

# TYPE APPROVAL CERTIFICATE

Certificate no.: **TAA00000ZN**Revision No: 8

This is to certify:

that the Automatic Telephone System and Hands Free Voice Talk Back System

with type designation(s) **VINGTOR ACM** 

issued to

# Zenitel Norway AS avd Horten HORTEN, Norway

is found to comply with

**DNV** rules for classification - Ships

IMO Res. A.694(17) General requirements for shipborne radio equipment forming part of the global maritime distress and safety system (GMDSS) and for electronic navigational aids

| Application:                                |                |
|---------------------------------------------|----------------|
| See page 2                                  |                |
|                                             |                |
| Issued at Høvik on 2025-11-13               |                |
| This Certificate is valid until 2028-10-26. | for <b>DNV</b> |
| DNV local unit: Sandefjord                  |                |
| Approval Engineer: Steinar Kristensen       |                |

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This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.



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#### **Product description**

Vingtor ACM Automatic Telephone and Handsfree Two-Way Voice Communication system comprise the below equipment <sup>1)</sup>:

The VINGTOR ACM family includes the following main system racks, to be installed in a protected environment:

| Intercom exchange                         | Order number | Software version | Notes                                                                                           |
|-------------------------------------------|--------------|------------------|-------------------------------------------------------------------------------------------------|
| AlphaCom XE7                              | ACM-M-D-V2   | Version 13.1.3.x |                                                                                                 |
| AlphaCom XE7                              | ACM-M-A-V2   | Version 13.1.3.x | Same as ACM-M-D, but only equipped with line cards for analogue telephones and PA call stations |
| AlphaCom XE20                             | ACM-48-V10   | Version 13.1.3.x |                                                                                                 |
| AlphaCom XE26                             | ACM-144-V10  | Version 13.1.3.x |                                                                                                 |
| AlphaCom XE26                             | AACM-144-V10 | Version 13.1.3.x | Same as ACM-144-V10 and with extra power supply and terminal board                              |
| ICX-500 Intelligent Communication Gateway | 1002000100   | Version 1.2.3.x  | 24VDC input power                                                                               |
| ICX-510 Intelligent Communication Gateway | 1002000200   | Version 1.2.3.x  | 24VDC input power                                                                               |

**ACM Field Equipment** 

| Equipment type                                                    | Model          | Environment             |
|-------------------------------------------------------------------|----------------|-------------------------|
| Flush (console) mount intercom, PA Call Station/Talk Back Station | CRM-V          | Protected 2)            |
|                                                                   | CRM-V-2        |                         |
| Handset units for flush mount intercom                            | CRM-V-HS       | Protected 2)            |
| Gooseneck unit for flush mount intercom                           | CRM-V-GN       | Protected 2)            |
| Direct access key panel for flush mount intercom                  | CRM-V-DAK48    | Protected               |
| Headset solution for flush intercom                               | CRM-VH         | Protected 2)            |
| Handheld microphone                                               | EMMAR-1H       | Protected 2)            |
| Wall mount intercom, Talk Back Stations                           | VMP-503        | Exposed                 |
|                                                                   | VMP-530        | Exposed                 |
| Handset units for wall mount intercom                             | VMP-211        | Exposed                 |
|                                                                   | VMP-250        | Exposed                 |
| Headset units for wall mount intercom                             | VMP-36-PEL-Ad  | Exposed                 |
|                                                                   | VMP-36-PELP-Ad | Exposed                 |
| Throat microphone for headset                                     | AK6070T        | Exposed                 |
| Portable intercom units                                           | VMP-503PA      | Exposed                 |
|                                                                   | VMP-503PA/15   | Exposed                 |
| Handheld microphones                                              | P-66-VMP       | Exposed                 |
|                                                                   | P-66-VMP/10    | Exposed                 |
|                                                                   | P-66-VMP/25    | Exposed                 |
| Desktop intercom                                                  | 1008001000     | Protected 2)            |
|                                                                   | 1008001100     | Protected <sup>2)</sup> |
|                                                                   | VMP-D619       | Protected               |
|                                                                   | VMP-619        | Protected               |
|                                                                   | IPDMH-V2       | Protected <sup>2)</sup> |
|                                                                   | IPDMHB-V2      | Protected <sup>2)</sup> |
| Desktop analogue telephone                                        | DT-800M        | Protected               |
| VAF-1 Flush (console) mount analogue telephone, PA Call Station   | VAF-1          | Protected               |
| VAF-2 Flush (console) mount analogue telephone, PA Call Station   | VAF-2          | Protected               |

<sup>&</sup>lt;sup>1)</sup> Actual configuration may vary based on requirements for individual installations. Only modules listed in certificate are approved for installation.

