

Software version 1.27.8, November 2001

I:\Programmer\EML224\Software\Combo cabinet\Software1.27.8

Release notes.

1. Bug fix. Certain negative speed values were indicated incorrectly:
“-3.5” instead of “-22.3”, “-7.6” instead of “-22.6”. Speed conversion function fixed.
2. Bug fix. If drift angle was bigger than 90 degrees indicated value was 90 degrees less than correct value. Angle conversion function fixed.

Software version 1.27.12 beta, June 2007

I:\Programmer\EML224\Software\Combo cabinet\Software1.27.12

Release notes.

1. NMEA MTW message implemented
2. Remote alarm reset function. INHIBREF/INHIB2 input must be connected to the external switch Various COM (NMEA) screen design flaws fix:
 - 3.1 Sensor communication error is separated from NMEA error message (before error was indicated, if there was an error on any of the inputs)
 - 3.2 NMEA input monitoring text in diagnostics window is separated from sensor communication (before both input messages were indicated in the same window)
 - 3.3 NMEA or sensor communication COM ports are selectable from the panel
 - 3.4 Softkeys are re-arranged to accommodate mentioned above featuresNOTE : Operation manual needs to be updated.

Software version 1.27.12 pre-release, June 2007

1. Removed irrelevant NMEA messages.
2. Added checksums to all NMEA messages

Software version 1.27.13 release, July 2007

**\\Skipperdc\felles\Programmer\EML224\Software\Combo cabinet\Objects\
eml224_1_27_13.bin.BIN**

EEPROM version

1. Backlight control function has been changed to meet requirements on the minimal brilliance and LEDs light. Added software reduction of the colours intensity for lower backlight settings.
2. Backlight can be adjusted by single button push, toggling between 4 predefined backlight settings.
3. Minor cosmetic changes of colours – to provide better readability at lower backlight settings
4. The version is fully backward compatible with v 1.27.12, CPU type PCA 6135 must be used. The version is fully compatible with standard up-to-date EML224 Combo Cabinet hardware.

Note : to provide best possible function of the backlight and LEDs control, newer IO logic (IC300) version must be used, with corrected control of the potentiometers. Best to my knowledge, this version has been made by Øivind, but never formally released.

Software version 1.27.14 release, July 2007

**\\Skipperdc\felles\Programmer\EML224\Software\Combo cabinet\Dos
version\version 1_27_14**

EML224 v1_27_14 release

1. Backlight control function has been changed to meet requirements on the minimal brilliance and LEDs light. Added software reduction of the colours intensity for lower backlight settings.
2. Backlight can be adjusted by single button push, toggling between 4 predefined backlight settings.
3. Minor cosmetic changes of colours – to provide better readability at lower backlight settings
4. The version is compatible with both PCA 6753F and PCA6740. The version is fully compatible with up-to-date DL850 and GDS102 hardware.
5. The standard installation/upgrade mechanism has been implemented, which allows software upgrade from the Compact Flash Card adapter (if installed).

Note: to provide best possible function of the backlight and LEDs control, newer IO logic (IC300) version must be used (E12).

Software version 1.27.16 pre-release, October 2008

**\\Skipperdc\felles\Programmer\EML224\Software\Combo cabinet\Dos
version\version 1_27_16**

EML224 v1_27_16 prerelease

1. Colour intensity adjustment functions have been added to backlight control to meet IEC requirement with respect to minimal white luminance of 1 lux.
2. Color schemes (day and night) have been slightly adjusted to provide better readability at lower brightness settings.

Software version 1.27.17 pre-release, October 2008

**\\Skipperdc\felles\Programmer\EML224\Software\Combo cabinet\Dos
version\version 1_27_17**

EML224 v1_27_17 prerelease

1. Latest VLW format is implemented according to 61162-1 IEC:2007(E). This format is added to earlier VLW format 61162-1 IEC:2000(E) and selectable from the list at screen COM. This is to avoid possible communication conflicts with existing older listeners.

