TOSHIBA
Leading Innovation

NAVAIDS SYSTEMS
DVOR

- Toshiba's DVOR is designed based on the advanced technology.
- Toshiba's DVOR has more than a 50-year-history with a huge supply record of installations in domestic and worldwide airports.
- Toshiba's DVOR is continuing to contribute to the improvement in air traffic safety throughout the world.

Key Product Features

System

- Dual transmitters, monitors and power supplies
- Ergonomic design
- Color touch panel for local control
- Extensive BITE for fault isolation
- Front accessible plug - in modules for easy exchange
- Local and remote setup and control through a user-friendly PC program
- Flexible PC interface: local area network, serial link and modem link
- Optional battery backup with dual battery banks
- Recording operation events and equipment conditions
- Master and slave operation with associated DME (Distance Measuring Equipment)

Transmitter

- Good control of sideband waveform and phase through digital signal generation and separate SIN and COS sideband amplifiers
- Up to 100 W output power

Monitor

- Advanced digital design for high stability and accuracy
- Automatic continuous integrity testing
- Monitor and control by digital hardware
- Optional bearing monitor with two additional field antennas

Antenna System

- 48 sideband antennas
- VSWR monitoring on all antenna outputs
- Signal distribution unit consists of plug-in modules in main rack
- Optional separate signal distribution rack for mountaintop use

GENERAL CHARACTERISTICS

Type	Double Side Band
Output Power	25 to 100 W, Adjustable
Bearing Accuracy	±0.5 degrees
Spurious Attenuation	More than 60 dBc
DC Input Power	+40 to +56 VDC (battery nominal 48 V)
Power Consumptions	2.0 kVA (Normal operation)

ENVIRONMENTAL CONDITIONS

Ambient Temperature (Except COTS)	-10 to +55 ˚C (Indoor Equipment)
	-50 to +70 ˚C (Outdoor Equipment)
Relative Humidity (Except COTS)	Maximum 95%RH (up to +35 ˚C), Maximum 60%RH (up to +55 ˚C) (Indoor Equipment)
	Maximum 95%RH (Outdoor Equipment)
Wind Speed	Maximum 60 m per second (survival, standard)
	Maximum 90 m per second (survival, option)
Ice Load	Maximum 5 cm (survival)

CARRIER SIGNAL CHARACTERISTICS

Frequency Range	108 - 118 MHz
Frequency Stability	± 0.001%
Channel Spacing	50 kHz
Reference Frequency	30 kHz ± 0.01 %
Reference Modulation Depth	30 ± 1 %
ID tone Frequency	1,020 Hz ± 0.01%
ID tone Modulation Depth	4 to 20%, Adjustable (without voice)
	Maximum 10% (with voice)
Voice Modulation Depth	Maximum 30%

SIDE BAND SIGNAL CHARACTERISTICS

Sub-Carrier Frequency	9,960 ± 1 Hz
Sub-Carrier Frequency Stability	± 0.001 %
Modulation Frequency	30 Hz ± 0.01 %
Modulation Depth	30 ± 2%
Deviation Ratio	16 ± 1

FIELD MONITOR LIMIT

Bearing Error	±1 degree, Adjustable (Tolerance +0, -0.2 degrees)
Carrier Level	±3 dB, Adjustable (Tolerance ±0.1 dB)
AM Modulation Depth at 30 Hz	±15%, Adjustable (Tolerance ±0.1%)
AM Modulation Depth at 9960 Hz	±15%, Adjustable (Tolerance ±0.1%)
ID Modulation Depth	±50%, Adjustable (Tolerance ±1%)
No ID Period	10 to 120 seconds, Adjustable (Tolerance ±1 second)
ID Code	Mismatching
FM Deviation	±1, Adjustable (Tolerance ±0.1)

ANTENNA SYSTEM

Antenna Elements	48 + 1 Alford loop antennas
Field Monitor Antenna	1 Yagi antenna (edge type is optional)

APPLICABLE STANDARDS

ICAO Annex 10
EUROCAE ED-52
ISO 9001

TOSHIBA CORPORATION
Social Infrastructure Systems Company
http://www.toshiba.co.jp/sis/en/des/air/index.htm

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Toshiba Group contributes to the sustainable future of planet Earth.
TOSHIBA eco style