Video over Bonded Cellular Save <u>+\$250K/year</u> by eliminating your Satellite, ENG or Mobile Productions Truck



Webinar May 7, 2015

by Jim Jachetta Executive VP & CTO VidOvation Corporation Moving Video Forward





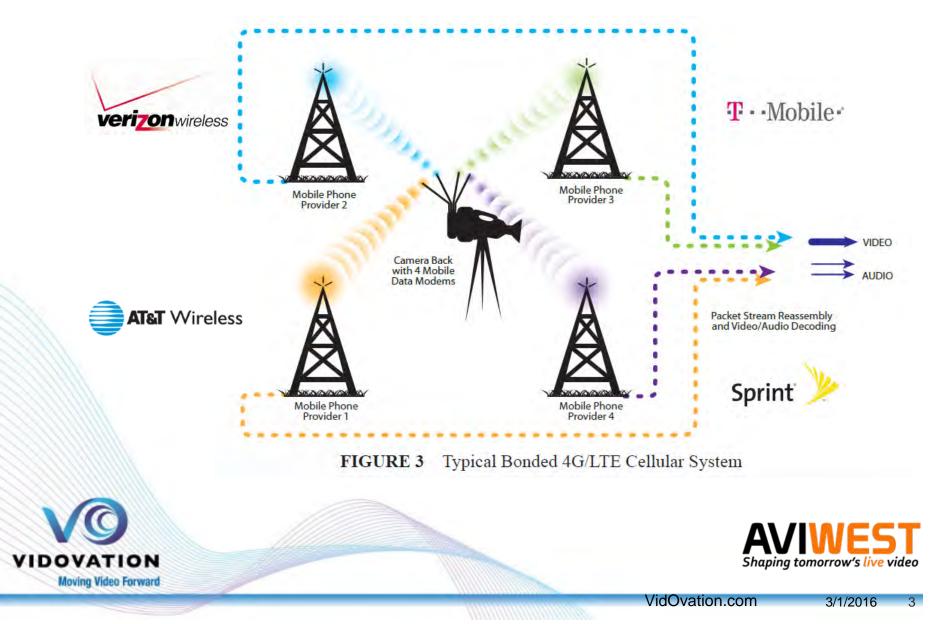


How do we easily broadcast live video from anywhere in the world without a technical crew?

- No Satellite Truck!
- No ENG Van!
- No Mobile Production Truck!



Live Video via Cellular, WiFi, BGAN & LAN



Powerful Dedicated Hardware Platforms

- No heavy PC in a backpack,
- Compact and lightweight.
- Hardware platforms
- High reliability & high MTBF

- Low power consumption
- Unparalleled mobility,
- Perfect for breaking news
- Live event coverage & sports



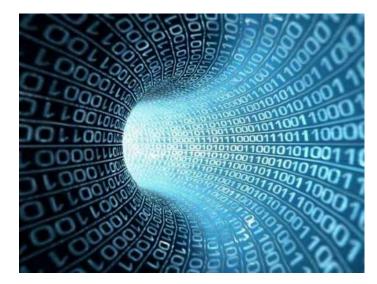




3/1/2016

Cutting Edge Video Encoder

- AVIWEST Team is composed of engineers from high-tech companies
- Specialized in video, multimedia, and embedded electronics
- Grass Valley, Ericsson Television, Canon, and Sagem,
- More than 100 years of cumulative experience
- Providing their customers with superior video quality.







Cutting Edge Video Encoder

- Best viewer Quality of Experience (QoE)
- Best-in-class encoder that compresses video while adjusts to the real-time characteristics of various bonded networks analyzing their bit rates, and delays.
- Video resolutions and frame rates can be automatically setup according to a perceived video quality model.







High Performance Bonding Algorithm

- Detecting and aggregates multiple IP-based networks such as 3G, 4G, WiMax, Wi-Fi, Ethernet, satellite
- Global expansion of wireless connectivity enables broadcasters to transmit live from anywhere with cellular coverage
- High-performance algorithms automatically senses and bonds together all possible outlets of IP connectivity
- Provides broadcasters with the biggest pipe to transport their video content.







