

RACKMOUNT QUANTUM AUDIO CODECS IN OB VANS

INTRODUCTION

Although all Quantum audio encoders can work in OB vans, there are two models that are ideally suited for this purpose.

These devices are the Quantum ST DUO LTE and the Quantum MC. These devices have a number of common features that make them ideal for installation in mobile units, where space and connectivity limitations are decisive factors.:

- They are 1U (1 rack unit) devices but can transmit more than one stereo channel.
- They have 2 Ethernet interfaces which they can use in redundant mode for their transmissions.
- They include an interface to which Prodys HG2 series antennas can be connected. These outdoor antennas provide 4 or 8 3G/4G/5G telephone connections.

The latter increases the connectivity possibilities of a mobile unit and can dispense with costly satellite or microwave links for audio communications.

Prodys has the most advanced technology to make the most of dedicated or shared IP networks (Internet) and to avoid the inherent drawbacks of IP technology, such as the lack of synchronism in the sending of IP packets. This is achieved thanks to the BRAVE proprietary transmission protocol which allows, among other things:

- Management of an automatic reception buffer capable of adjusting to the lack of synchronism to achieve the lowest possible delay.
- Error correction by forwarding lost IP packets.
- Establishment of redundant connections to ensure transmission integrity in unreliable networks.
- Real-time monitoring of communications locally and from Master Control.



WORKING MODES

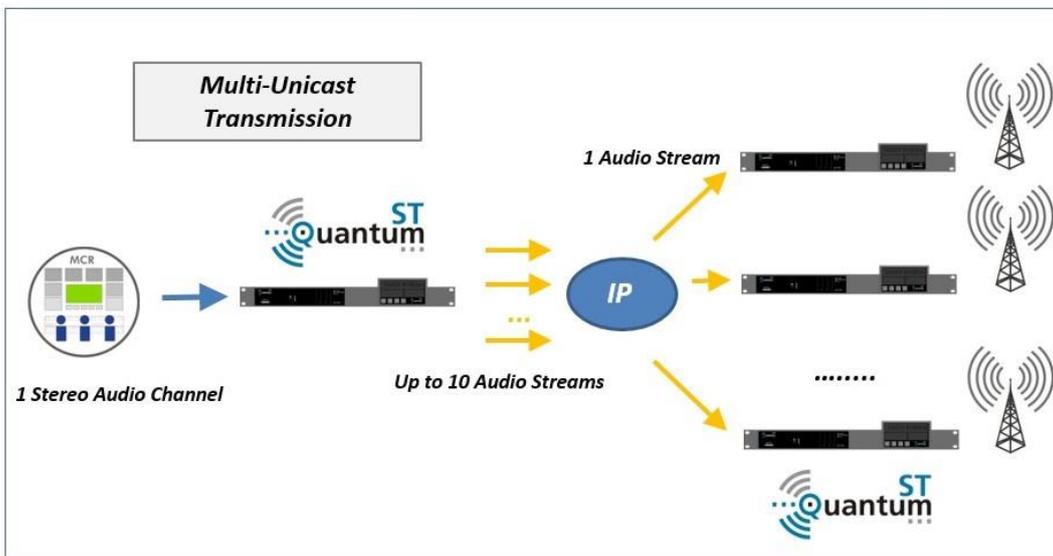
In addition to these tools available in the BRAVE protocol, Prodys Quantum devices have different working modes that make them very flexible in adopting different network topologies:

Point-to-point mode

It allows audio to be sent from one point to another, in one or both directions, using the IP unicast protocol.