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<sup>&</sup>lt;sup>2)</sup> Main station and station accessories supporting IC-Edge mode without Alphacom exchange.



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| Equipment type                                                             | Model          | Environment     |
|----------------------------------------------------------------------------|----------------|-----------------|
| Wall mount analogue telephone                                              | HSB-03         | Exposed         |
| Wall mount analogue telephone                                              | HSB-04         | Exposed         |
| Handset for wall mount analogue telephone                                  | HAS-3          | Exposed         |
|                                                                            | HAS-3WT        | Exposed         |
| Headset for wall mount analogue telephone                                  | P-MT7-A        | Exposed         |
| Heavy duty analogue telephone                                              | KNSP-09        | Exposed         |
|                                                                            | KNSP-01        | Exposed         |
| EX analogue telephone                                                      | DA24           | Exposed         |
|                                                                            | DA24ID         | Exposed         |
|                                                                            | DA24H          | Exposed         |
| Speakers (20 Ohm)                                                          | DSP-15EExmN    | Exposed 3)      |
|                                                                            | VML-1520       | Exposed 3)      |
| Turbine series intercom stations                                           | TCAS-x         | Exposed         |
| - TCAS =Analogue interface                                                 | TCIS-x         | Exposed 3)      |
| - TCIS = IP interface                                                      | TFIE-x         | Exposed 3)      |
| - TFIE = Industrial, IP interface                                          | TFIX-x-V2      | Exposed 3)      |
| - TFIX = Ex version, analogue interface                                    |                |                 |
| , 3                                                                        |                |                 |
| Note: The use of "x" in Model identifies variants of the products, where x |                |                 |
| is in the range 1-6                                                        |                |                 |
| Turbine intercom station, Industrial, IP interface                         | TFIE-TD        | Exposed         |
| Emergency Call Point                                                       | ECP-TD6        | Protected       |
| Turbine IP station/ amplifier/ interface kit                               | TKIS-x         | Protected 3)    |
|                                                                            | TKIE-x         | Protected 3)    |
| Note: Where x relates to encapsulation type                                |                |                 |
| Connection board with relays for Turbine/Exigo Industrial                  | TA-10          | Protected 3) 4) |
| 10m cable and pluggbox with PTT for industrial headset                     | TA-22b         | Exposed 3)      |
| Flowire - Ethernet converters                                              | FCDC1          | Protected 3)    |
|                                                                            | FCDC2          | Protected 3)    |
|                                                                            | FCDC3          | Protected 3)    |
| Power supplies for Flowire                                                 | Flowire 120    | Protected 3) 4) |
|                                                                            | Flowire 250    | Protected 3) 4) |
|                                                                            | Flowire Ex 120 | Protected 3) 4) |
|                                                                            | Flowire Ex 250 | Protected 3) 4) |
| Industrial handset for Turbine with PTT                                    | TA-23          | Exposed 3)      |
| Exigo Handheld Industrial Microphone, Compact                              | EMMAI-2H       | Exposed 3)      |
| Exigo Handheld Industrial Ex Microphone, 1 Button                          | EMMAX-1H       | Exposed 3)      |
| Ex Approved Headset, Pluggable                                             | AK5850xx       | Exposed 3)      |
| Ex Approved Cable for Headset with PTT                                     | TAX-2b         | Exposed 3)      |
| Ex Approved Handset with PTT, Unterminated                                 | TAX-3          | Exposed 3)      |
| Speakers with transformer                                                  | CL-200T        | Protected       |
| -F                                                                         | VLS-15T/F      | Exposed         |
|                                                                            | VLS-30T/F      | Exposed         |
|                                                                            | DSP-15EExmNT   | Exposed         |
| Network loudspeakers                                                       | ELSII-10H      | Protected 3)    |
| l                                                                          | ELSIR-10C      | Exposed 3)      |

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<sup>&</sup>lt;sup>3)</sup> Main station and station accessories supporting IC-Edge mode without Alphacom exchange <sup>4)</sup> May be used in an exposed environment when mounted in TFIE intercom stations or EAPII access panels.



