

# Software Driven Radio

for future proof installations

## Key Attributes

- MPEG-2 SD/HD Encoding:
  - 4:2:0 and 4:2:2 profiles are standard
- Ethernet I/O for FTP IP File Transfer & Remote Control
- Color Bar Generator
- DVB-T COFDM Modulation
  - QPSK, 16QAM, and 64QAM
- DVB-S Modulation
  - QPSK, 8PSK, 16QAM
- DVB-S2 Modulation
  - Option 1: QPSK, 8PSK
  - Option 2: QPSK, 8PSK, 16APSK, 32APSK
- Single Carrier Modulation;
  - QPSK, 16QAM, 32QAM, 64QAM
- IP to ASI Encapsulation
- VSB Modulation
- IEEE 1394 "Firewire" Video streaming input
- HDV compatible



Front Panel USB 2.0 Port for Field Upgrades

The MTX5000 ENG Mobile Transmitter is a software defined radio that supports simple download and deployment of enhancements and updates. No longer will new features require significant downtime and complex re-configuration. Now changes can be completed in a matter of seconds.

The MTX5000 moves well beyond simple ASIC based encoding and modulation. This platform uses advanced ARM micro-processor controlled FPGAs so that upgrades can be rapidly installed and enabled. For example, installing a state of the art High Definition encoder upgrade is as easy as plugging in a portable USB drive and confirming the upgrade serial number.

MRC has led the ENG industry in technological innovation - from the first twin carrier fixed radio to the first COFDM system. Now with the MTX5000 MRC delivers the ultimate in long term value that is designed to meet the changing needs of broadcasters for years to come.

## 2 GHz BAS Optimized

### Standard Features for BAS Transition:

- Analog FM Modulation
- COFDM DVB-T Modulation
- Standard 2K Carrier Mode
- RNH Optimized LMS-T Modulation
- Robust LDPC Error Correction
- Fully inter-operable with MRC & LINK MaxRC diversity receivers
- MPEG-2 SD Encoding (HD Optional)

# Next Generation ENG

designed for the world's toughest jobs . . .

## Adjustable Viewing Angle

The adjustable front panel lets you easily assess and modify transmission status



## User Friendly Keypad

Robust backlit ergonomic design that takes abuse in the field

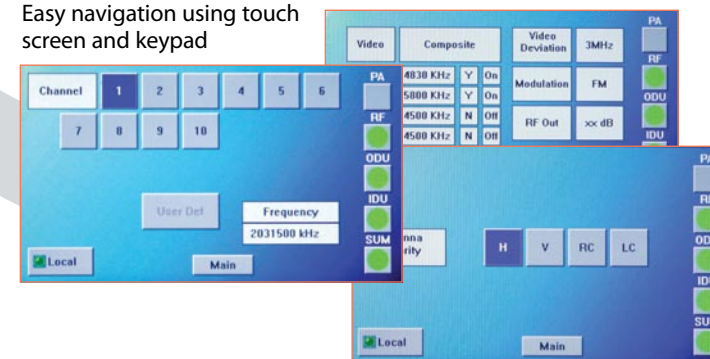
## Front Panel Interfaces

USB for remote control and rapid firmware updates  
IEEE1394 for HDV camera support



## Intuitive Menu System

Easy navigation using touch screen and keypad



## Customizable Display

Access to advanced features with control to meet your specific needs



## RF & Antenna Control

- CodeRunner 2™ Compatible
- Dual RF Output
- Antenna Selection
- Antenna Polarization

## Standard features

- SD Encoding with DVB-T COFDM
- Selection of 2 Antennas
- Front Panel "Touch Screen" GUI with tilting screen
- Advanced Local/Remote Control via a Real Time Operating System (RTOS)
- Front panel USB 2.0 and optional IEEE-1394 ports
- 92 programmable presets, 8 permanent factory installed presets
- NTSC/PAL video or SDI Digital
- DVB-S Modulation
- LMS-T Modulation
- Digital COFDM operation provides:
  - 6 Watts at 2 GHz
  - 2.5 Watts at 7 GHz (QPSK mode)
- High Power Analog FM operation provides 12 Watt output at 2 GHz and 5 Watts at 7 GHz
- Front Panel Display and Keypad for operating parameters and system conditions

# Features

for Next Generation ENG

## Video

- SDI/HD-SDI Input
- Composite Baseband
- Analog Video Input
- IF Monitor
- ASI Inputs
- IF Input

## Service

- Wayside Serial Port
- Summary Alarms
- ATPC Option
- IP Data Return Link
- 10/100 TCP/IP