Radio Frequency Efficiency

- High-quality uplink transmission
- Custom high-gain antennas
- Maximizes energy transmitted by modems based on CDMA and LTE frequencies and bandwidth.
- VSWR (Voltage Standing Wave Ratio) is tuned to obtain best-in-class RF efficiencies
- Compensates for the operation of multiple modems in close proximity

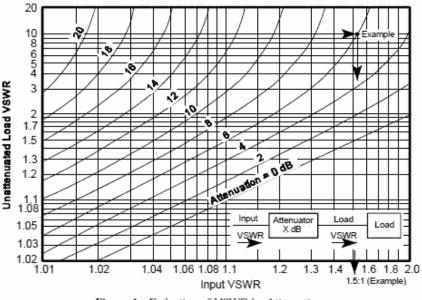


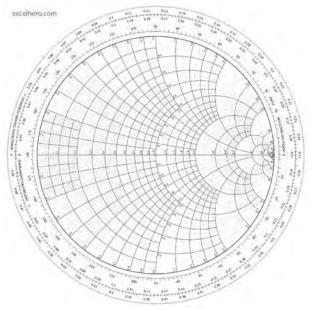
Figure 1. Reduction of VSWR by Attenuation





Radio Frequency Efficiency

- Antennas compensate for the coupling effect between antennas by increasing the isolation between elements.
- Optimized using state-of-the-art RF simulation software tools
- Industries best performance using antenna simulation, RF analysis equipment, and periodic measurements in anechoic chambers
- Solutions are guaranteed to operate optimally, in any conditions, at all times.







SAR Compliance

- The Specific Absorption Rate (SAR) measures the rate at which energy is absorbed by the body when exposed to a radio frequency (RF) electromagnetic field.
- FCC requires wireless communication devices to have a SAR level at or below 1.6 Watts per Kilogram (W/Kg) taken over a volume containing a mass of 1 Gram of human tissue.
- European Union standards (EN 62209-2-2010) the SAR limit is 2 W/kg averaged over 10 Grams of human tissue.









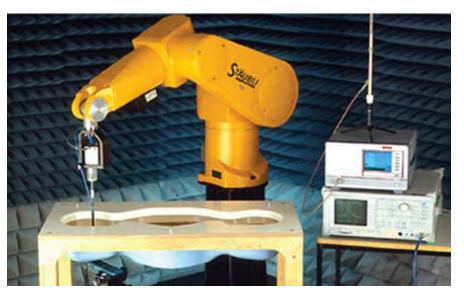


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SAR Compliance

- AVIWEST is committed to ensuring that its solutions successfully pass the SAR measurements and can be safely used while touching the body.
- All solutions have passed SAR measurements performed by an approved European laboratory.
- Reports are available upon request.







AVIWEST Solutions

Mobile Video Hybrid Contribution Systems

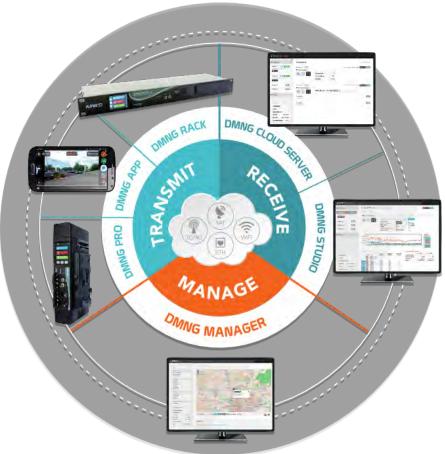
Transmitters

- Portable Versions: DMNG PRO Series
- Rack-mounted Versions: DMNG RACK Series
- Smartphone Applications:
 DMNG App

Receivers

DMNG STUDIO

Network Management System



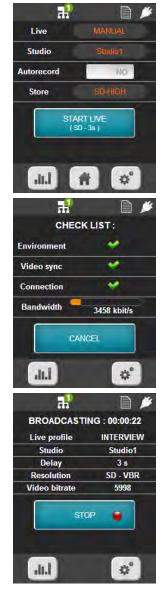




AVIWEST Solutions

The world's most advanced portable bonded 3G/4G, Wi-Fi, Satellite & Ethernet video uplink family designed for news gathering, sports and live television application

- Main Functions
 - Live & Auto-record
 - Store & Forward
 - Progressive Store & Forward
- **Product Line Comprising:**
 - DMNG PRO180-RA (8 X Internal 3G/4G Modems)
 - DMNG PRO140-RA (4 X Internal 3G/4G Modems
 - DMNG PRO110 (10 X External 3G/4G Modems
 - DMNG PRO100 (Portable Encoder)







DMNG PRO 180RA

The world's most advanced portable bonded 3G/4G, Wi-Fi, Satellite & Ethernet video uplink family designed for news gathering, sports and live television application