NOTE: this feature requires change of the Operator Manual

2. New heading message (THS) is implemented according to 61162-1 IEC:2007(E). Note, that apart from Data Not Valid, all other modes (Autonomous, Estimated, Manual and Simulated) are considered valid and accepted.

NOTE: this feature requires change of the Operator Manual

Software version 1.27.18 release candidate, December 2008
\\Skipperdc\felles\Programmer\EML224\Software\Combo cabinet\Dos
version\version 1_27_18

EML224 v1_27_18 release candidate

1. Added support of optional COM3 and COM4 embedded into PCA 6742, which are used for NMEA communication lines.
 - COM3 BIOS setup settings : IRQ = IRQ9, BASE ADDRESS = 2E8H
 - COM4 BIOS setup settings : IRQ = IRQ5, BASE ADDRESS = 3E8H

Note, that as it was earlier, BIOS COM2 (IRQ = IRQ3, BASE ADDRESS = 2F8H) is dedicated to the sensor communication link with fixed UART baud rate and data settings. These settings can be changed after the setup mode is activated (by the hidden button). Change of the sensor link UART settings maybe required ONLY if the ALMA type sensor is connected to the display. ALMA type sensor requires 7 bit, Odd parity, 1 stop.

IMPORTANT NOTE FOR PRODUCTION:

Make sure, that AMI BIOS version 1.12 is pre-installed by Advantech.
If COM3 is disabled in the BIOS SETUP, COM lines are being supported exactly the same as in the earlier versions.

NOTE: this feature requires change of the Operator Manual

2. RS232 COM driver functions are changed. Used the same drivers as in DL850 and GDS102 software.
3. Status screen is slightly modified – NMEA and sensor communication status info is removed.

NOTE: this change requires change of the Operator Manual. The screen dumps are enclosed below.
4. COM screen layout is modified (implemented the same way as DL850 COM screen). The frame in the right half of the screen contains all COM ports descriptors, organized in 3 columns : COM1, COM2 and sensor (link) . Each descriptor consists of the settings (UART format and output telegrams); error status/counters; and pin numbers on the XJ402 connector. Note, that BIOS COM3/COM4 ports are named as COM1/COM2 respectively. If the received telegram is not supported (processed) by the software, it is displayed with orange color in the data-monitoring window. If the data error occurs within the received telegram (invalid symbol or wrong checksum), this telegram will be displayed with the red color.

NOTE: this change requires change of the Operator Manual. The screen dumps are enclosed below.

19:20

T 23.0°C

NMEA sentences received, COM1
 àààYàààYààYà-c5)⌋\$VDVHW,,,,,00.2,
 N,00.4,K*58J
 \$VDVBW,+00.20,+00.00,A,,,U,,,U,,U
 *68J
 \$VDVHW,,,,,00.2,N,00.4,K*58J
 \$VDVBW,+00.20,+00.00,A,,,U,,,U,,U
 *68J
 \$VDVHW,,,,,00.2,N,00.4,K*58J
 \$VDVBW,+00.20,+00.00,A,,,U,,,U,,U
 *68J
 \$VDVHW,,,,,00.2,N,00.4,K*58J
 \$VDVBW,+00.20,+00.00,A,,,U,,,U,,U
 *68J
 \$VDVHW,,,,,00.2,N,00.4,K*58J
 \$VDVBW,+00.20,+00.00,A,,,U,,,U,,U
 *68J
 \$VDVHW,,,,,00.2,N,00.4,K*58J
 \$VDVBW,+00.20,+00.00,A,,,U,,,U,,U
 *68J