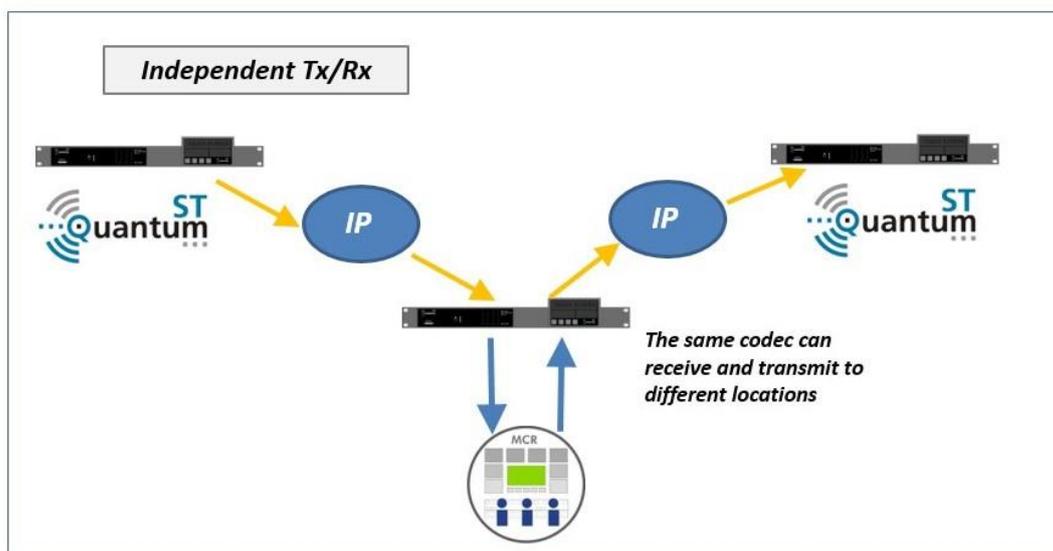
Point-to-multipoint mode

It allows the same audio program to be sent from one location to up to 10 different destinations, unidirectionally, using the proprietary Multi-Unicast protocol. On dedicated lines it is possible to use the Multicast protocol for transmission to any number of destinations.



Independent TX/RX mode

It allows the same codec to send audio to one destination and receive audio from another. This configuration allows for greater savings in the number of equipment required and greater flexibility in contribution networks.



QUANTUM UNIS FOR OB VANS

Quantum ST Duo LTE

This audio codec allows the encoding and decoding of two stereo signals independently. It has analogue, digital and AES67 (optional) inputs and outputs.



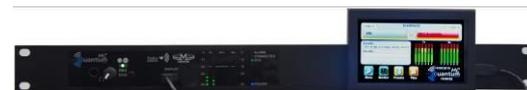
This equipment has a Lemo connector on its rear side that allows it to be connected to a Prodys HG2 series radome, by means of which it is possible to expand the two Ethernet interfaces available with 4 or 8 3G/4G/5G connections.



Quantum MC

It is a multi-channel IP codec that allows the transmission of 5.1 audio signals (i.e. 6 mono audio in phase) synchronised over the Internet between two devices.

Equally, this product could be used as an efficient two-way channel for 6-voice/audio between two production centres



The Quantum MC model has AES67 audio interfaces, either Dante or Ravena.

Like the Quantum ST Duo LTE model, the Quantum MC has a Lemo connector on the back for connection of an HG2 radome, providing 4 or 8 3G/4G/5G connections.



HG2 communications module

The Ikusnet HG2 module is a wireless communications module that can contain 4 or 8 3G/4G/5G modems with their respective high gain antennas. It is used to extend the number of IP connections available to Prodys Quantum or Ikusnet equipment with this capability.

HG2 is made of fibreglass and its watertight design allows it to work outdoors, installed on the roof of an OB van.