Protected

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**Equipment type** Model **Environment** Volume Controller, 15W with 24VDC Override, Flush Mount VCOR-15 Protected Volume Controller, 15W with 24VDC Failsafe Override Relay, Flush VCOR-15F Protected Mount Volume Controller, 60W with 24VDC Override, Flush Mount VCOR-60 Protected Volume Controller, 60W with 24VDC Failsafe Override Relay, Flush VCOR-60F Protected Mount Signal unit/lamp EHS-24x Exposed Exposed EHS-220x EHS-110x Exposed BLK5-24x Exposed BLK5-230x Exposed Note: The use of "x" in Model identifies color variants of the products. Exposed BLK5-115x Exposed PD2100AC Signal unit/buzzer A-100 Exposed A-100AC Exposed HB-105 Exposed Exposed HB-90 Signal unit/lamp and buzzer SON-16X-X Exposed Note: The use of "X" in Model identifies variants of the products, e.g. AL-100X Exposed different colours and supply voltages. X can be more than one AL-105X Exposed digit/character. Watertight relay box CRB-7 Exposed Exposed IRR-3 Watertight connection box CD-4 Exposed CD-7-VMP Exposed SB01 Exposed Indoor connection boxes PT-625A Protected

| Equipment type    |                                                                   | Model                                                       | Environment         |
|-------------------|-------------------------------------------------------------------|-------------------------------------------------------------|---------------------|
| Access Panels     | Exigo Call Panel, PTT Button, Pluggable Microphone,Ethernet       | ECPIR-P                                                     | Protected           |
|                   | Exigo Call Panel, PTT + 3 Buttons, Pluggable Microphone, Ethernet | ECPIR-3P                                                    | Protected           |
|                   | Exigo Alarm Panel, 8 Buttons, Ethernet                            | EAPIR-8                                                     | Protected           |
|                   | Exigo Button Expansion Module, 8 Buttons                          | EBMDR-8                                                     | Protected           |
|                   | Exigo Industrial Access Panel, 1 Button, Ethernet                 | EAPII-1                                                     | Exposed             |
|                   | Exigo Industrial Access Panel, 6 Buttons, Ethernet                | EAPII-6                                                     | Exposed             |
|                   | Exigo Industrial Ex Access Panel, 1 Button, Flowire               | EAPFX-1-V2                                                  | Exposed             |
|                   | Exigo Industrial Ex Access Panel, 6 Buttons, Flowire              | EAPFX-6-V2                                                  | Exposed             |
| Mounting cabinet  |                                                                   | PLM-32                                                      | Exposed             |
|                   |                                                                   | PLM-43                                                      | Exposed             |
|                   |                                                                   | PLM-54                                                      | Exposed             |
|                   |                                                                   | 76R1005                                                     | Exposed             |
|                   |                                                                   | 76R1007                                                     | Exposed             |
|                   |                                                                   | WCAB-1005                                                   | Exposed             |
|                   |                                                                   | WCAB-1010                                                   | Exposed             |
| Network Equipment | Data switch kit with power line filter                            | C1000-24FP-4G-<br>L/IEC60945<br>C1000-48P-4G-<br>L/IEC60945 | Protected Protected |
|                   | Data switch                                                       | DNV6250-P24-EU                                              | Protected           |
|                   |                                                                   | DNV6250-P48-EU                                              | Protected           |

