

## GENERAL SPECIFICATIONS

### Compatible monitors

#### Current

Unit name	Unit size	Other
HD 19T22 TID	19"	Telko logo
HD 24T22 TID	24" Wide	Telko logo
HD 26T22 TID	26" Wide	Telko logo
HD 27T22 TID	27" Wide	Telko logo
HD 19T22 FUD	19"	Furuno logo
HD 24T22 FUD	24" Wide	Furuno logo
HD 26T22 FUD	26" Wide	Furuno logo

#### Obsolete/discontinued

Unit name	Unit size
JH 19T14MMD	19"
JH 20T17MMD	20"
JH 23T12MMD	23"
JH 23T14MMD	23"
JH 19T03 BOAA	19"
HD 19T21 MMD	19"
HD 24T21 MMD	24" Wide
HD 26T21 MMD	26" Wide

### Display of data

<b>Own Ship:</b>	GPS Position, COG, HDG, SOG, STW
<b>Route:</b>	Active route name, DTG, ETA, and CTS-, DTG-, TTG to selected WP
<b>ARPA targets:</b>	BRG, DIST, COG, SOG, POS User selectable: ARPA Target color, ARPA target track color, «Save» ARPA target track.
<b>Others:</b>	EBL, VRM, EBL list, Parallel index lines, Cursor position, True or relative cursor bearing
<b>Maritime Calculation</b>	Can calculate Range/Bearing to or from a position, with Rhumb-line or Great Circle routes, distances selectable in meters or NM. TTG, ETA, datum conversion
<b>Route monitoring</b>	Off track, Waypoint, Arrival, Grounding, Depth
<b>1-click chart loading</b>	Available for charts from the following providers: Navtor, ChartCo, Nautisk Forlag
<b>Alarms</b>	Off track, Index Lane, Channel limit, Waypoint approach, Depth, Non ENC dangers, Restricted Areas, Cautions Areas, Possible danger, Harbour Mode
<b>Autopilot output</b>	Output of: APB, RMB, RMC, RTE
<b>AIO overlay</b>	Show Temporary and Preliminary Notices as an overlay on the chart, with the Admiralty Information Overlay (AIO) service by UKHO.
<b>Other Functions</b>	<ul style="list-style-type: none"> <li>Night/Day presentation</li> <li>MOB</li> <li>SAR</li> <li>Log w/replay functionality</li> <li>docking Conning display</li> <li>Tooltip</li> <li>User defined chart presentation, easy transfer of installed configuration to replacement cold standby unit</li> <li>Easy screen dump facility when in navigation mode.</li> </ul>

## Optional features

The following options are available for purchase with a perpetual license (onetime fee):

<b>Track Control</b>	Type approval for installation with Raytheon Anschütz NP 5500 autopilot
<b>Radar Overlay</b>	Display of radar echoes from Furuno radars: 2xx7, 2xx8, 15xx
<b>Seismic streamers</b>	Streamer configuration with up to 24 streamers displayed graphically in chart.
<b>Navtex</b>	Connects to all Navtex receivers sending in the NRX format. You can display Navtex messages with position references.
<b>Weather overlay</b>	Advanced weather overlay feature using top quality commercial maritime weather forecast data available as a subscription service from C-Map.
<b>Piracy overlay</b>	Piracy Information is available as an overlay on top of C-MAP charts in OceanView. The C-Map OceanView navigation planning tool visualizes information to help navigators and operators identify, understand and manage risks posed by maritime crime.

## TELCARE

TELCARE gives power to the TECDIS users.

TELCARE is a subscription service for new features in TECDIS. The following features are only available with a valid TELCARE subscription:

<b>TotalTide</b>	Show Tides from Admiralty TotalTide in the chart. Requires a TotalTide subscription from UKHO.
<b>Rendezvous</b>	<p>With Rendezvous TECDIS will predict where on your route you will meet that target. This function works for targets within 1 NM of your route, and predicts where the target will meet your vessel (assuming the target will move along the same path your route shows)..</p> <p>Rendezvous supports up to 8 targets simultaneously, and the prediction is updated every second.</p>
<b>Transit conning</b>	The most important sensor and voyage information is displayed with bigger text, in a clear and very readable conning window. The conning window can be moved around on the screen.
<b>Edit route lane</b>	Edit the route corridor and turn radius visually in the chart with the cursor.
<b>1-click chart loading</b>	Available for Global Navigation Solutions – GNS

