

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Automatic Telephone System**with type designation(s)
MCX-5000 Series

Issued to

MARINE RADIO CO., LTD.
Busan, Republic of Koreais found to comply with
DNV GL rules for classification – Ships and offshore units**Application :****Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.**This Certificate is valid until **2020-11-19**.Issued at **Busan** on **2015-11-20**DNV GL local station: **Busan**Approval Engineer: **Kwang Whan Cho**for **DNV GL**

Baeg Soon Choi
Head of Section

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.

Product description

MCX-5000 Series, Automatic Telephone System.

MCX-5000 Series are available in 4 types depending on the capacity.

Type	Description (Capacity)
MCX-5000A	Auto exchanger with 40 extension lines
MCX-5000B	Auto exchanger with 64 extension lines
MCX-5000C	Auto exchanger with 88 extension lines
MCX-5000D	Auto exchanger with 128 extension lines

MCX-5000 Series, Automatic Telephone System is consisting of the following components:

Description	Component	Module No.	Environment	Software version
Auto. Exchanger	Switching regulator	P87006A	Protected	-
	CPU board	P87002J	Protected	20.XX
	Dial tone board	P87003D	Protected	-
	Trunk board	P87004E	Protected	-
	In/Out switch board	P87005C	Protected	-
	Terminal board	P78017A	Protected	-
	LCD module Key board	P87001D	Protected	18.XX
	Mother board	P87014D	Protected	-
	Rectifier unit	A87008	Protected	-
Handset	Desk type handset	LC-221A	Protected	-
	Wall type handset	LC-213G1	Protected	-
	Flush type handset	LC-215A	Protected	-
	Portable type handset	LC-217	Protected	-

Application/Limitation

- The system shall be positioned more than 5 meters away from magnetic compass.
- The system shall be installed in accordance with operation & installation manual.
- The system complies with the requirements to a listener according to IEC 61162-1.

Type Approval documentation

Tests carried out

- Performance testing: DNV Type approval program No. 848.25
- Environmental testing: IEC 60945 (2002)
- Serial interface testing: IEC 61162-1 (2010)

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

A retention survey is to be performed at least once every second year, and again upon renewal of this certificate. The scope of the retention/renewal survey is to verify that the production quality conditions



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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.

END OF CERTIFICATE