NMEA COM ports info			
	COM1	COM2	sensor
Base addr	2e8h	3e8h	2f8h
IRQ	9	5	3
BAUD	4800	4800	4800
DATA	None,8,1	None,8,1	None,8,1
Input XJ402	A=6,B=7	A=1,B=2	na
Rx status	Bad data	No signal	0'k
Data err	14	0	0
Overrun err	0	0	0
Output XJ402	A=8,B=9	A=4,B=5	na
VHW	on	on	na
VLW	off	off	na
VLW IEC07	off	off	na
VBW	on	on	na
MTW	off	off	na
0.2kts 0.0kts 0.0°			

Screen com

1 MENU 1 COM VHW MESSAGE on OUTPUT input DISPLAY

19:20

T 23.1°C

NMEA sentences received, COM1
 *68J
 \$VDVHW,,,,,00.2,N,00.4,K*58J
 \$VDVBW,+00.20,+00.00,A,,,U,,,U,,U
 *68J
 \$VDVHW,,,,,00.2,N,00.4,K*58J
 \$VDVBW,+00.20,+00.00,A,,,U,,,U,,U
 *68J
 \$VDVHW,,,,,00.2,N,00.4,K*58J
 \$VDVBW,+00.20,+00.00,A,,,U,,,U,,U
 *68J
 \$VDVHW,,,,,00.2,N,00.4,K*58J
 \$VDVBW,+00.20,+00.00,A,,,U,,,U,,U
 *68J
 \$VDVHW,,,,,00.2,N,00.4,K*58J
 \$VDVBW,+00.20,+00.00,A,,,U,,,U,,U
 *68J
 \$VDVHW,,,,,00.2,N,00.4,K*58J
 \$VDVBW,+00.20,+00.00,A,,,U,,,U,,U
 *68J

NMEA COM ports info			
	COM1	COM2	sensor
Base addr	2e8h	3e8h	2f8h
IRQ	9	5	3
BAUD	4800	4800	4800
DATA	None,8,1	None,8,1	None,8,1
Input XJ402	A=6,B=7	A=1,B=2	na
Rx status	0'k	No signal	0'k
Data err	0	0	0
Overrun err	0	0	0
Output XJ402	A=8,B=9	A=4,B=5	na
VHW	on	on	na
VLW	off	off	na
VLW IEC07	off	off	na
VBW	on	on	na
MTW	off	off	na
0.2kts 0.0kts 0.0°			

Screen com

2 MENU 1 COM 4800 BAUD None,8,1 DATA reset COM ERROR

19:21

T 23.1°C

```

NMEA sentences transmit, COM1
*68J
$VDMTW,23.1,C*01J
$VDUHW,,,,,00.2,N,00.4,K*58J
$VDVBW,+00.20,+00.00,A,,,U,,,U,,U
*68J
$VDMTW,23.1,C*01J
$VDUHW,,,,,00.2,N,00.4,K*58J
$VDVBW,+00.20,+00.00,A,,,U,,,U,,U
*68J
$VDMTW,23.1,C*01J
$VDUHW,,,,,00.2,N,00.4,K*58J
$VDVBW,+00.20,+00.00,A,,,U,,,U,,U
*68J
$VDMTW,23.1,C*01J
$VDUHW,,,,,00.2,N,00.4,K*58J
$VDVBW,+00.20,+00.00,A,,,U,,,U,,U
*68J
$VDMTW,23.1,C*01J
$VDUHW,,,,,00.2,N,00.4,K*58J
$VDVBW,+00.20,+00.00,A,,,U,,,U,,U
*68J
$VDMTW,23.1,C*01J

```

NMEA COM ports info			
	COM1	COM2	sensor
Base addr	2e8h	3e8h	2f8h
IRQ	9	5	3
BAUD	4800	4800	4800
DATA	None,8,1	None,8,1	None,8,1
Input XJ402	A=6,B=7	A=1,B=2	na
Rx status	0'k	No signal	0'k
Data err	0	0	0
Overrun err	0	0	0
Output XJ402	A=8,B=9	A=4,B=5	na
VHW	on	on	na
VLW	off	off	na
VLW IEC07	off	off	na
VBW	on	on	na
MTW	on	off	na
	0.2kts	0.0kts	0.0°

