

## Trinity-323 TDD

Provides robust, high-speed links to far away locations

Operating in the 5 GHz unlicensed band at a data rate up to 245 Mbps aggregated throughput, the Trinity-323 TDD is designed to reliably transport your data, voice and video communications in virtually any environment – high-interference and long-range line-of-sight paths, over water and open terrain, even in extreme weather conditions.

### TDD based software

Trinity-323 uses TDD technology to emulate full duplex traffic over a half duplex communication link. The radio link operates symmetric or asymmetric and optimizes the link for low latency. The proprietary TDD-based protocol greatly reduces the impact of long distances compared with other technologies.

By using TDD based technology we enhance and strengthen the link against interference.

### TDD Synchronization

Using the Repeatit SyncMaster-300, radio synchronization with GPS can be done with superb performance. Both together or separate between units at one or several Point to Point and Multipoint sites, also possible.

### TDD Multipoint support

Trinity-323 TDD can be configured to run multipoint with up to 16 clients.

In multipoint mode 16 timeslots are allocated and each client can be assigned 1-8 slots. For example using four clients, the clients can be assigned 8-4-2-2 timeslots getting 50/25/12.5/12.5% of the capacity.

### High interference resistance

Trinity-323 TDD uses advanced interference resistance techniques to assure excellent operation in harsh conditions in licensed or unlicensed bands.

Combined with OFDM, Trinity-323 TDD uses MIMO 2x2 and antenna diversity technology to achieve wireline speeds over radio. The built in antenna is dual polarised to achieve either higher throughput with dual streams or better link budget with single stream.

### Configurable QoS

Trinity-323 TDD uses four transmit queues to prioritize traffic, the classification is based on DiffServ and/ 802.1p. The classification is configurable to give the user full freedom of how the traffic should be prioritized.

5 Ghz

### Product Highlights

- 245 Mbps aggregated throughput
- Up to 80/20 assymetrical traffic
- 5.150–5.845 GHz
- 23 dBi Dual Polarized antenna
- TDD Synchronization
- TDD Multipoint support (up to 16 units)
- Variety of channel widths: 5/10/20/40 MHz
- Build-in RF ESD/Surge protection
- Easy alignment with LED
- Advanced spectrum analyser
- QoS: Four traffic classes prioritise traffic
- Free Network Management

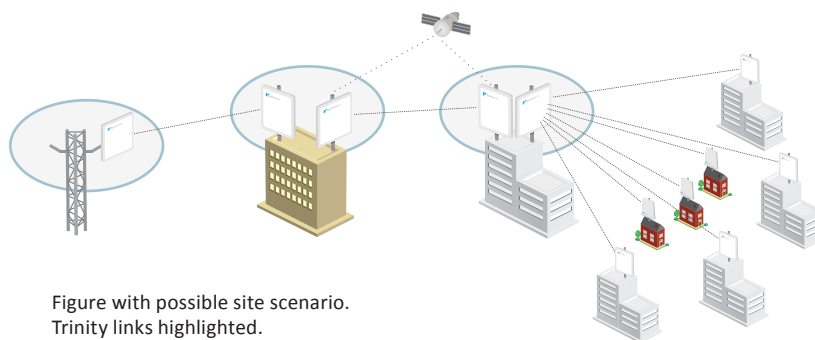


Figure with possible site scenario. Trinity links highlighted.