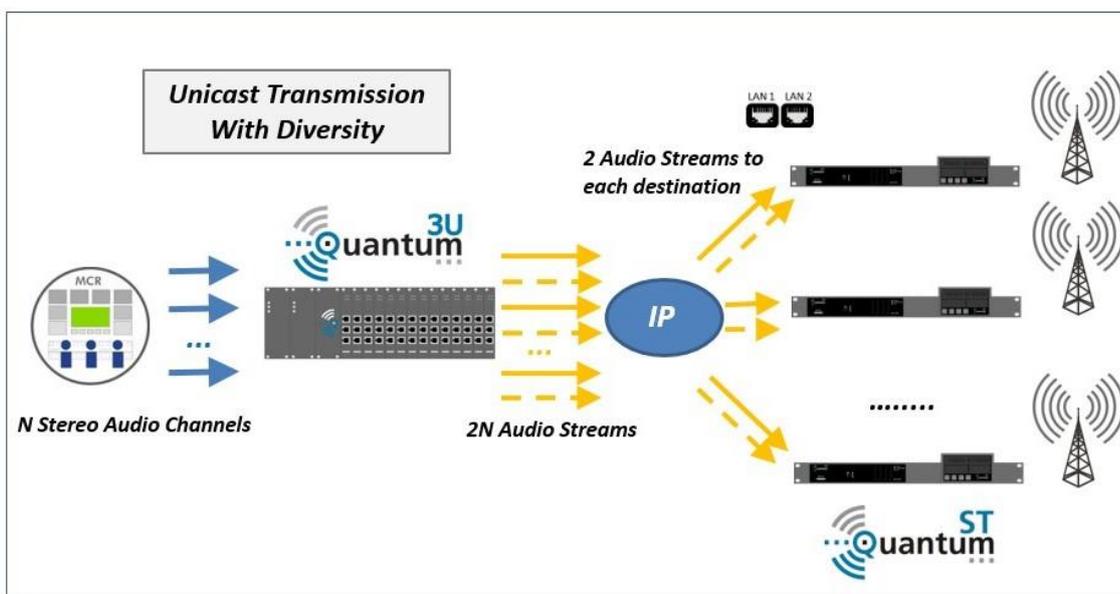


REDUNDANCY IN THE CONNECTIONS

When planning an audio link, it is important to ensure secure and high-quality communication. A great advantage in this respect is to have as many redundant elements as possible, without increasing the cost. Some of these elements contribute to secure transmissions:

Connection

The Quantum ST and Quantum MC have two Ethernet ports that allow them to transmit and receive the audio stream over two different networks, in what we call Diversity mode. In this mode, the audio stream is duplicated and sent by each interface, so that every IP packet has a copy sent by another path, so that a packet loss in one of the interfaces is easily corrected by the packets sent by the other. The great advantage of this way of working compared to more traditional backup solutions is that it does not affect the quality of service as there is no interruption in the outgoing audio.



Redundant Power Supply

All units, except the QLST, have the possibility of installing a redundant power supply that would switch automatically in case of failure of the main power supply.

Two Audio Outputs in parallel

In equipment with different types of audio outputs, audio is always available on all outputs in parallel, whether they are analogue, digital (AES/EBU) or AES67 outputs.

MAIN FEATURES OF QUANTUM RACKMOUNT CODECS

	QLST	QUANTUM ST	QUANTUM ST DUO	QUANTUM ONE	QUANTUM 3U	QUANTUM MC
Form factor						
19" half rack	●					
19" rack		●	●			●
19" rack modular				● (1U)	● (3U)	
Protocols & applications						
BRAVE: 1x stereo /mono	●	●	●	●	●	●
BRAVE: 2x stereo			●	●	●	
BRAVE: 5.1 (6 ch mono)						●
SIP: 1x stereo /mono	●	●	●	●	●	
SIP: 2x stereo			●	●	●	
RTP: 1x stereo /mono	●	●	●	●	●	
Streaming protection						
BRAVE: Diversity	●	●	●	●	●	●
BRAVE: FEC	●	●	●	●	●	●
BRAVE: Active Recovery	●	●	●	●	●	●
SIP: FEC (RFC2733)	●	●	●	●	●	
SIP: Diversity Streaming EBU3368	●	●	●	●	●	
Streaming interfaces						
Audio over 1x LAN	●	●	●	●	●	●
Audio over 2x LAN	●	●	●	●	●	●
Audio over 4x 3G/4G			●			●
Audio interfaces						
Analog inputs	1x st	1x st	2x st	8x st	28x st	
AES3 digital stereo input	●	●	●	●	●	
USB digital stereo audio	●	●	●			
Headphone output		●	●			●
AES67 / DANTE / Ravenna		●	●	●	●	●
Compression Algorithms						
OPUS	●	●	●	●	●	●
Enhanced Aptx	●	●	●	●	●	●
Uncompressed (16, 20, 24bit)		●	●	●	●	●
G.711		●	●	●	●	●
G.722	●	●	●	●	●	●
MPEG L2	●	●	●	●	●	●
MPEG-4 AAC LC, LD, HE, ELD		●	●	●	●	
Management						
Touch panel	●	●	●			●
Web Browser	●	●	●	●	●	●
ProdysControlPlus	●	●	●	●	●	●
Powering						
VAC	●	●	●	●	●	●
Redundant VAC		●	●	●	●	●
● Standard		● Option				