GENERAL INFORMATION

INDEX

1. General

One of the features of Global Maritime Distress/Safety System (GMDSS) is high reliability established by automatic and introduction of digital techniques.

The JSB-196GM MF/HF Radio System is designed for medium-distance communication. It completely satisfies the requirements that SOLAS/GMDSS must meet.

The Radio System consists of the MF/HF Radiotelephone, digital selective call terminal with a built-in watchkeeping receiver (DSC). It uses digitized information suited to automatic processing for distress/safety as well as general purpose communications.

It features ease of handling and operation, and demands no special techniques. Further, the self-diagnosis and module design assures easy maintenance and inspection.

1.1 SCOPE AND PURPOSE

The following technical data on the JSB-196GM Radio Equipment are submitted to the Federal Communications Commission for type acceptance under Part 2,15 and Part 80 of the Commission's rules and regulations.

1.2 JSB-196GM Composition

The JSB-196GM consists of the following units and attachments:

No.	Component	Part name	Quantity	Remarks
1	Radiotelephone	JSB-196GM	1	
1-1 Included Accessories				
1-1-1	Hand Set	NQW-213	1	
1-1-2	Power Cable	7ZCJD0043A	1	L=1m
1-1-3	Mounting screws	MPTG30762	1	
1-1-4	Plug	5JWGC00004	1	
1-1-5	Connector	5JJAJ00034	2	
1-1-6	Terminals	5JDAH00084	2	
1-1-7	Spare fuse	5ZFEX00013	4	40A
1-1-8	Instruction Manual	7ZPJD0124	1	English
1-1-9	Packing List	7ZPJD0130	1	
1-1-10	Register List	7ZPJD0065	1	
1-1-11	Return Envelope	6ZXJD00122	1	
2	DSC Terminal	NCT-196	1	
2-1 Included Accessories				
2-1-1	DSC Power Cable	7ZCJD0062	1	L=3m
2-1-2	DSC AF Cable	7ZCJD0071	1	L=1.5m
2-1-3	DSC Control Cable	7ZCJD0072	1	L=1.5m
2-1-4	Spare fuse	5ZFEX00012	2	3A
2-1-5	Instruction Manual	7ZPJD0120	1	English
2-1-6	Packing List	7ZPJD0127	1	
2-1-7	Bridge Card	7ZPJD0122	1	English
3	Antenna Tuner	NFC-196	1	
3-1 Included Accessories				
3-1-1	ATU Control Cable	7ZCJD0044A	1	L=5m
3-1-2	ATU RF Cable	7ZCJD0045	1	L=5m
3-1-3	Screw	BRTG03217	2	
3-1-4	Terminal	5JTCD00393	2	1.25-3
3-1-5	Terminal	5JTCD00001	2	2-3
3-1-6	Terminal	BRTE00395	2	5.5-3
3-1-7	Washer	BSFW06000B	2	W6Bs
3-1-8	Packing List	7ZPJD0126	1	

OPTIONS

No.	Component	Part name	Quantity	Remarks
1	DC-DC Converter	NBG-300	1	
2	Hand Microphone	NVT-133	1	Straight cable (L=5m)
3	Hand Microphone	NVT-140	1	Carl cable (L=0.4m)

2. TYPE NUMBER

TYPE	:	MF/HF RADIO EQUIPMENT
MODEL	:	JSB-196GM
FCC ID	:	CKE JSB-196GM

3. SPECIFICATIONS

3.1 GENERAL

Frequency range:	Transmit: 1.6 to 27.5MHz (100Hz steps) Receive: 0.1 to 29.9999MHz (100Hz steps)
Frequency tolerance:	Within ±10 Hz (after 1minute warm-up)
Emission mode:	J3E, A1A, F1B, H2B,H3E(Reception only)
User definable channels:	200ch (20ch X 10 Groups)
Preset ITU channels:	1693ch (SSB:283, F1B:891, A1A:519)
Communication mode:	Simplex and semi-duplex
Power requirement:	13.6V DC±10% (12.3V DC to 15.0V DC), negative-grounded Tx: 40A max Rx: 2A max (Operable between 10.2V DC and 16.2V DC)
Operating temperature:	-30 to +55°C (-15°C to +55°C during normal operation)
Dimensions and mass:	・JSB-196GM Mass : Appox. 7.4kg : 250mm(W) × 100mm(H) × 260mm(D) ・NCT-196 Mass : Appox. 4.8kg : 250mm(W) × 100mm(H) × 260mm(D) ・NFC-196 Mass : Appox. 3.3kg : 230mm(W) × 380mm(H) × 90mm(D)

