



VANTIVA MULTI-CLIENT SOLUTIONS PRODUCT OVERVIEW



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Revision Record			
Revision	Date	Revision Editor	Revision Description
1.0	8/25/2023	Angelo Peruch	First draft separation of Product and Installation

1 INTRODUCTION

This document describes the Vantiva COM3000 product line. It is intended to provide detailed product specifications. Used in conjunction with the Vantiva COM3000 Integrator's Manual, the reader should have a full understanding of the product and installation procedures. It is recommended that you read both documents before working with the system.

This manual assumes reader is familiar with the following:

- DirecTV standards for MFH2 satellite installation
- National and Local Electric Codes
- Industry standards for RF coaxial distribution
- Networking skills including IGMP networking of multicast video streams.

2 INTENDED USAGE

COMMERCIAL USE This product is designed to go into areas that are not accessible to the public at large and are not for home use. Technicolor COM3000 Products provide Head-End systems for distribution solutions for the DIRECTV Commercial and Lodging and Institutions (L&I) markets. Installation should only be performed by trained personnel.

Warning

Class 1 Equipment. This equipment must be earth grounded. The power plug must be connected to a properly wired earth ground socket outlet. An improperly wired socket outlet could place hazardous voltages on the accessible metal parts.

IT Room warning message:

Suitable for installation in Information Technology Rooms in accordance with Article 645 of the National Electrical Code and NFPA 75.

RAL warning message

The device can only be used in a fixed location such as a lab or a machine room. When you install the device, ensure that the protective earth ground connection of the socket-outlet is verified by a skilled person.

Note to System Installer

Section 820-93 of the National Electric Code, which provides guidelines for proper grounding, specifies that the Coaxial cable shield shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

3 COM3000 PRODUCT OVERVIEW

A COM3000 system consists of the following components:

- COM400/421 chassis
- COM51D tuner cards (maximum of six per chassis)
- QAM4 modulator (maximum of two per chassis)



COM400 with QAM4 and COM51D

4 COM400

The chassis has slots to accept six COM51D and two QAM4 cards to tune up to 138 DIRECTV channels.

- Requires 3 RU rack space.
- Internal layer two managed ethernet switch supporting IGMP.
- This supports multiple COM51D cards simultaneously outputting multicast streams. It is not intended to be a network core switch.
- Two 1Gb and two 10Gb ethernet ports.
- All ports support auto-negotiating per IEEE802.3-2015 specification.
- Multiple COM400 chassis can be networked together.
- COM51D and QAM4 cards are assigned default IP addresses per slot in chassis and chassis number.
- Internal power supply.
- MTFB (Mean Time Before Failure) >43,800 hours (five years).

5 COM421



COM421 with QAM4 and COM51D



COM421 External Power Supply

The COM421 chassis is designed for lower channel count installations, and Flexitone.

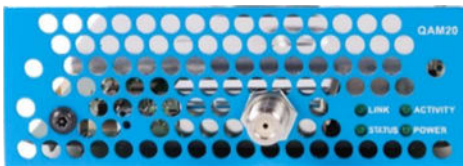
- Chassis slots to accept two COM51D cards and one QAM4 for a maximum of forty-six channels.
- Requires 1 RU rack space.
- External AC/DC power supply
- Two one gigabit ethernet ports
- Unmanaged backplane ethernet switch
- Not configurable for multiple chassis installation
- MTFB (Mean Time Before Failure) >43,800 hours (five years)

6 COM51D



- Tunes 23 DIRECTV channels.
- Output transport stream is encrypted with the Pro:Idiom digital rights management (DRM) by default.
- Configurable to output clear HD signal with DIRECTV approval.
- Available standard definition channels may be unencrypted.
- Supports Pro:Idiom Mobile encryption.
- Viewing encrypted programming requires a Pro:Idiom enabled TV or set top box.
- Content output is MPEG2 transport, routed to the QAM4 modulator and/or directly to the chassis ethernet ports.
- Advanced Program scheduler can be programmed to change existing channels in the lineup to unique events and returns to original programming when event is completed.
- Web server user interface requires an ethernet connection to a computer.
- Dual IP allows for local management via the default IP and will allow DHCP address assignment.
- Requires a DSWiM30 output to both RF connectors (one DSWiM30 per COM51D card)

7 QAM4



- QAM4 outputs 4 QAM carriers out of box
- Software upgradable to 48 QAM carriers
- Full 38.8 Mbps per QAM carrier capacity
- Agile output channel assignments
- Outputs 32 dBmV +/- 2 dBmV
- Up to 3 HD DIRECTV channels on each carrier.
- Easy to use setup

Note: The COM system is not a transcoder and cannot change in-band signals such as closed captioning. These services are passed through the COM3000 system as received from the DIRECTV downlink.

8 ADDITIONAL FEATURES

In addition to high quality DIRECTV programming, the COM3000 system offers additional powerful features:

8.4 MEDIATUNE



- Optional Mediatune software upgrade offers switched matrix control capabilities for public space environments.
- Software controls the COM51D, routing programming to one or several TVs from a single tuner.
- Simple “drag and drop” webserver interface effortlessly manages TV channels in a bar, restaurant, or casino.
- Select a channel and drag it to a TV!