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| Equipment type |                                                | Model                        | Environment |
|----------------|------------------------------------------------|------------------------------|-------------|
|                | Data switch for DIN rail mounting              | eCON2050BA                   | Protected   |
|                |                                                | eCON3080BTA                  | Protected   |
|                |                                                | EDS-405A                     | Protected   |
|                |                                                | EDS-P510                     | Protected   |
|                |                                                | IE-2000 series               | Protected   |
|                |                                                | IE-4000 series               | Protected   |
|                | IP over two-wire switch                        | NV-PL-08-F                   | Protected   |
|                | ii ever the this emien                         | NV-PL-024-F <sup>5)</sup>    | Protected   |
|                |                                                | NV-PL-048-F <sup>5)</sup>    | Protected   |
|                |                                                | NV-PLLK                      | Protected   |
|                | Firewall                                       | FPR1010-NGFW-<br>K9/IEC60945 | Protected   |
|                | Fibre interface                                | GLC-SX-MMD                   | Protected   |
|                |                                                | J4858C                       | Protected   |
|                | Injector sets                                  | INJKIT-NOP                   | Protected   |
|                | ,                                              | INJKIT-PSU                   | Protected   |
|                | FXS gateway                                    | FXS-GW-24P                   | Protected   |
| UHF            | Portable two-way radios MotoTrbo DP4XXXe for   | DP4400e                      | Portable    |
| <b>~</b>       | UHF on-board                                   | DP4401e                      | Portable    |
|                | orn on board                                   | DP4401 Ex                    | Portable    |
|                |                                                | DP4600e                      | Portable    |
|                |                                                | DP4601e                      | Portable    |
|                |                                                | DP4800e                      | Portable    |
|                |                                                |                              |             |
|                |                                                | DP4801e                      | Portable    |
|                | MALE A THE DIMONON OF                          | DP4801 Ex                    | Portable    |
|                | Mobile two-way radios MotoTrbo DM4XXXe for     | DM4400e                      | Protected   |
|                | UHF on-board                                   | DM4401e                      | Protected   |
|                |                                                | DM4600e                      | Protected   |
|                |                                                | DM4601e                      | Protected   |
|                | Portable two-way radios MotoTrbo R7 series for | MotoTrbo R7 FKP              | Portable    |
|                | UHF on-board                                   | Premium                      |             |
|                |                                                | MotoTrbo R7 FKP              | Portable    |
|                |                                                | Capable                      |             |
|                |                                                | MotoTrbo R7 NKP<br>Premium   | Portable    |
|                |                                                | MotoTrbo R7 NKP              | Portable    |
|                |                                                |                              | Fortable    |
|                |                                                | Capable                      | Dawtabla    |
|                |                                                | MotoTrbo R7a                 | Portable    |
|                |                                                | MotoTrbo R7Ex FKP            | Portable    |
| JHF            | MataTiba Ol DESCO Dania atau ( 1995            | MotoTrbo R7Ex NKP            | Portable    |
| OT IF          | MotoTrbo SLR5500 Repeater for UHF on-board     | SLR5500                      | Protected   |
|                | Active antenna combiners:                      | 7511 00145 6011              | <b>D</b>    |
|                | 2-channel combiner                             | ZEN-COMB-2CH                 | Protected   |
|                | 3-channel combiner                             | ZEN-COMB-3CH                 | Protected   |
|                | 3-channel combiner                             | ZEN-COMB-4CH                 | Protected   |
| Accessories    | Heavy Duty Headset for DP4xxxe                 | PMLN5275C                    | Protected   |
|                | Heavy Duty Headset for DP4xxxe                 | PMLN6853A                    | Protected   |
|                | Headset for DP4xxxe                            | MT53H79A-77                  | Protected   |
|                | Heavy Duty Headset for DP4xxxe                 | A-COM TRBO                   | Protected   |
|                | Body Switch for Handsfree Operation of DP4xxxe | C-C440                       | Protected   |
|                | Headset with Bone Microphone for DP4xxxe       | HC-1                         | Protected   |

 $^{5)}\,\mathrm{Low}$  temperature limited to +5°C as per DNV-CG-0339

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| Equipment type |                                                 | Model     | Environment |
|----------------|-------------------------------------------------|-----------|-------------|
|                | Foot Switch                                     | 254-2348  | Protected   |
|                | Microphone for DM4xxxe                          | DM8320    | Protected   |
|                | Noise Cancelling Heavy Duty Headset for DP4xxxe | PMLN6852A | Protected   |
|                | Behind-the-Head Headset, GCAI Mini              | PMLN8085A | Protected   |
|                | Over-the-Head Headset, GCAI Mini                | PMLN8086A | Protected   |
|                | Over-the-Head Headset, NEXUS                    | PMLN8265A | Protected   |
|                | Behind-the-Head Headset, NEXUS                  | PMLN8266A | Protected   |
|                | Hardhat Mount Headset, NEXUS                    | PMLN8267A | Protected   |
|                | PTT NEXUS Adapter, GCAI-MINI                    | PMLN8297A | Protected   |

#### **Application/Limitation**

#### Application:

The system may be used as:

- 1. Automatic telephone system and Talk Back system as handsfree two-way voice communication system as required by DNV Nautical safety rules.
- 2. ACM IC-Edge automatic telephone, IP intercom for independent installation without external call server.
- 3. Fixed and handheld UHF communication system; interfaced to UHF on-board Base Station SLR5500 and ACM System for interface of PA.
- 4. Fixed and handheld UHF communication may be applied to comply with requirements for Safe Return to Port (SRtP), subject to configuration and installation. Compliance with SRtP is subject separate vessel specific approval (plan approval).

