ZCOMAX WIRELESS
Your Wireless Network Connection

RCP TDMA EXPLAINED

TDMA

TIME DIVISION MULTIPLE ACCESS (TDMA)

Understanding TDMA Differences

Many wireless devices have “claimed” TDMA support. Surprisingly not all TDMA implementations are equal.

How TDMA is implemented on a wireless devices will have a significant effect over how well a wireless link will perform, especially when concerning long distance links.

For the sake of clarifying what we support and claim we have divided up our TDMA implementations into two groups. TDMA and TDM coordination. In the next few slides the differences will be shown.

TDMA Vs. TDM coordination

TDMA – a reliable protocol developed and owned by Intel specifically for improving the performance of long distance links. This protocol was adopted to be used for our RCP product line in order to provide long distance links with improved throughput and stability.

TDM Coordination – We as well as many other companies have implemented this simple but effective variant of TDMA in order to help customers improve performance on short to mid range networks that may have performance issues such as hidden node problems. This is what many of our competitors may refer to when claiming TDMA support.

RCP TDMA IMPLEMENTATION

- TDMA Protocol designed by Intel and implemented in the Zcomax RCP product line.
- Specially designed for long distance Peer-to-Peer connections
- Each transmitting station is assigned a time slot.
- Time slots are allotted by self-coordination so that a master device is not needed.
- Solves collision problems inherent of implementing long distance wireless networks.
- Allows for point to point links and relay links that can reach 100km and sustain greater than 7Mbps of throughput.*

* Actual distances may vary depending on installation and environmental factors.

What is TDM Coordination?

- Allows for multiple wireless devices to share the same wireless medium by assigning active devices time slots
- TDM coordination is a useful protocol to overcome problems such as packet collisions due to hidden node problems
- The benefit of TDM coordination over just using CSMA can be seen in weak CPE's where performance and improved throughput can be seen.
- Implemented on AP in order to allot each CPE's throughput

Case Study using RCP TDMA

(44km Point to Point Link)

1 / 1

Distance		44km	
Weather		Sunny	
Site in Taiwan		Dongshan Seacoast	Lai Lai Nose
Altitude		28m	35m
GPS information	longitude	N 24° 37'36.1"	N 25° 01'17.4"
	latitude	E 121°51'7.0"	E 121°59'10.0"

Case Study using RCP TDMA

(44km Point to Point Link - Results)

2 / 2

Model	Test Picture	TDMA	Throughput / Mbps
Z-Com RCP R1E/R2E		PtP TDMA	21Mbps
		PtP CSMA	< 1 Mbps

What are the advantages of the RCP TDMA protocol?

- TDMA protocol designed by Intel specifically for long distance wireless networking links.
- TDMA is more suitable than CSMA for long distance applications where high throughput efficiency is important.
- Ready Now! Field proven TDMA protocol is fully tested and functional
- Spanning longer distances before not possible allows for overall lower equipment overhead costs.