8.5 FLEXTUNE

Optional Flexitone allows an IP endpoint to directly control a tuner in the COM51D. Allows access to all channels in the customer’s DIRECT package using a 1:1 ratio of TVs to COM51D tuners.

Flexitone is available only on IP systems.

Uses the multicast IP address assigned to each DIRECTV channel to set the programming on a COM51D tuner.

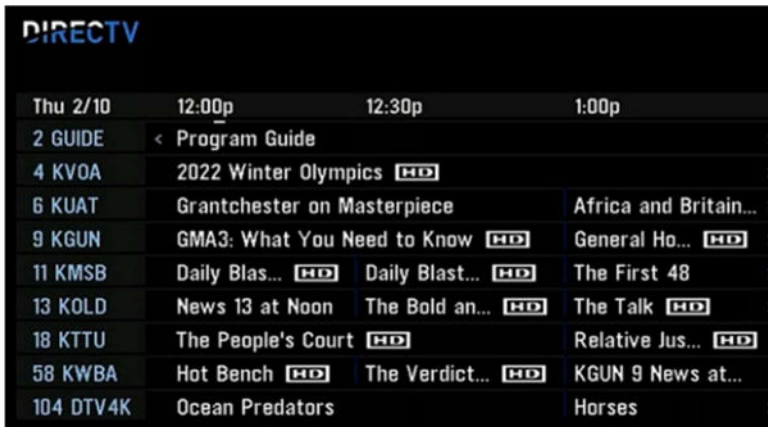
Examples:

226.101.**0.4** will tune an unused tuner to DIRECTV channel 4 and steam to the end device requesting that multicast IP.

226.101.**2.06** will tune DIRECTV channel 206.

226.101.**2.45** will tune DIRECTV channel 245.

9 EPG



Thu 2/10	12:00p	12:30p	1:00p
2 GUIDE	< Program Guide >		
4 KVOA	2022 Winter Olympics HD		
6 KUAT	Grantchester on Masterpiece	Africa and Britain... >	
9 KGUN	GMA3: What You Need to Know HD	General Ho... HD >	
11 KMSB	Daily Blas... HD	Daily Blast... HD	The First 48 >
13 KOLD	News 13 at Noon	The Bold an... HD	The Talk HD >
18 KTTU	The People's Court HD	Relative Jus... HD >	
58 KWBA	Hot Bench HD	The Verdict... HD	KGUN 9 News at... >
104 DTV4K	Ocean Predators	Horses >	

- A customizable electronic program guide (EPG) displays channel lineup and local programming.
- PSIP data will pass to televisions and “map” the channels without intervention.
- PSIP interpretation is TV dependent.
- Guide.XML works in conjunction with Vantiva UCW4026MCS set-top boxes to provide an interactive program guide for DIRECTV AEP systems.
- Advanced guide works with UCW4060MCS.

10 PREMIUM SPORTS SCHEDULER

COM51D has a scheduling program which automatically tunes set programming channels to event channels based on specified search criteria.

The scheduler will search for event programming based on the following criteria:

Program Categories
 Day of week
 DIRECTV program channel

Program Titles
 Time of day

11 EXTERNAL CONTENT

External devices, such as outboard video encoders can stream to the Vantiva QAM4 Modulator:

- Hotel Channels
- Welcome Videos
- HDMI out from a PCs

12 EMERGENCY ALERT SYSTEM

Emergency Alert Systems (EAS) Integration. The system will output any MPEG2 transport stream sent to port 25600 to all QAM RF outputs. MPEG2 TS can be from an outboard EAS device, locally generated A/V encoder or multicast stream.

13 POWER COMSUMPTION

Typically, a fully loaded COM400 chassis draws <200W.
 COM421 < 150W.

14 COMPATIBILITY WITH PREVIOUS HARDWARE

- COM400/421 chassis will support COM46 cards but not QAM6.
- COM51D Cards will work in COM360 Chassis
- A COM46 will only show the first 12 QAM carriers on the QAM20 / QAM4.
- A COM360 can only stream 1 Gb to a QAM20 / QAM4.

Both models use the similar external case



AEP Set Top Box



AEP remote

COM SYSTEM COMPATIBILITY MATRIX		Chassis		
		COM200	COM360	COM400
Receiver Cards	COM24	✓	✓	✗
	COM46	✓	✓	✓
	COM51	✗	✓	✓
QAM Cards	QAM6	✓	✓	
	QAM20	✗	✗	✓

15 VANTIVA SET TOP BOXES

Vantiva manufactures the UCW4026MCS and the UCW4060MCS set top boxes for exclusive use with the DIRECTV Advanced Entertainment Platform. DIRECTV creates the software and provides product support.

The STBs support both IP Multicast and QAM tuning.

Interactive Program Guide (guide.xml)

Supports Pro:Idiom Mobile decryption.