## Trinity-323TDD Plus

### Radio

Frequency Bands	5.150–5.845 GHz
Channel widths supported	5/10/20/40 MHz
Capacity	Trinity-323TDD Plus: 245 Mbps Trinity-323TDD: 105 Mbps
Duplex Technique	TDD
Modulation	OFDM, PSK/QPSK/16QAM/64QAM
Max Tx Power	23 dBm
Max Rx sensitivity	-97 dBm
Error Correction	FEC; k=1/2,2/3,3/4, 5/6
Encryption	128 bit AES & MAC level Authentication
Surge Protection	15kV
Antenna Protection	Internal DC Grounding
DFS	Yes
QoS	Four Access Categories (AC) Voice, Video, Best Effort, and Background Traffic classification according to WMM
Bandwidth control	Yes

### Inbuilt Antenna

Gain, typ.	24 ± 1 dBi
VSWR	1.7 : 1
3 dB Beam-Width, H-Plane, typ.	7°-9°
3 dB Beam-Width, E-Plane, typ.	7°-9°
Polarization	Dual, Vertical and Horizontal Dual slant if mounted plus/minus 45°
F/B Ratio	ETSI, TS3, TS4, TS5
Cross Polarization, max	-25 dB
Port to Port Isolation	-30 dB

### Ethernet Interface

Type	10/100/1000 BaseT Interface with Auto-negotiation (IEEE 802.3), Manual
Number of Ethernet Ports	1
Framing/Coding	IEEE 802.3u
Traffic Handling	MAC layer bridging, self-learning 802.1q transparent
Data Latency	2-4ms (3ms typical)
Packets/second	> 40 000
VLAN ID for Management	Supported
Power over Ethernet	48V DC, 802.3af, <6W typical
Connector	RJ-45

### Management

Link Management	Web interface
Protocol	SNMP
NMS Application	Repeatit Cloud Network RCS Management Service
Tools in web interface	Spectrum Analyser Speed Test

### Environment

IP Code	IP67
Temperature	-40° / +55° C
Size	370 x 370 x 95 mm
Weight per unit	4 Kg

### Electrical

Gain, typ.	24 ± 1 dBi
VSWR	1.7 : 1
3 dB Beam-Width, H-Plane, typ.	7°-9°
3 dB Beam-Width, E-Plane, typ.	7°-9°
Polarization	Dual, Vertical and Horizontal Dual slant if mounted plus/minus 45°
F/B Ratio	ETSI, TS3, TS4, TS5
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Distance	Trinity-323TDD	Trinity-323TDD Plus
< 1 km	105 Mbit	245 Mbit
2 km	103 Mbit	243 Mbit
3 km	102 Mbit	242 Mbit
4 km	101 Mbit	240 Mbit
5 km	93 Mbit	193 Mbit
6 km	93 Mbit	192 Mbit
7 km	62 Mbit	128 Mbit
8 km	61 Mbit	128 Mbit
9 km	60 Mbit	127 Mbit
10 km	60 Mbit	127 Mbit
15 km	40 Mbit	83 Mbit

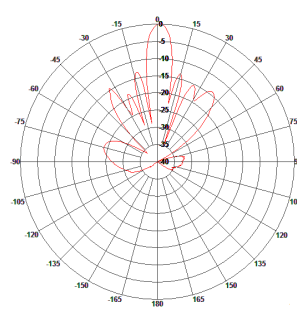
Throughput UDP, 30dB max ETSI EIRP, 6dB margin

### Radiations Patterns

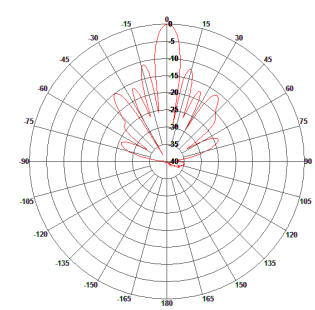
Frequency 5300 MHz  
Gain, typ. 24 ± 1 dBi

#### Vertical Polarization

E-Plane Pattern

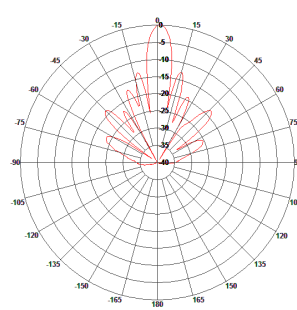


H-Plane Pattern



#### Horizontal Polarization

E-Plane Pattern



H-Plane Pattern