Key Features

- 8 internal modems (3G or 3G/4G)
- 8 high efficiency cellular antennas
- 8 MCX connectors for 2 quad external antenna
- 2 USB slots (2 additional modems)
- Internal Wi-Fi modem & antenna
- Video inputs: SDI, composite, HDMI
- Dual video encoders
- Battery plates: V-Mount, Anton Bauer, PAG
- Interfaces for tally & IFB
- SD card slot (record)

Options

- Backpack
- 2 x quad antenna
- DMNG REMOTE app







DMNG PRO 140RA

The world's most advanced portable bonded 3G/4G, Wi-Fi, Satellite & Ethernet video uplink family designed for news gathering, sports and live television application

Key Features

- 4 internal modems (3G or 3G/4G)
- 4 high efficiency cellular antennas
- 4 MXC connectors for quad external antenna
- 2 USB slots (2 additional modems)
- Internal Wi-Fi modem & antenna
- Video inputs: SDI, composite, HDMI
- dual video encoders
- battery plates: V-Mount, Anton Bauer, PAG
- Interfaces for tally & IFB
- SD card slot (record)

Options

- Backpack
- 1 x quad antenna
- DMNG REMOTE app







DMNG PRO 140RA

The world's most advanced portable bonded 3G/4G, Wi-Fi, Satellite & Ethernet video uplink family designed for news gathering, sports and live television application

Key Features

- 10 USB slots (10 USB modems)
- Video inputs: SDI, composite, HDMI
- Dual video encoders
- Battery plates: V-mount, Anton Bauer, PAG
- Internal battery
- Interfaces for tally & IFB
- SD card slot (record)

Options

- Backpack
- Optional external Wi-Fi antenna
- DMNG REMOTE app







DMNG PRO 100

Light Portable Video Encoder

Key Features

- 2 USB slots (2 USB modems)
- Video inputs: SDI, composite, HDMI
- Dual video encoders
- Battery plates: V-Mount, Anton Bauer, PAG
- Interfaces for tally & IFB
- SD card slot (record)
- Options
 - Backpack
 - Optional external Wi-Fi antenna
 - DMNG REMOTE app







DMNG RACK Series

Rack-mounted Advanced Hybrid Contribution Video Encoders for Ka + Cellular Transmissions

Main Functions

- Live & Auto-record
- Store & Forward
- Progressive Store & Forward

Product Line Comprising:

- DMNG RACK180 (8 x internal 3G/4G modems)
- DMNG RACK100 (no modem)



QUAD Antenna

Quad External Wideband Cellular Antenna

Designed for extra-strong 3G/4G signal resiliency in critical conditions for live video transmission

Applications:

- News, Satellite, ENG & Mobile Production Trucks
- Vehicles or motorcycles
- Remote locations with weak cellular signals
- Areas with high cellular congestions



DMNG PRO & DMNG RACK Certifications

ESD

EN 55022 EN 61000-4-2 EN 61000-4-3 EN 61000-4-4 EN 61000-4-5 EN 61000-4-6 EN 61000-4-11 RADIO

R&TTE 1999/5/CE (EN 300 328)

SAR (Specific Absorption Ratio) EN 62209-2 1999/519/EC

SAFETY EN 60950-1

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DMNG PRO Certification

SAR (Specific Absorption Ratio)

Measure of the rate at which energy is absorbed by the body when exposed to radio frequency electromagnetic field

DMNG PRO SAR Measurement in 3G/LTE/WIFI	Highest SAR value W/Kg
3G-HSUPA (900 and 2100MHz)	0.795
LTE band 20	0.454
LTE band 7	0.624
LTE band 3	0.373
Wi-Fi (2450 MHz)	0.015
Apple iPhone 5 (for comparison)	0,901

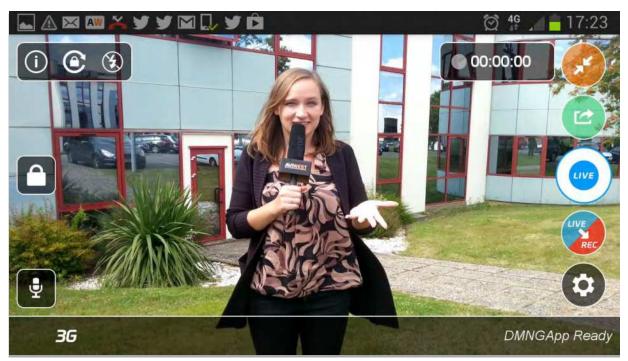
- SAR limits within the EU, following IEC standards is 2 W/kg average over 10g of human tissue (IEC 62209-1)
- The DMNG PRO are certified compliant with the European and North American SAR limits which is mandatory by law.