## HW Connections

<b>No. of serial ports</b>	2x isolated RS 232 (one dedicated for monitor communication) 8x isolated NMEA RS422 (with phoenix 5-pin connectors)
<b>Monitor</b>	1x DVI-D (digital only) 1x DVI-I (analog + digital) 1x DP (Displayport)
<b>Ethernet</b>	4x 10/100/1000 Mbps (RJ-45)
<b>USB ports</b>	4x USB 2.0 ports 4x USB 3.0 ports
<b>Other</b>	1x SD card slot

## Port description

Sensor	Sentences	IP	IEC 61162-1 Ed 4.0	Proprietary
<b>Position 1:</b>	GNS, GGA, GLL, RMC		✓	
<b>Position 2:</b>	GNS, GGA, GLL, RMC, VDO	✓	✓	
<b>COG/SOG1:</b>	VTG, RMC, OSD, VDO		✓	
<b>COG/SOG1:</b>	VTG, RMC, OSD, VDO	✓	✓	
<b>Heading 1:</b>	HDT, OSD, VHW, VDO, THS		✓	
<b>Heading 2:</b>	HDT, OSD, VHW, VDO, THS	✓	✓	
<b>Water speed:</b>	VHW, OSD, VBW	✓	✓	
<b>Radar ARPA 1:</b>	TTM	✓	✓	
<b>Radar ARPA 2:</b>	TTM	✓	✓	
<b>Radar cursor 1:</b>	RSD	✓	✓	
<b>Radar cursor 2:</b>	RSD	✓	✓	
<b>AIS (In- and output):</b>	Aixxx	✓	✓	
<b>Depth:</b>	DPT, DBT	✓	✓	
<b>Rel. wind:</b>	MWV	✓	✓	
<b>Route:</b>	WPL + RTE	✓	✓	
<b>Alarm ctrl. (In- and output)</b>	ALR + ACK		✓	✓
<b>Navtex</b>	NRX	✓	✓	
<b>Search</b>	FLIR		✓	
<b>Option 1</b>		✓	✓	✓
<b>Option 2</b>		✓	✓	✓
<b>Option 3</b>		✓	✓	✓
<b>Option 4</b>		✓	✓	✓
<b>Printer:</b>	USB port printer connection only			

## Power Supply

<b>Voltage</b>	100 to 240 VAC, 50/60 Hz + 24 VDC (multipower, with uninterrupted switchover if power loss occurs)
<b>Power cons. Max</b>	50W
<b>Power cons. Typ.</b>	39W

## EQUIPMENT LIST

### Standard

1. Computer, HT B30GI TEC
2. TECDIS code plug (attached to the computer's rear panel)
3. Accessories Box
  - a. CD-bag
    - i. Driver CD from Hatteland
    - ii. Chart database DVD C-Map Professional+
    - iii. Chart database DVD C-Map CAES
    - iv. TECDIS Service Key (USB memory stick)
  - b. AC power cables 220 VAC/50Hz euro type F and 115 VAC/60Hz US type B power cable
4. Cherry G84-4100LCMGB-2, keyboard
5. Logitech TrackMan Marble ELK, trackball
6. Declaration of Conformity

### Hardware options

1. Telko Alarm Interface TEA-01<sup>3</sup>
2. Alarm Speaker (Bracket mount) DNH HP-6 (required when display or control unit does not contain a buzzer)
3. Alarm Speaker (Flush mount) DNH HPS-6 (required when display or control unit does not contain a buzzer)
4. Conning Adapter analog interface CA-xxxx (configurable number of analog and digital inputs)