#### Limitations:

- 1. Network / network equipment/VLAN solution shall be in accordance with Zentiel's specifications in "Data Network Guideline for Ships VINGTOR ACM Solution, Doc. No. A100K10649". When such subsystems/components are not included in Zenitel's delivery, Zenitel shall evaluate these subsystems/components towards above mentioned specification and include the relevant documents in the system document package delivered for each installation.
- 2. Local muting of the loudspeakers near call stations shall be available.
- 3. Any Ex-equipment (equipment to be used in areas with explosive atmosphere) listed in this certificate are subject to separate Ex- approvals.
- 4. ACM IC-Edge components as indicated in above product description may be configured and installed to comply with DNV rules for Automatic Telephone systems. Installation to be in accordance to installation documentation.
- 5. UHF listed may be fitted with headsets and microphones for handsfree communication. Installation to be in accordance to installation documentation. UHF repeater SLR5500 may provide dual LAN communication link between units, and be interfaced to ACM for PA announcement on dedicated channels.

#### **Tests carried out**

Performance testing: DNV-RU-SHIP Part 6 Chapter 3 - for Two-way voice communication and

handsfree two-way voice communication.

Environmental testing: IEC 60945 (2002) incl. Corr.1 (2008)

### **Marking of product**

The Manufacturer and Type Designation to be applied to the equipment in a clearly visible location. In addition the equipment shall be marked with serial number, safe distance to magnetic compass, power consumption and/or supply voltage.

#### Periodical assessment

Periodical assessment is to be performed after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate.

The scope of the periodical/renewal assessment is to verify that the production quality conditions stipulated for the type approval are complied with and that no alterations are made to the product design or its components and/or materials without appraisal by the Society.

This certificate is only valid if required periodical assessments are carried out with satisfactory results. To check the validity of this certificate, please look it up in <a href="https://approvalfinder.dnv.com">https://approvalfinder.dnv.com</a>

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Manufactured by: Zenitel Norway A/S avd Horten, Bromsveien 17, HORTEN, 3183, Norway

## **Type Approval documentation**

| DNV<br>No | Document ID                    | Rev.       | Description                                                                                                                      |
|-----------|--------------------------------|------------|----------------------------------------------------------------------------------------------------------------------------------|
| 329       | U241088E1                      | 2025-02-24 | Report: Phoenix Testlab, EN 60945 Solar radiation and oil resistance test report for R7Ex UHF1 IIC UHF radio                     |
| 328       | RP-71373-01                    | Α          | Report: Motorola, Corrosion test report for R7Ex UHF-B1 IIC UHF radio                                                            |
| 327       | RP-70714-01                    | Α          | Report: Motorola, Environmental test report for R7Ex UHF-B1 IIC UHF radio                                                        |
| 326       | 1161                           | 2025-02-14 | Certificate: BSH, Compass safe distance for R7Ex UHF radio                                                                       |
| 324       | 0717N01-<br>MARITIME-<br>00003 | A          | Report: Motorola, EMC test report for R7Ex radio                                                                                 |
| 323       | 0717N01-<br>MARITIME-<br>00002 | A          | Report: Motorola, EMC test report for R7Ex radio                                                                                 |
| 322       | 0717N01-<br>MARITIME-<br>00001 | Α          | Report: Motorola, EMC test report for R7Ex radio                                                                                 |
| 317       | REP10010                       | Α          | Report: Nemko, Compass safe distance test report for HSB-4 and VAF-2 analoge telephones                                          |