## Audio

- Analog Audio Channels (4)
- AES/EBU (Embedded Audio)
- AC-3



## Microwave Radio Communications

101 Billerica Avenue Bldg 6  
North Billerica, MA 01862-1256 USA  
Tel: 1-978-671-5700

1-800-490-5700  
Email: sales@mrcbroadcast.com  
Web: www.mrcbroadcast.com

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www.mrcbroadcast.com

a Vislink company



## MTX5000 ENG Mobile Transmitter

HD  
DEFINED  
IP



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# Next Generation News Gathering

- The industry's first software defined ENG mobile transmitter
- Future proof platform that is software upgradeable in the field-without a PC
- Control RF, Encoding and Modulation from the studio for cost effective news gathering
- Empowers ENG teams to setup and react fast to breaking news stories
- Works seamlessly with MRC's News Gateway platform

Television news gathering is undergoing its most radical transformation since videotape replaced film. Industry leading broadcasters now demand more than just high definition digital transmission - they require non-linear storage, remote ENG control from the studio, and easy integration of advanced features.

In response to these changes, MRC has developed the MTX5000 to be the broadcasting industry's most advanced and feature rich video transmission system, and the only true software defined SD/HD microwave transport. MTX5000 brings you next generation news gathering, today.



# Go Live

while sending edited stories

IP traffic destined for the studio is encapsulated and multiplexed into the same bit stream that carries real time ASI from the internal MPEG SD/HD encoder. In addition, using MRC's single carrier QAM modulator, you can achieve throughput rates approaching 60 Mbps in a 12 MHz BAS channel.

MRC's advanced News Gateway provides IP connectivity over multiple wide area network pathways to support file transfer and remote van management. The News Gateway has full Ethernet router functionality with VPN tunneling and eight Ethernet switch ports. A WiFi connection may also be activated to provide seamless local WLAN connectivity.

## MRC News Gateway™

### Bi-Directional IP Gateway

- Full featured IP Router
- 900 MHz and 2 GHz DRL Support
- EVDO, GSM and Wi-Fi interfaces available
- GPS based location services

## tapeless news acquisition

## MTX5000™

### ENG/OB Mobile Transmitter

- The industry's first software defined ENG mobile transmitter
- Future proof platform that is software upgradeable in the field
- Control RF, Encoding and Modulation from the studio for cost effective news gathering
- Works seamlessly with MRC's News Gateway platform

MTX5000 can accept SDI, HD-SDI, embedded/de-embedded audio, ASI, composite video, RS-232, and T1 data. Audio input options include AES/EBU, analog, and pre-encoded AC-3.

MTX5000 accepts IP traffic for transmission over the ENG path to the studio using UDP or TCP/IP protocols. An integrated router manages all aspects of IP traffic flow.

# Gather News

from multiple sources

## diversity receive

The DRS4000 Diversity Receiver provides enhanced video coverage from airborne, portable, or wireless cameras.

## DRS4000™

### Digital Diversity Receiver

- Supports up to 6 antennas
- Maximum Ratio Combining for ultra sensitive reception
- Includes ENG optimized LMS-T demodulation
- HD encoding available

At the Central receive site, an MRX4000 Plus receiver demodulates the DVB-T/COFDM signal to the ASI level, so that the combined video and IP traffic may be passed through to the studio. The MRX4000 Plus also provides a local SDI signal and an available HD-SDI output option.

## Central Receive

## DAR Plus™

### High Capacity Digital Radio

- QPSK, 16QAM, 64 QAM Modulation
- Standard & High Power Options
- Models for 2 to 15 GHz Bands

## SCM4000™

### Single Carrier Modem

- Simultaneously supports ASI channels plus auxiliary data
- Data Rates up to 155 Mbps
- Remote Control & Monitoring

## MRX4000 Plus™

### Integrated Analog/ Digital Receiver

- SD / HD Decoding
- Remote Network Control

# Manage & Direct

from studio to remote ENG

## IP de-encapsulation

At the studio, several options are available. For HD/SD operation, deploy an SCM4000 demodulator in combination with a DVC4000 SD/HD decoder with integral IP de-encapsulator.

If SD only operation is anticipated, and an SCM4000 demodulator/decoder is already in place, the only addition would be an MRC IPRX de-encapsulator to separate IP traffic from the ASI and make it available through an RJ-45 10/100 interface. The IPRX includes a powerful built-in web browser control system that allows quick and easy set up of all IP parameters.

## IPRX™

### De-encapsulates IP from ASI Stream

- Network Controlled
- User Friendly Set Up

## DVC4000™

### Dedicated MPEG Decoder

- Optional HD Decoder
- Built-in ASI/IP De-encapsulator

