

Pub. No. : TI-1691

Date : June, 1998

## 11 TECHNICAL DESCRIPTION OF EQUIPMENT (FCC Rules § 2.983)

### 11.1 Function of Each Semiconductor or Active Device (FCC Rule § 2.983 (d)(6))

ANTENNA UNIT

TRANSCEIVER MODULE (RTR-062)

Modulator Trigger PCB 03P9243 (RFC)

CR1 - CR4,	Over-Voltage & Reverse-Voltage Protection
CR6 - CR9:	Reverse-Voltage Protection
CR5:	Current Amplifier
Q1 - Q12, Q15:	Buffer Amplifier
Q13 - Q14:	+5 V Regulator
U1:	Inverter Gate
U2:	Monostable Multivibrator
U3:	PLD
U4:	Oscillator
U5:	NAND Gate
U6:	Regulator
U7:	Photo-Coupler
U8:	Comparator
U9 - U10:	

Modulator PCB 03P9244 (MD)

CR1 - CR3, CR5:	Reverse-Voltage Protection
CR4:	Rectifier
Q1-Q4, Q21:	Switching
Q5 - Q20:	FET Gate Driver
U1:	Regulator
U2:	Photo-Coupler

Chassis Mounted Parts

CR870 - CR871:	Clipper
CR880:	Limiter
HY801:	3 Ports Circulator
U801:	MIC Frequency Converter with Limiter
V801:	Magnetron

I.F. Amplifier PCB 03P9232 (IF)

CR601-CR607:	Switching
CR608:	Over-Voltage Protection
CR609:	Protector
CR616:	DC Restoring
CR622:	Thermal Compensation
CR626:	Clamp
CR629-CR630:	Over-Voltage Protection
Q601-Q602:	I.F. Amplifier in Cascade Connection
Q603:	Switching
Q609-Q610:	I.F. Amplifier in Cascade Connection
Q614-Q615:	I.F. Amplifier in Cascade Connection
Q616:	Bias Fix
Q617:	Detector
Q618:	Current Buffer
Q619 - Q620:	Tuning Indication Amplifier
Q625-Q628:	Video Amplifier
Q630:	Emitter-follower Amplifier
Q631:	Over-Voltage Protection
Q635-Q636:	Switching
U601-U603:	I.F. Amplifier
U604:	Band Width Select Comparator
U605-U609:	DC Regulator
U610:	IF Amplifier
U611:	Pulse Generator
U612:	Inverter

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Bearing Signal Generator PCB MP-3795

Q901 - Q902:	Pulse Amplifier
U901:	Photo Interrupter
U902:	Comparator

**ATTACHMENT 4** [ List of Test/Measuring Equipment ]

## 3. RF Power Output

<u>Model</u>	<u>Type</u>	<u>Serial no.</u>	<u>Mfr.</u>	<u>Date Calib.</u>
Spectrum Analyzer	71210C	2927A02847	HP	97/08
Oscilloscope	TDS680B	B030202	Tektronix	98/02
Directional Coupler	----	R94471	Shimada	98/03
Directional Coupler	5D364S	R05762	Shimada	98/03
Voltage Divider	P6015	----	Tektronix	97/08
Current Transformer	2100	----	Pearson Electronics	97/08
Power Meter	436A	2410A19137	HP	97/08
Power Sensor	9481A	2349A39603	HP	97/08
Frequency Counter	TR5824A	41940036	Advantest	97/08
Frequency Meter	X532B	1441A00523	HP	97/08
Crystal Detector	423B	03696	HP	97/08
Step Attenuator	8494B	1510A07310	HP	97/09
Step Attenuator	8495B	1350A04754	HP	97/09
Dummy Load	----	8411057	Shimada	98/03

## 4. Modulation Characteristics

<u>Model</u>	<u>Type</u>	<u>Serial no.</u>	<u>Mfr.</u>	<u>Date Calib.</u>
Oscilloscope	TDS680B	B030202	Tektronix	98/02
Step Attenuator	8494B	1510A07310	HP	97/09
Step Attenuator	8495B	1350A04754	HP	97/09
Crystal Detector	423B	1822A24214	HP	97/09
Directional Coupler	5D364S	R9425	Shimada	98/03
Dummy Load	-----	8411057	Shimada	98/03
Voltage Divider	P6015	----	Tektronix	97/08
Spectrum Analyzer	71210C	2927A02847	HP	97/08
External Mixer:	11970K	----	HP	97/08
External Mixer:	11970A	----	HP	97/08
Directional Coupler	5D364S	R9425	Shimada	97/04

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#### 6. Spurious Emissions at Antenna Terminal

<u>Model</u>	<u>Type</u>	<u>Serial no.</u>	<u>Mfr.</u>	<u>Date Calib.</u>
Spectrum Analyzer	71210C	2927A0847	HP	97/08
Attenuator (11dB/1dB)	8494B	1510A07310	HP	97/09
External Mixer:	11970K	----	HP	97/08
External Mixer:	11970A	----	HP	97/08
Directional Coupler	5D364S	R0576	Shimada	98/03
Dummy Load	-----	8411057	Shimada	98/03
Notch Filter	MA8L32#8	----	Microwave	----
High Pass Filter	MAS15905004	R9904	Shimada	----

#### 7. Field Strength of Spurious Radiation

<u>Model</u>	<u>Type</u>	<u>Serial no.</u>	<u>Mfr.</u>	<u>Date Calib.</u>
Broadband Rod Antenna:	M 95010-1	0496	Advanced Electronics	----
Biconical Antenna:	BIA-25	2650	Electro Metrics	----
Conical Log-Spiral Antenna:	LCA-25	2886	Electro Metrics	----
Double Ridged Guide Horn Antenna:	RGA-180	----	EMD	----
Horn Antenna:	----	----	Toshiba	----
Spectrum Analyzer:	71210C	2927A0287	HP	97/08
External Mixer:	11970K	----	HP	97/08
External Mixer:	11970A	----	HP	97/08

#### 8. Frequency Stability

<u>Model</u>	<u>Type</u>	<u>Serial no.</u>	<u>Mfr.</u>	<u>Date Calib.</u>
Power Meter:	436A	2410A19137	HP	97/08
Power Sensor:	8481A	2349A39603	HP	97/08
Frequency Meter:	X532B	1441A00523	HP	97/09
Directional Coupler:	5D364S	R9425	Shimada	98/03
Dummy Load:	----	8411057	Shimada	98/03
Environmental Chamber:	PL-4E	1632712	Tabai Espec	98/02

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## 9. Suppression of Interference Aboard Ships

<u>Model</u>	<u>Type</u>	<u>Serial no.</u>	<u>Mfr.</u>	<u>Date Calib.</u>
Spectrum Analyzer:	71210C	2927A02847	HP	97/08
6 m Whip Antenna	14 k - 10 MHz	----	Furuno	----
4 m Whip Antenna	10 - 30 MHz	----	Furuno	----
VHF Whip Antenna	30 - 300 MHz	150M-W2UM	Anten	----
UHF Whip Antenna	300 - 1000 MHz	----	Anten	----
RF Vector Impedance Meter: 4815A		2048A03354	HP	97/09
Spectrum Analyzer	TR4172	30690116	Advantest	97/09
Spectrum Analyzer	8566B	2637A03642	HP	98/07