| 316       | DPL/003/431/24                 | June 2025  | Report: CTM, EMC test report for VAF-2 Analog Telephone                                                                          |
| 315       | DPL/003/430/24                 | June 2025  | Report: CTM, Low temperature test report for VAF-2 Analog Telephone                                                              |
| 314       | DPL/003/432/24                 | 2          | Report: CTM, Low temperature test report for HSB-4 Analog Telephone                                                              |
| 313       | 31521-2                        | 0          | Report: Applica, Radiated emissions and immunity testing of Alphacom intercom system                                             |
| 311       | DPL/003/014/24                 | 2024-02-13 | Report: CTM, EMC test report for VAF-2 Analog Telephone                                                                          |
| 310       | DPL/003/018/24                 | 2024-02-13 | Report: CTM, EMC test report for HSB-4 Analog Telephone                                                                          |
| 308       | 6/BT/2024                      | 2024-02-02 | Report: KOMAG, IP2X and acoustic noise and signals test report for VAF-2 Analog Telephone                                        |
| 307       | 5/BT/2024                      | 2024-02-02 | Report: KOMAG, IPX6 test report for HSB-4 Analog Telephone                                                                       |
| 305       | DPL/003/013/24                 | 2024-02-13 | Report: CTM, Temperature tests report for VAF-2 Analog Telephone                                                                 |
| 304       | DPL/003/017/24                 | 2024-02-13 | Report: CTM, Temperature tests report for HSB-4 Analog Telephone                                                                 |
| 303       | DPL/003/008/24                 | 2024-02-20 | Report: CTM, Vibration test report for VAF-2 Analog Telephone                                                                    |
| 302       | DPL/003/009/24                 | 2024-02-20 | Report: CTM, Vibration test report for HSB-4 Analog Telephone                                                                    |
| 297       | REP038399                      | 2024-04-23 | Report: Nemko, Corrosion test report for HSB-4 Analog FXS telephone                                                              |
| 293       | RP-66055-01                    | 2021-09-27 | Report: Motorola, Environmental test report for MOTOTRBO R7                                                                      |
| 292       | F211357E1                      | 2021-11-02 | Motorola: Phoenix Testlab, EMC test report for Motorola MOTOTRBO R7 UHF                                                          |
| 290       | 22639-<br>MARITIME-<br>00155   | A          | Report: Motorola, EMC test report for Motorola MOTOTRBO R7 UHF                                                                   |
| 288       | PR142054                       | 2021-08-31 | Report: NTS, Vibration, corrosion and solar radiation tests for MOTOTRBO R7 UHF                                                  |
| 287       | 1100                           | 2021-11-09 | Certificate: BSH, Compass safe distance testing for Motorola MOTOTRBO R7 UHF                                                     |
| 280       | F211357E1                      | 2021-11-02 | Report: Phoenix Testlab, EMC test report for R7 UHF radio with charger                                                           |
| 276       | P22-0154                       | 2023-06-28 | Report: EKTOS, EMC and environmental test report for FXS-GW-xxP gateway and NV-PL-0xx IP over two-wire switch                    |
| 275       | P21-0145                       | 2022-01-31 | Report: EKTOS, EMC and environmental test report for Zenitel Network Equipment C1000 + FPR1010-NGFW-K9 Firewall system           |
| 228       | A100K11523                     | 2018-12-05 | Manual, Zenitel, Exigo Ex Access Panels and Turbine Ex Intercoms-<br>Mounting Manual                                             |
| 221       | E21182.00                      | 00         | Report: Nemko, EMC test report of Ex Intercoms and Access Panels-<br>V2, TFIX-1-V2, TFIX-2-V2, TFIX-3-V2, EAPFX-1-V2, EAPFX-6-V2 |