Screen com

1 MENU

1 COM

MTW MESSAGE

on OUTPUT

output DISPLAY

19:21 T 23.1°C

NMEA sentences received, COM3	NMEA COM ports info			
	COM1	COM2	sensor	
\$02+0000J	Base addr	2e8h	3e8h	2f8h
\$06+0231J	IRQ	9	5	3
\$01+0026J	BAUD	4800	4800	4800
\$02+0000J	DATA	None,8,1	None,8,1	None,8,1
\$06+0231J	Input XJ402	A=6,B=7	A=1,B=2	na
\$01+0026J	Rx status	0'k	No signal	0'k
\$02+0000J	Data err	0	0	0
\$06+0231J	Overrun err	0	0	0
\$01+0026J	Output XJ402	A=8,B=9	A=4,B=5	na
\$02+0000J	VHW	on	on	na
\$06+0231J	VLW	off	off	na
\$01+0026J	VLW IEC07	off	off	na
\$02+0000J	VBW	on	on	na
\$06+0231J	MTW	on	off	na
\$01+0026J				
\$02+0000J				
\$06+0231J				
\$01+0026J				
\$02+0000J				
\$06+0231J				
\$01+0026J				
\$02+0000J				

0.2kts 0.0kts 0.0°

Screen com

1 MENU	sensor COM	na MESSAGE	on OUTPUT	input DISPLAY
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Software version 1.27.18 release candidate, January 2009

\\Skipperdc\felles\Programmer\EML224\Software\Combo cabinet\Dos version\version 1_27_18

EML224 v1_27_18 release

1. Added indication of the clock seconds as per latest requirements of DNV inspector

Software version 1.27.19 Pre-release, January 2009

\\Skipperdc\felles\Programmer\EML224\Software\Combo cabinet\Dos version\version 1_27_19\Prerelease

1. Knots (Kn) and Nautical Miles (NM) abbreviations are checked as per standard IEC 62228
2. The backlight cannot be turned totally OFF – this is to avoid “blacking out” presentation of alarm conditions. (Comment of the DNV inspector)

Software version 1.27.19 release candidate, January 2009

\\Skipperdc\felles\Programmer\EML224\Software\Combo cabinet\Dos version\version 1_27_19\Release candidate

1. The screen plane initializing and copy graphic plane function bug fix. The symptom was hang-up when

- The unit has been turned to standby mode by the soft key
- Activated by pressing the soft key
- COM screen is selected.

Software version 1.27.20 release, March 2010

\\Skipperdc\felles\Programmer\EML224\Software\Combo cabinet\Dos version\version 1_27_20\Release v

1. NMEA VBW message bug fix (one comma too many)

Software version 1.27.21 release, March 2010

\\Skipperdc\felles\Programmer\EML224\Software\Combo cabinet\Dos version\version 1_27_21\Release v

1. NMEA VLW message bug fix (missing mandatory “N” fields.)

Software version 1.27.22 release, Nov 2012

1.1 Refactoring of the source code.

Implemented to be compatible with the Skipper software source codes folders structure, which was introduced by the Creo revisers.

1.2 Removing of the alarm functionality

Low and High speed alarm buttons are removed from the menus.

Audio alarm on/off button removed from the screen

All Alarm settings are removed from the status screen

Activation of buzzer and Alarm rely is disabled.