### Software options

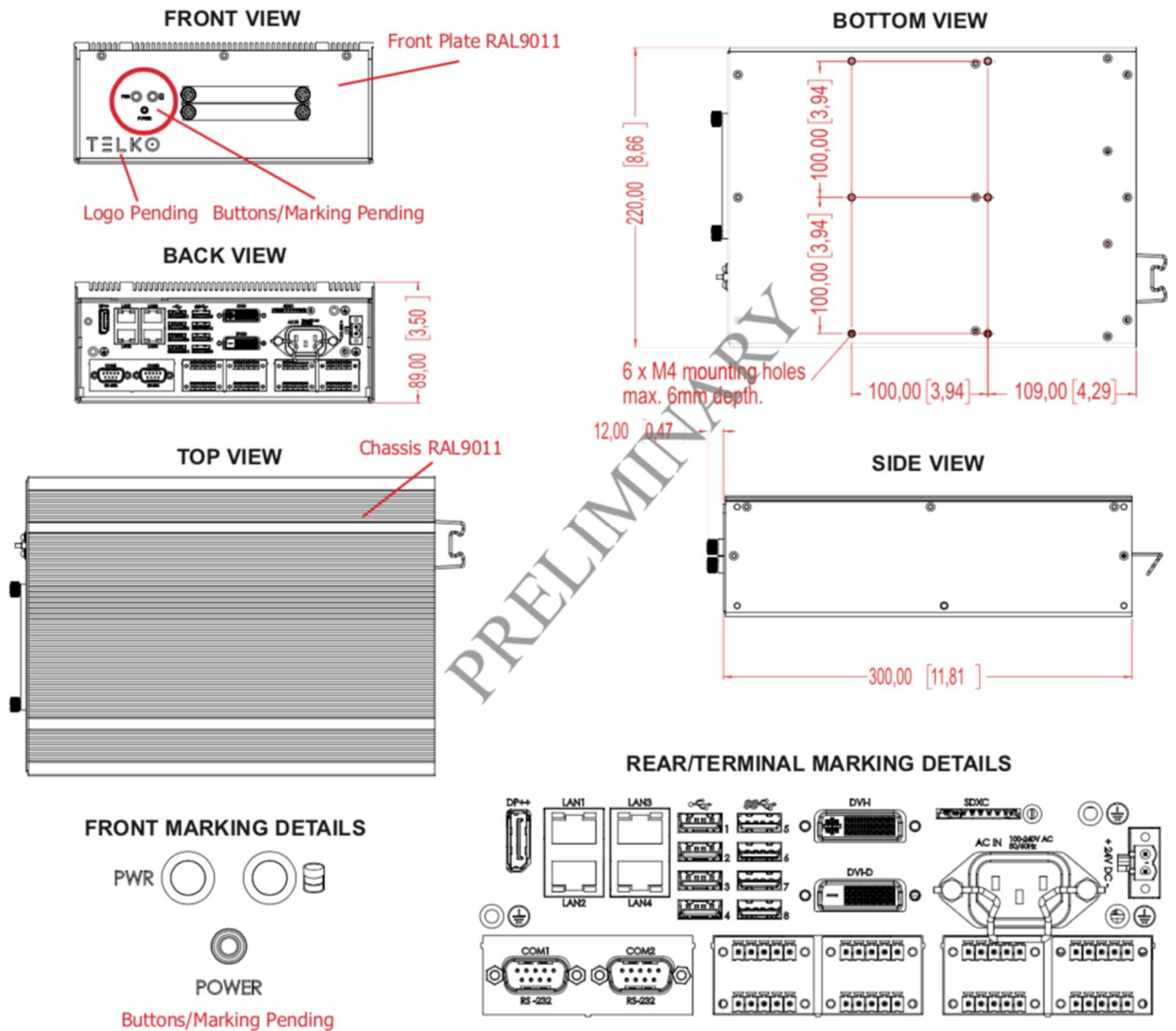
1. Conning software	Custom software for each vessel. Requires design and programming.
2. Track Control System	
3. Seismic streamers	
4. Navtex	TECDIS SW option
5. Weather overlay	programmed in
6. Piracy overlay	code plug
7. Radar Overlay	

## DOCUMENT REVISION HISTORY

1.0	31 <sup>st</sup> January 2019	First release	Cato Haugland
2.0	25 <sup>th</sup> April 2019	Second release. Added section on TELCARE. Updated section for optional features.	Cato Haugland

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<sup>3</sup> Requires an RS-232 port.



Dimensions might be shown with or without decimals and indicated as mm [inches]. Tolerance on drawings is +/- 1mm. For accurate measurements, check relevant DWG file.