Toshiba Solid-State Weather Radar SSWR-S100D/SSWR-C100D series are high accuracy, high sensitivity, and high resolution Dual-Polarization Weather Radar for S/C-band, with Full Solid-State transmitter. As an industry leading Radar and Semiconductor manufacturer, Toshiba developed SSPA (Solid-State Power Amplifier) based weather radar by fusing radar data processing technologies with advanced world-class semiconductor technologies. Toshiba’s up-to-date Solid-State Weather Radar combines high performance and high quality, to realize improved observation accuracy and low lifecycle costs. Toshiba’s up-to-date Solid-State Weather Radar realizes greater accuracy by transmitting long pulse with high quality Dual-Polarization, which offers better accuracy compared with conventional radars such as Klystron radars. Due to its long pulse, the average power of 1 pulse produced by solid-state radar provides higher sensitivity than conventional radars. By using pulse compression technique, range resolution is higher than conventional radars. Both S-band and C-band types are available. With Toshiba’s experience of having many decades of manufacturing, social infrastructure, Toshiba will continue to contribute to maintain safety and security of society by manufacturing weather radar systems.

**System Advantage**

- Improved Observation - High quality Dual-Polarization data
- Low Lifecycle Costs - No need for replacement of high-cost Klystron transmitter
- Robust Design - Power Amp. Units can be made redundant
- Maintainability - Units can be exchanged without suspending system operation
- Downsizing - Half size of Klystron transmitter *1
- Efficient Frequency Utilization - Low Spurious Emission
- Tunable - Operational frequency is tunable even after installation

*1 Compared with Toshiba’s latest model of Klystron transmitter
## S-BAND C-BAND

### 1 SYSTEM
- **SSWR-S100D**
- **SSWR-S100D-H**
- **SSWR-C100D**
- **SSWR-C100D-H**
- **Frequency Range**: 2700-3000 MHz (Tunable) / 5300-5850 MHz (Tunable)
- **Maximum Operation Range**: ≥ 500 km
- **Sensitivity / Reflectivity @ 10dBz distance**: > 240 km > 300 km > 230 km > 290 km

### 2 ANTENNA
- **Antenna Diameter**: 8.5 m
- **Antenna Gain**: 45 dB
- **Beam Width**: 0.95°
- **Angular Span**: Azimuth: 0 - 360° continuous Elevation: -2 - 90°
- **Scanning Speed**: 0 - 6 rpm
- **Angular Positioning Accuracy**: < ±0.1°

### 3 RADOME
- **Diameter**: 12 m
- **Construction**: Sandwich Foam
- **Transmission Loss - one way, dry surface**: 0.2 dB

### 4 TRANSMITTER
- **Amplifier**: Full Solid-State type (GaN HEMT)
- **Peak Power - Total of 2 Transmitters(H/V)**: 10 kW 20 kW 6 kW 12 kW
- **Maximum Duty Ratio**: > 10 % (0.1:1)
- **Pulse Width**: 0.5 to 200 μs
- **Pulse Repetition Frequency (PRF)**: 100 - 20,000 Hz (Dual PRF)
- **Spurious Emission ±5MHz outside of Fo**: < -40 dB

### 5 RECEIVER / SIGNAL PROCESSOR
- **4 ch : 2 (Horizontal/Vertical) x 2 (High Level/Low Level)**
- **Noise Figure (NF)**: < 2 dB
- **Dynamic Range**: 100 - 20,000 Hz (Dual PRF)
- **Minimum Detectable Signal (MDS)**: < -114 dBm
- **IQ Data Exporting Transfer Rate (all range)**: > 2 Gbps

### 6 OPERATIONAL CONDITION
- **Temperature**: Outdoor : 20 - 55°C Indoor : 10 - 35°C
- **Humidity**: Outdoor : 95%RH or less (non-dew condensation at 35°C) Indoor : 75%RH or less (non-dew condensation at 35°C)
- **Power Characteristics**: 200 V, 3 phase
- **Wind Load - gusting**: 80 m/s

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