DMNG APP - What's New?

Live, Store & Forward Smartphone Application



- Android 4.0 and Later
- iOS
- Integrated with DMNG Manager & DMNG Studio





DMNG STUDIO

Receiver for DMNG Units

- Receive and decode up to 4 live streams from 4 units in the field
- Record and play back files
- IFB REMOTE application (4 independent 2-way audio channels)

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DMNG Manager

Network Management Platform

Main Functions

- **Resource allocation** ٠
- Geolocation •

+ DMNG

- System monitoring •
- **Remote unit configuration** •

Map List Gnd

Firmware upgrades •

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VIDOVATION

Moving Video Forward

DMNG-RUPIL Live in progress ... 0h 3m

+ DMN

History

2014-07-29 09:58:31 DMMG-PRC connected (DMMG-RUPIL

45 DMNG PRO connected (DMNG RUPIL



DMNG Manag	e
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Search

PRODUCTS DMNG App

DMNG Pro DMNG Studio STATUS Online ✔ Offline Disabled ✓ Live Forward Record

GROUPS France 2

France 3 ✓ TF1. ✓ iTele MISCELLANEOUS History

Connected studios

Connected devices

Manager users

IP Public

IP Local 1

IP Local 2

ID

Firmware version



Мар

> DMNG

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DMNG

DMNG

2

12

1

109.26.189.2

192.168.1.51

08:00:27:0d:ea:56

10.0.2.15

0.2.1

2000

List Grid

Grid
Grid

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1 DMNG-RUPIL X	DMNG-PRO	France 2 • Save	LIVE	online
2 iPhone 🗙	DMNG-APP	iTele 🔹 🗸 Save	FORWARD	online
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TF1

TF1

TF1

TF1

France 3

History

2014-07-29 08:59:45 DMNG-PRO connected (DMNG-RUPIL)



DMNG-APP

DMNG-PRO

DMNG-PRO

DMNG-PRO

DMNG-PRO

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Live

offline

offline

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offline

Action -

A DMNG Manager

List

Grid



PRODUCTS

Search

DMNG App DMNG Pro

DMNG Studio

STATUS

Online

Offline

Disabled

Live

Forward
 Record

GROUPS

France 2
 France 3

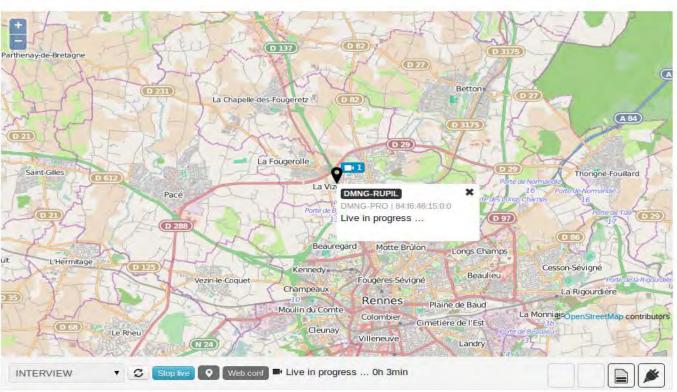
TF1

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MISCELLANEOUS

History

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History

2014-07-29 09:58:31 DMNG-PRO connected (DMNG-RUPIL)



AVIVEST Shaping tomorrow's live video

International Services

International Services Based on a Network of more than 120 Partners in over 6 Continents



- Local rental service
- Local support

VIDOVATION

Moving Video Forward

International roaming SIM rental







BFM TV in Sochi BFM TV (France). Live form Sochi with DMNG PRO180 - Feb 14







TeleMedellin (Colombia) cover breaking news with a DMNG PRO180

TeleMedellin - Colombia - Oct 13

VIDOVATION Moving Video Forward





Mediatec (Norway) - Oslo Marathon Mediatec (Norway) covers a Marathon with a DMNG PRO180-RA and a QUAD installed on a Quad







CTC - Hong Kong Seven - 3 CTC (Hong Kong) use DMNG PRO180 during Hong Kong Seven rugby tournament







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Krönotek - Live from helicopter - DMNG PRO - QUAD Live from an Helicopter - Kronotech (Guadeloupe Island - Caribbean)









Jamuna TV (Bangladesh) JAMUNA TV (Bangladesh) deploys AVIWEST DMNG PRO180-RA and QUAD antenna to cover floods in remote areas