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| DNV<br>No | Document ID                     | Rev.                 | Description                                                                                                                            |
|-----------|---------------------------------|----------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| 220       | 30811                           | 0                    | Report: Applica, EMC and environmental testing of ICX-510                                                                              |
| 213       | E20116.00                       | 2020-11-03           | Report: Nemko, EMC and environmental test report for IP Intercom stations IP Desk Master station with Handset-V2 and IP Desk Master-V2 |
| 212       | E20115.00                       | 2020-11-04           | Report: Nemko, EMC and environmental test report for IP Intercom stations CMR-V-2 and IP-CROR                                          |
| 209       | 21456                           | 0                    | Report: Applica, EMC and environmental testing of ICX500 VS Server                                                                     |
| 207       | TAA00000NE                      | 2016-08-22           | Certificate: DNVGL, TA certificate for IE 4000 series Industrial Ethernet switches                                                     |
| 206       | TAA000025B                      | 2019-01-04           | Certificate: DNVGL, TA certificate for IE-2000 Ethernet Switches                                                                       |
| 196       | U180661E2                       | 2018-05-28           | Report: Phoenix Testlab, Oil resistance test report for DP4801 Ex (MDH56QCN9PA3AN)                                                     |
| 195       | U180661E1                       | 2018-05-30           | Report: Phoenix Testlab, Solar radiation test report for DP4801 Ex (MDH56QCN9PA3AN)                                                    |
| 194       | RP-58563-01                     | Α                    | Report: Motorola, Environmental test report for DP4801 Ex                                                                              |
| 193       | F180661E1                       | 2018-06-06           | Report: Phoenix Testlab, EMC test report for DP4801 Ex incl ancillery equipment                                                        |
| 192       | 118-30784-2                     | 2019-06-14           | Report: Force Technology, Marine type testing of 2 channel and 4 channel UHF Maritime Combiners                                        |
| 191       |                                 |                      | Manual: Motorola, DP4801 Ex User Guide                                                                                                 |
| 189       |                                 |                      | Manual: Motorola, DP4401 Ex Non-Display User Manual                                                                                    |
| 182       | E19125.01                       | 2019-12-09           | Report: Nemko, Environmental test report for Flowire - FCDC3                                                                           |
| 181       | E19084.00                       | 2019-06-12           | Report: Nemko, EMC test report for Flowire - FCDC3                                                                                     |
| 179       | A100K11960                      | 2019-10-11           | Manual: Zenitel, Replacing Flowire FCDC3 Converter                                                                                     |
| 178       | A100K11959                      |                      | Manual: Zenitel, Flowire FCDC3 Guidelines for Exigo                                                                                    |
| 177       | A100K11958                      |                      | Manual, Zenitel, Flowire FCDC3 Configuration Manual                                                                                    |
| 176       | A100K11957                      | 2019-10-11           | Manual: Zenitel, Flowire FCDC3 Getting Started Guide                                                                                   |
| 172       | TAA00001D2                      | Latest rev.          | Certificate: DNVGL, Type Approval certicate for SPA-V2 PA/GA system                                                                    |
| 171       | TAA000003W                      | Latest rev.          | Certificate: DNVGL, Type Approval certicate for Vingtor Exigo PA/GA system                                                             |
| 163       | A100K11711                      | Revision 1.0         | Manual: ACM System - Marine UHF                                                                                                        |
| 162       | A100K11720                      | Version 1.0 (signed) | Report: ACM Pulse Test Specification Performance Test DNV                                                                              |
| 161       | A100K11700                      | Rev -01<br>(signed)  | Report: Performance Test procedure DNV GL Approval of Upgrading ACM System Including UHF On-board Radio Capabilities                   |
| 149       | T208091-1 -<br>DANAK<br>1914910 | 2015-01-13           | Report: Delta IEC60945 Test of Data Networking Equipment according to Marine specifications - Zenitel Norway AS                        |
| 147       | A100K11065                      |                      | Manual: VINGTOR Pulse Getting Started                                                                                                  |
| 145       | 30-12-2016                      | rev1.0               | Procedure: ACM Pulse Test Specification Performance Test DNV                                                                           |
| 144       | A100K11700                      | rev03                | Procedure: MotoTurbo DNV-GL Performance Test Procedure                                                                                 |
| 142       | U161176E1                       | Ver. 2               | Report Phoenix TestLab: Test report IEC60945 Environmental testing DP4XXX (DP4801)                                                     |
| 141       | U160035                         |                      | Report Phoenix TestLab: Test report IEC60945 environmental tests for UHF SLR 5500                                                      |
| 140       | U113486E1                       |                      | Report Phoenix TestLab: Test report safety and environmental (IEC 60945) testing of DM4XXX (DM4601)                                    |
| 136       | F161176E1<br>Annex A            |                      | Report Phoenix TestLab: Photos from IEC 60945 and ETSI 300 720-1 testing of DP4XXX                                                     |
| 135       | F161176E1                       |                      | Report Phoenix TestLab: IEC 60945 Report from EMC testing acc - DP4801e                                                                |
| 134       | F160035E2<br>Annex A            | 2nd edition          | Report Phoenix TestLab: Annex A Photos from IEC60945 testing of SLR5500                                                                |
| 133       | F160035E2                       | 2nd edition          | Report Phoenix TestLab: Test report IEC60945 for SLR5500                                                                               |
| 129       | E113486E1[1]                    |                      | Report Phoenix TestLab: Test report IEC 60945 for DM4XXX (DM4601) Fixed mobile UHF radio                                               |
| 126       | 2011-10-10                      |                      | Report BSH: IEC60945 Compass Safe Distance - DM4601-UHF LP                                                                             |

