

DTR100 THEORY OF OPERATION

- Frequency Band

DTR100 operates in the 118 – 136.975 MHz band.

- Modulation Scheme

The equipment uses Double Side Band (DSB) Amplitude Modulation (AM) full carrier:

6K80A3EJN for 25 kHz,
5K00A3EJN for 8,33 kHz

The equipment is designed to operate with a channel separation of 8,33 kHz or 25 kHz.

- Occupied Bandwidth

3 dB Bandwidth is:

± 3.4 kHz from the carrier for 25 kHz
 ± 2.5 kHz from the carrier for 8.33 kHz

The filtering of audio signals to meet required specifications is implemented by use of DSP-based filters within DTR100 BB module

- Frequency Synthesis

The transceiver allows the change of frequency in the whole band. Two different circuits synthesises the frequency reference, one for transmission and one for reception functions. The frequency reference of both TX and RX functions is derived from a single reference source.

- Antenna Connections

DTR100 can operate both with one antenna connection (RX and TX with internal RF coaxial switch), or with separated connections

- Audio interface

DTR100 can be modulated both locally and remotely.

For local operation, a headphone with PTT button is provided for connection on the front of the equipment.

For remote operation, DTR100 uses a 4WE&M interface, located on the rear side of the equipment. E wire is used for PTT activation, while M wire is used for Squelch output

DTR100 Principle of working