Major European Customers

VIDOVATION

Moving Video Forward



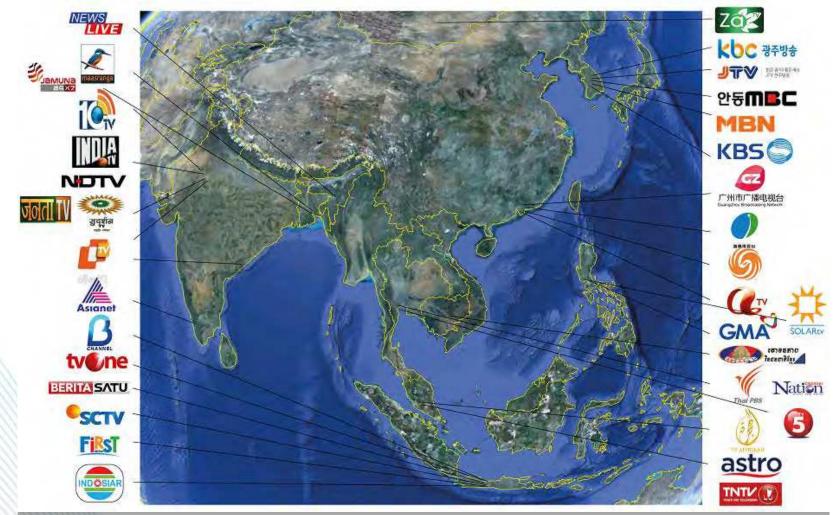


Major Customers Middle East & Africa



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Major Customers Asia







Major Customers Latin America

Moving Video Forward





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Conclusion

• Save more than \$250K per year

- Eliminate the need for expensive transmission equipment
 - No Expensive Telecomm Circuit
 - No Satellite Truck
 - No ENG Van
 - No Mobile Production Truck
 - No Engineer or Camera Operator required
 - Quick and Easy Operation with One Person
 - Talent can operate and shoot with a tripod
- Broadcast Live from virtually any location in the world
- Choose AVIWEST
 - Europe's #1 Bonded Cellular Video Uplink manufacturer
- Choose VidOvation
 - Premier wireless video system manufacturer & provider
 - Manufactured & Support NHL Wireless In-Net Goal Camera





About AVIWEST

- Established in September 2008 by engineers coming from Thomson, Envivio and Tandberg Television (Ericsson)
- Headquarters in Rennes, France; Office in Hong Kong; VidOvation Master Distributor in USA
- 50 Employees & Consultants
- 25 R&D and Engineering personnel
- Core Business and Technologies
 - Live Video Hybrid Contribution Platforms
 - Bonded 3G/4G, Wi-Fi, Satellite and Ethernet
 - Broadcast & On-line Media Markets:
 - TV Stations and Networks
 - Video Service Operators
 - New Agencies
 - Sports & Live Events
 - Federal and Local Government, Home Land Security, Department of Defense, Military and more...







About VidOvation

- Who is VidOvation?
 - VidOvation is a Video, Audio & Data commutations manufacturer and provider
 - Customers include Broadcasters, TV Networks, Sports Leagues & Enterprise IT Departments
- We help those who are:
 - **<u>Frustrated</u>** with dropout when using wireless video systems
 - **<u>Confused</u>** about which video transmission technology to use
 - <u>Struggling</u> to balance encoder latency and their budget when it comes to video networking and IPTV
 - Irritated with interruptions when streaming video over the internet
- Are you or any one you know struggling with any of these issues?





Partial Client List?

ABC/Disney Network News Bell Canada BellSouth/AT&T Cablevision **CBS Network News CBS** Network Television CityCenter Las Vegas CNBC CNN **Connecticut Department of Transportation** Department of Defense Department of Justice Eurovision FOX Digital FOX News Channel Globecomm GSA – General Services Administration Hard Rock Hotel & Casino Intelsat General Corporation KNBC комо KRIV Level 3 Communication (VYVX) MGM Resorts Minnesota Department of Transportation MSG Network NASA Naval Air Warfare Center

NBC News 12 Long Island NFL – Carolina Panthers NHL - National Hockey League Nickelodeon PanAmSat (Intelsat) Pentagon Remote Briefing Center SPAWAR SPRINT Storz – Karl Storz Endoscopy Stryker TCI Cable The Department of Transportation **Time Warner Cable Turner Broadcasting Tyler Perry Studios** TV Globo **United Space Alliance** United States Air Force United States Army **United States Capitol Visitors Center** United States Navy **United States Navy Newport News Universal Studios** VegasHD Verizon / MCI Viacom WABC WCBS WGN **WNBC**



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Question and Answer

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