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| 125       | 2016-02-10    |                         | Report BSH: IEC60945 Compass Safe Distance - Motorola SLR 5500 R                                                               |
| 124       | FF113486E1    |                         | Report Phoenix TestLab: Annex A Photos from safety and                                                                         |
| 123       | 2016-09-12    |                         | environmental (IEC 60945) testing of DM4XXX (Fixe type)  Report BSH: IEC60945 Compass Safe Distance - UHF DP4801e              |
| 89        |               |                         | SLR5500_BSIM_EN                                                                                                                |
| 71        | TAA000003W    | Rev 1                   | TAA000003W Rev 1- Vingtor Exigo                                                                                                |
| 57        | U160035E1     |                         | Report: EN 60068 -, EN 60945 , Phoenix Testlab, Motorola SLR 5500 Filter FMT05B03                                              |
| 55        |               |                         | Report: EN 60945 Phoenix Testlab, UHF on-board vessels repeater SLR5500 with line filter FMT05FB03 Annex A                     |
| 54        | F160035E2     | 2nd edition             | Report: EN 60945 Phoenix Testlab, UHF on-board vessels repeater SLR5500 with line filter FMT05FB03                             |
| 53        |               |                         | Report: IEC 60945 Phoenix Testlab, UHF on-board vessels repeater SLR5500 with line filter FMT05FB03 Annex B                    |
| 50        | 933           | 2nd version             | Certificate: BSH, Compass safe distance test IEC60945 11.2 - Motorola SLR 5500                                                 |
| 49        | U161176E1     |                         | Report: EN 60068 -, EN 60945 , Phoenix Testlab, Motorola DP4801e                                                               |
| 48        |               |                         | Report: EN 60945, Phoenix Testlab, Motorola DP4801e, Annex                                                                     |
| 47        | F161176E1     |                         | Report: EN 60945, Phoenix Testlab, Motorola DP4801e                                                                            |
| 46        | 954           |                         | Certificate: BSH, Compass safe distance test IEC60945 11.2 - Motorola DP4801e                                                  |
| 42        |               |                         | Datasheet: Procom PRO-COM450-HDAR-2/ 2-Channel 19                                                                              |
| 41        |               |                         | Datasheet: Procom PRO-ARG, 19" Rack-Mountable Receiver Multicoupler series for the VHF through low UHF bands 50 MHz - 960 MHz. |
| 38        | 69 280-90 HH  | 2009-07-24              | Certificate: GL, Rittal KL, AE, AK, AS, AP and EB cabinets                                                                     |
| 35        | ACM 11.2.3.10 | 2014-06-12              | Description: Zenitel, ACM 11.2 Release notes                                                                                   |
| 33        | E14084.00     | 2014-06-12              | Report: Nemko, EMC and environmental test report for Turbine Ex intercom                                                       |
| 32        | E14083.00     | 2014-06-11              | Report: Nemko, EMC and environmental test report for Turbine Industrial intercom                                               |
| 31        |               | 2014-06-01              | Report: Zenitel, VINGTOR Exigo performance test incl ACM integration and Turbine intercom stations                             |
| 29        | GR 14-001     | 2014-05-28              | Report: Zenitel, Turbine TCAS-x - EN60945 Compliance                                                                           |
| 28        | 20047         | 0                       | Report: Applica, Environmental test report for Turbine Compact                                                                 |
| 27        | 2013-3236     | 0                       | Report: DNV, EMC test report for Turbine Compact                                                                               |
| 26        | 2010-3593     | 1                       | Report: DNV, Environmental Testing of Vingtor ACM Intercom System                                                              |
| 23        |               | 2010-20-12<br>V 1.1     | Report: Zenitel, Performance Test DNV Type Approval of upgraded ACM System including IP capabilities                           |
| 22        | A100K10792    | V2.0                    | Manual: Stentofon, ACM Emergency Functions                                                                                     |
| 21        | 139500        | 2010-06-07              | Report: Nemko, EMC test report for Power Supply unit                                                                           |
| 18        | 97-1341       | 1                       | Report: DNV, EMC and environmental tests for Vingtor ACM-48 intercom system                                                    |
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| 16        | A100K10649    | 1.0, 03 Feb.<br>2010    | Manual: Vingtor, Data Network Guidelines for Ships - VINGTOR ACM Solution                                                      |
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| 13        | A100K10430    | V .1.0                  | Manual: Vingtor, Technical manual ACM Telephone System ACM-M-A-V2                                                              |

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| 12        | 96-1197     | 1997-01-29         | Report: DNV, EMC testing of Vingtor VMP/ACM Intercom System for Marine Use                                          |
| 11        | GR-YYYYxx   | 4th,<br>15.11.2009 | Report: Zenitel, Technical Report ACM-system  IEC 60945 Compliance                                                  |
| 10        | E06067.00   | 1                  | Report: Nemko, EMC test report for AlphaCom E series exchanges                                                      |
| 9         | 2000-1366   | 1                  | Report: DNV, EMC and environmental test report for AlphaCom M                                                       |
| 8         | 106916/04   | 2008-06-23         | Report: Nemko, EMC test report for IP Intercom Station                                                              |
| 7         | E07219.00   | 1                  | Report: Nemko, Maritime exchange cabinet ACM 144, Radiated disturbance 1-2GHz and Radiated RF field immunity 1-2GHz |
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