NAVIGATOR DT Dual Transceiver All-Outdoor Licensed Microwave Gigabit Radio

NAVIGATOR DT is a dual-transceiver all outdoor, IP radio operating from 6GHz to 42GHz, modulations to 4096QAM, and ultra-wide bandwidth operation to 112MHz ETSI and 160MHz ANSI. NAVIGATOR DT can achieve capacities up to 5.5Gbps per radio without compression.

Each NAVIGATOR DT transceiver supports dual sub-carriers resulting in up to four sub-carriers per dual transceiver radio to increase capacity without requiring any additional equipment.

NAVIGATOR DT also includes XPIC and MIMO frequency re-use technologies to double and quadruple capacity using a single licensed channel. XPIC and 2x+0 operation are supported using just a single radio.

NAVIGATOR DT is easily and inexpensively field convertible to different sub-bands via user friendly customer replaceable diplexers. Sparing only needs to include the base radio resulting in no longer a need to spare radios in specific sub-bands.

NAVIGATOR DT is an ideal, highly integrated all-outdoor radio for the most demanding applications.

Performance
- Up to 5.5Gbps per radio using quad sub-carriers without compression
- Dual transceivers with each transceiver supporting single carrier or dual sub-carrier operation to efficiently increase capacity without adding any more equipment
- QPSK to 4096QAM
- Ultra wide bandwidth operation to 160MHz ANSI and 112MHz ETSI
- 2x (1+0), 1+1 HSB, 2+0, 2x2 HSB, and 4+0 operation
- XPIC supported using a single dual transceiver radio
- LOS 4x4 MIMO to quadruple capacity and 2x2 MIMO to double capacity using only a single license
- Space Diversity and Frequency Diversity available
- Built-in Advanced Digital Pre-Distortion to drive higher transmission performance
- Customer replaceable diplexers to ease operational logistics and improve system flexibility
- Built-in OMT or coupler to combine carriers from each transceiver
- Different frequencies supported in single dual carrier radio (e.g. 6GHz and 11GHz)
- Adaptable antenna interface supports third party antennas to ease migration and upgrade
- Header and payload compression to further increase capacity
- 2 x 10GbE Ethernet interfaces (optional)
- 2 x CPRI interfaces (optional)
- SyncE and IEEE1588v2
- AES256 encryption
- No-touch WiFi maintenance interface (optional)
- GPS antenna (optional)
- Time based feature licensing available

Applications
Whatever your business or the goals for your network infrastructure, EtherFlex Navigator can play a critical role in backhaul performance, reliability, and security.
- 4G/5G backhaul
- Fiber extension
- Fiber backup
- Leased line replacement
- Small cell backhaul
- Campus connectivity
- Disaster recovery
# NAVIGATOR DT DUAL TRANSCEIVER

## Features

**Data Throughput Rate**
- Up to 5.5Gbps per radio using quad sub-carriers or 3Gbps per radio using two carriers without compression

**Configurations**
- 2 x (1+0), 2+0 ACAP/ACCP, 4+0 ACAP/ACCP, 1+1, 2+2, 2+0 XPIC, 2 x (2+0) XPIC, 2x2 MIMO, 4x4 MIMO, 1+0 SD, 2+0 SD, 1+0 FD

**Frequency Range**
- 6-42GHz

**Modulation**
- QPSK to 4096QAM

**Air Interface**
- Full Duplex FDD

**Channel Bandwidths per Carrier**
- 10-160MHz ANSI and 7-112MHz ETSI

**Diplexer**
- Customer replaceable

**Frequency flexibility**
- Different frequencies supported in single dual carrier radio (e.g. 6GHz and 11GHz)

**Tx Power (diplexer output)**
- Up to 27dBm with Built-In Advanced Digital Pre-Distortion

## Interfaces

**Ethernet**
- 1 x 1G RJ45 (POE), 1 x 1G SFP
- or
- 1 x 1G RJ45 (POE), 1 x 1G SFP, 2 x 1/2.5G SFP (CPRI capable)
- or
- 1 x 1G RJ45 (POE), 1 x 1G SFP, 2 x 1/10G SFP+

**CPRI**
- 2 x CPRI (Modes 2, 3, and 4 - 1228.8Mbps, 2457.6Mbps, and 3072.0Mbps)

**Console**
- USB serial port
- WiFi for no-touch maintenance (optional)

**Ethernet Features**
- IPv6, IPv4
- L2- 16K MAC Addresses
- 4096 VLAN (IEEE 802.1Q) with 1024 VLANs supported concurrently
- VLAN tag translation on ingress or egress
- Provider Bridging (IEEE 802.1ad, Q-in-Q)
- RSTP / MSTP
- Radio Link Aggregation

**Ethernet Compression**
- Interface Gap and Pre-Amble Suppression, Header Compression, Payload Compression

**QoS Packet Classification**
- DiffServ (RFC 2475)
- VLAN PRI (IEEE 802.1Q-2003)
- MAC PRI
- Port Priority
- Port Number, Protocol
- MPLS PRI

**QoS Packet Scheduling**
- Port – Weighted Round Robin (WRR)
- Logic Port (cluster) – Weighted Fair Queuing (WFQ) or Strict Priority (SP)
- Priority Queue – WFQ, Strict Priority
- 8 priority queues per logical port/queue

**QoS Congestion Avoidance**
- Two-rate / three color marking, WRED, Policing, Flow-Control (PAUSE packets, back-pressure)

**QoS Traffic Shaping**
- Configurable

**Protection**
- ITU-T G.8032 Ring

**Encryption**
- AES256

**OAM**
- ITU-T Y.1731, IEEE 802.1ag, 802.3ah, Radius, Syslog

**MEF Compliance**
- MEF9 Services Test Suite, MEF14 Traffic Management Test Suite

**GPS**
- Advanced timing and MIMO operation (optional)

## Mechanical and Environmental

**Input Power Requirements**
- -48 VDC direct DC or PoE (-36 VDC to -60 VDC range)

**Weight**
- 9.2kg (20.3lbs) including internal OMT or coupler (2+0 configuration)

**Size**
- 23.9cm x 23.2cm x 12.5cm (9.42"x9.12"x4.94") not including antenna nose or handle

**Operating Temperature**
- -33°C to +55°C (-27°F to +131°F) per ETS 300 019-2-4 Class 4M5

**Humidity**
- 5%-100%

**Weather**
- IP67 / All Weather

**Safety**
- IEC 60950-1, -22

**Regulatory**

## Note:
Specifications are typical and subject to change without notice.

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Dual transceiver NAVIGATOR DT can include a built-in OMT or coupler to combine channels to a single antenna port.

Navigator DT is optionally available with two waveguide ports.

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