Changes, version 1.27.23, release candidate 2 Jan 2012

1.3 Alarm functionality

- Two different alarms are supported – low speed and high speed
- They may have different or the same identifier, adjustable at screen COM
- Porting of the code from DL850 (file Alarm.c)
- Alarm operation and presentation is implemented according to the IMO requirements
Blinking red if not acknowledged; Red – if acknowledged at alarm conditions

1.4 NMEA alarm support

- Two different alarms are supported – low speed and high speed
- They may have different or the same identifier, adjustable at Screen COM

- ALMA format timeout is implemented – to be able to force the Alma format from the sensor..
- The conversion functions, which are supporting the NMEA alarm sentences (converting the alarm date and time into the text format) are added to file miscel.c

1.5 GUI

- Text «Screen #» is moved slightly to the left – to accommodate alarm labels in the right part of the bottom line.
- Alarm limits indications are restored at Screen Status
- Alarm ID's are indicated at Screen Status
- The soft keys, adjusting the alarm limits are restored on the Screen Status
- The soft keys, adjusting low and high speed alarm ID's are implemented at Screen COM
- Depth units selection removed from the Screen Status

1.6 Automatic setup of the sensor output format.

- The display software is periodically checking the format of the messages from the sensor and sending the appropriate commands to force ALMA format.
Added support of some of the Skipper proprietary messages
- 22.04.2012 Added VBW, MTW and REVI as the automatically selected format. These will only be forced in the output stream if ALAM was not originally present.

EML224 software, version 1.27.25, release candidate 1, release notes

1. Software name text has been changed on the status screen.
Changed from «EML224» to «STW LOG»
2. When selecting the new sensor on the COM screen, the text from the previous sensor is being erased.
3. New button «AXIS» has been introduced, which allows selecting between the single and dual axis operation. The button is placed at Status Screen, Menu 6.
If the value is 2, the operation has not been changed.
If the value is 1, the operation is a single axis: the transversal speed is forced to 0.
All screen elements related to the dual axis operation has been changed – to accommodate the single axis.

EML224 software, version 1.27.25, release candidate 2, release notes

1. Heading error is not visible, if AXIS=1.
2. Removed the filter on ALMA messages in case of AXIS=1. Message 02 is not required for such configuration

EML224 software, version 1.27.25, release, release notes

1. Added PSKPBT output on sensor to format DL1 sensor.
2. Changed alarm zone from red to yellow on Screen A

This version was reapproved with DL1

Changes, version 1.27.26, Feb 2014

UART driver bug has been fixed. With the heavy traffic, the byte in the output stream was lost sometimes.

Changes, version 1.27.26, April 2014 release 2

Fix of com 2 crash when restarted with high load

Changes, version 1.28.01, Feb 2017

The changes require change of the manual

1. Alarm changes

- 1.1 Removed the softkey for speed hi on Screen A
- 1.2 Removed the softkey for speed lo in Screen A
- 1.3 Removed alarm Type and alarm ID softkeys on Screen Com Menu 2
- 1.4 Removed ALR option on screen com menu 1
- 1.5 Change relay alarm to power failure
- 1.6 On Screen A removed the red alarm graphic
- 1.7 On Screen Com removed ALR from the table
- 1.8 Removed buzzer button from Screen Status
- 1.9 On Screen Status Remove Spdalarm^ and speed alarm dn and lds

2. Demo indication

- 2.1 Added large S on screen when demo is active
- 2.2 Demo label is not flashing

3. NMEA Messages integrity checks

- 3.1 Included integrity check on the input of GPS.
 - GGA- Field 6 GPS Quality, only accept 1,2,3,4,5
 - GLL - Field 7 Mode indicator only accept D and A
 - THS - field 2 , Mode indicator only accept A
 - RMC
 - VTG
 - Removed RMA support

4. Screen presentation changes

- 4.1 The message "No calibration present "does not flash. The background is changed to Yellow
- 4.2 on the GPS and Gyro /ROT information the font size is 3.5mm
- 4.3 The messages with low integrity are shown by yellow color in the COM monitoring window - to avoid confusion. This will explain that data from such messages are received, but not processed.
- 4.4 Screen A : 0.5kn scale lines are added
- 4.5 The panel keys are lit in Standby

Changes version 1.28.02. June 2018

1. Heading error bug fix

Changes version 1.28.03. March 2020

1. Analog output now works with negative speed value