3.2 RADIOTELEPHONE (JSB-196GM)

TRANSMITTER

Output power:	150 Wpep	
Occupied bandwidth:	J3E	3 kHz or less
	F1B, A1A	0.5 kHz or less
Carrier suppression:	J3E	40dB or more
Unwanted emission:	J3E: 28dB or more at 1.5 to 4.5kHz	
	35dB or more at 4.5 to 7.5kHz	
	62dB or more at 7.5kHz or more	
	F1B: 28dB or more at 0.25 to 0.5kHz	
	35dB or more at 0.5 to 1.25kHz	
	62dB or more at 1.25kHz or more	
Spurious suppression:	60 dB or more	
AF frequency response:	350 to 2700Hz (6dB bandwidth)	
Microphone input:	600 ohms dynamic microphone (-40 dBm standard)	
Line input:	0 dBm, 600 ohms (Balanced)	

RECEIVER

Sensitivity:	J3E	6.3 uV or less (1.6 to 4MHz)
		3.5 uV or less (4 to 27.5MHz)
	F1B	1.8 uV or less (1.6 to 4MHz)
		1.0 uV or less (4 to 27.5MHz)
Receiving system:	Triple superheterodyne	
Intermediate frequencies:	70.455MHz, 455kHz, 20.217kHz	
Selectivity:	J3E	6 dB bandwidth 2.4 to 3kHz,
		66 dB bandwidth within ±2.1kHz
	F1B	6 dB bandwidth 270 to 300Hz,
		60 dB bandwidth within ±550Hz
Spurious response:	40 dB or more	
Clarifier range:	±200 Hz (1Hz steps)	
AF output:	5.0W max. 1W rated	

3.3 DSC TERMINAL (NCT-196)

DSC

Protocol:	ITU-R Recommendations 493 and 541
Emission:	F1B/J2B 100 baud
Modulator frequency:	1,700Hz ± 85Hz
Output level:	+10dBm maximum at 600 ohms, balanced
Demodulator frequency:	1,700Hz ± 85Hz
Input level:	-20dBm to +10dBm at 600 ohms, balanced
Processor code:	10 units error detection specified by ITU-R Recommendation 493.
File Memories:	Call transmitting file: 11files
(Battery backup RAM)	General call receiving file: 20files
	Distress call receiving file: 20files

DSC WATCH-KEEPING RECEIVER

Receiving frequencies:	Six frequencies: 2187.5, 4207.5, 6312, 8414.5, 12577, and 16804.5kHz
Scanning:	(a) Scanning within two seconds of any frequencies selected from the following: 2187.5, 4207.5, 6312, 8414.5, 12577, and 16804.5kHz (b) Scanning stops on detection of 100 baud dot pattern.
Receiving system:	Double super heterodyne with the up-conversion system using a phase-locked digital frequency synthesizer. 1st IF:40.455MHz 2nd IF:455kHz
Reception mode:	F1B/J2B
Sensitivity:	The symbol error rate is 1×10^{-2} or less. (RF input level = 1 μV)
Selectivity:	6dB bandwidth: 270 to 300Hz 30dB bandwidth: within ±330Hz 60dB bandwidth: within ±550Hz
Frequency stability:	Within ±10Hz
Interference rejection and Brocking immunity:	The symbol error rate is 1×10^{-2} or less. Wanted signal: input level =10 μV, Unwanted signal: input level = 31.6mV, no modulation, variation range 9kHz to 2GHz (except wanted channel and its adjacent channel (±750Hz))
Adjacent channel selectivity:	The symbol error rate is 1×10^{-2} or less. Wanted signal: input level = 10 μV Unwanted signal: input level = 1mV, no modulation, offset frequency = ±500Hz

Conducted spurious emission:	The power emitted from the antenna terminal is 1nW or less.
Antenna impedance:	50 ohms, unbalanced

3.4 ANTENNA TUNER (NFC-196)

Frequency range:	1.6 to 30MHz
Power capability:	200 Wpep
SWR after tuning:	50ohms, SWR < 2
Tuning method:	Automatic tuning and preset tuning
Tuning time:	Automatic tuning: 1sec～15sec Preset tuning: 0.5sec～1sec
Operating temperature:	-30 to +60°C