



## Contrail® ALERT2™ TDMA Manager™

Visualize and design your network, tracking capacity, available capacity, and data latency

### HIGHLIGHTS

- Manage and design one or more networks in a controlled workspace
- Aids in the proactive planning of your network capacity and demands
- QA/QC verification optimizes transmission capacity
- Real-time tracking of live network and ability to create "what if" alternative network designs
- Visibility of other agency's networks
- Reduces potential for conflicts or mistakes
- Import and export network designs

Time Division Multiple Access (TDMA) is a frequency use protocol in which each transmitter is assigned specific times to transmit so that two transmitters on the same frequency do not transmit at the same time, and eliminates data loss due to more than one transmitter on a frequency talking at the same time. ALERT2 supports both the ALOHA and TDMA transmission protocols, but preferably uses the TDMA protocol to reduce or eliminate data loss.

#### Why use Contrail ALERT2 TDMA Manager?

Contrail ALERT2 TDMA Manager provides multi-user shared access via web interface and enables information sharing that reduces potential for conflicts or mistakes. It gives a complete view of your infrastructure in one place. Multiple agencies can share access.

Contrail ALERT2 TDMA Manager features **Capacity Planning** and **QA/QC Verification** – ensuring the optimization of transmission capacity across all parts of the network. It provides a controlled workspace so that users for an agency can edit/maintain agency TDMA designs, and can see, but cannot edit other agency TDMA designs.

# ALERT2™ TDMA Terminology

## GENERAL TERMS

## DESCRIPTION

ALOHA	ALOHA is a frequency use protocol in which transmitters transmit at any time when they have something to say, and can potentially collide with other transmissions and lose data. The probability of success of ALOHA transmissions can be calculated, assuming that all transmissions are random. ALERT uses the ALOHA transmission protocol. ALERT2 can use the ALOHA transmission protocol, but preferably uses the TDMA protocol to reduce or eliminate data loss.
Frequency	A specific radio frequency (RF) is a resource used by ALERT and ALERT2 for both transmission and receive of signal. Frequency is usually defined in terms of MHz and is divided into 0.0250 MHz ranges.
ALERT Frequency	An ALERT frequency is shared by many transmitters which transmit ALOHA messages, and have potential for collisions and data loss.
ALERT2™ Frequency	An ALERT2 frequency used for TDMA is defined by a frame length, block length, and slot lengths, that is divided into TDMA slots, which are then allocated to transmitters on the frequency.
Network	A network is a combination of frequencies, receivers, transmitters, transceivers used for ALERT and/or ALERT2. A network serves one or more agencies.
Receiver	Base Station, receives on one or more radio frequencies.
Transmitter	Transmits on a single radio frequency.
Transceiver	Is comprised of both a receiver and a transmitter. A transceiver receives on one or more radio frequencies and transmits on a single radio frequency. They typically are repeaters that listen to data content on their receiver, and then retransmit that content on their transmitter.
Frame Length	Frame Length is used to define the transmission repeat for transmitters on a frequency. For example, a transmitter on a 20 second frame would have an assigned TDMA slot with a predefined offset from the top of the frame, and be able to transmit every 20 seconds.
Block Length	The block size is the minimum time interval possible for an ALERT2 transmission. In the ALERT2 specification, it is 250 milliseconds (ms), and is the smallest time that can be used for subdividing a frequency's frame into individual TDMA offsets and slots.
Slot Length	It is the allocated division of time for a transmitter within a TDMA plan for a frequency. This is one or more whole units of block length. The TDMA plans we currently have use 500 milliseconds as the standard slot length, which with ALERT2 allows up to 75 bytes of information to be transmitted.

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**OneRain**  
The Rainfall Company

T: 303-774-2033  
Toll Free: 800-758-RAIN (7246)  
Email: sales@onerain.com  
www.onerain.com



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