

## KEY ADVANTAGES

MediaFLO technology offers unique advantages for a compelling mobile media service without compromise.

**Channel Capacity:** Enhanced time and frequency diversity, statistical multiplexing and variable bit rates result in extra capacity for additional programming options

**Fast Channel Switching:** Approximately 2 seconds between channels

**Video Quality:** QVGA live streaming video, up to 30 frames per second

**Power Optimization:** ~4 hours viewing time with a standard 850 mAh battery

## ADDITIONAL FEATURES

**Value Added Services:** Includes IP data services, clipcasting and integration of interactive applications

**User Interactivity:** Live viewer feedback, music and video offerings, ringtones, games, browser-based content and SMS can be integrated

**Usage Tracking:** Analysis of viewing habits or demographics of user community

**Local and Wide Area Support:** Subscription-based national and local or regional services supported simultaneously in a single frequency network

**Content Security:** Secured through authentication, authorization and conditional access procedures



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mediaFLO™

## Quick Facts



## MEDIAFLO TECHNOLOGIES

MediaFLO Technologies, a division of Qualcomm Incorporated, is responsible for the engineering and development of MediaFLO™ technology as well as the international marketing and deployment of the MediaFLO system.

## THE MEDIAFLO SYSTEM

The MediaFLO system is an end-to-end mobile broadcasting system purpose-built for the delivery of high-quality entertainment and information services to mobile devices.

Powered by the FLO® Air Interface Specification (AIS), the MediaFLO system provides increased capacity and coverage, as well as reduced costs for the mass market delivery of multimedia content to an unlimited number of mobile devices.



## FLO AIR INTERFACE— A GLOBAL, OPEN STANDARD

The FLO Forum has published twelve standards with the TIA:

TIA-1099 & TIA-1099 Rev. A	FLO Air Interface Specification
TIA-1102 & TIA-1102 Rev. A	FLO Minimum Performance Specification for Devices
TIA-1103 & TIA-1103 Rev. A	FLO Minimum Performance Specification for Transmitters
TIA-1104	FLO Test Application Protocols
TIA-1105	Mobile Multimedia Multicast for Handheld Device System
TIA-1120	FLO Transport Specification
TIA-1130	FLO Media Adaptation Layer Specification
TIA-1132	FLO Repeater Minimum Performance Specification
TIA-1146	FLO Open Conditional Access (OpenCA) Specification
TIA-1168	Mobile Multimedia Multicast for Devices Operating Below 3 GHz
TIA-1178	FLO System Information Specification
TIA-1181	Support for Emergency Alert Service

**ETSI:** Published TS 102 589, "Forward Link Only Air Interface; Specification for Terrestrial Mobile; Multimedia Multicast"

### ITU:

- FLO included as Multimedia System M and recommended technology in ITU-R BT.1833
- Report ITU-R BT.2049-2 recommends FLO technology for broadcasting of multimedia and data applications for mobile reception

## GLOBAL SUCCESS— DEPLOYMENTS AND TRIALS

### United States

- Verizon Wireless (CDMA carrier)  
Deployed mobile TV service in 2007
- AT&T (GSM/UMTS carrier)  
Deployed mobile TV service in 2008

### United Kingdom

- Two trials completed with BSkyB (Cambridge and Manchester)
- Physical layer field performance measured ~4.5 dB better than other technologies for non-layered modes with comparable bit per second per hertz capacity

### Japan

- Joint venture with KDDI (CDMA carrier) — MediaFLO Japan Planning Inc.
- Drive test conducted with Toyota Motor Corporation
- Trials in Okinawa and Shimane illustrate support of 6MHz VHF and UHF spectrum

### Taiwan

- Completed technical trial with CNS and TTV
- Signed a non-binding MOU with FAR EASTONE to explore the creation of a MediaFLO broadcast mobile media operator.
- Completed friendly user trial with both WCDMA and C2K operators

### Hong Kong

- Trial conducted in Hong Kong with PCCW

### Malaysia

- Trial completed in Kuala Lumpur with Astro and Maxis

## TECHNOLOGY CHARACTERISTICS

<b>Frequency</b>	UHF, VHF and L-bands
<b>Range</b>	470-862 MHz / 1452-1492 MHz
<b>Channels</b>	At 9.9 dB C/N: 17-19 channels in 5 MHz 21-23 channels in 6 MHz 25-28 channels in 7 MHz 28-32 channels in 8 MHz
<b>Transmission</b>	Orthogonal Frequency Division Multiplexing (OFDM)
<b>Constellation</b>	QPSK, 16-QAM and layered modulation
<b>Data rate</b>	~250 kbps average bit rate per channel (video + audio)
<b>Network</b>	Supports single frequency network and multiple frequency network configurations
<b>Delivery</b>	Mobile broadcast
<b>Formats</b>	Multimedia
<b>Video</b>	QVGA up to 30 fps based on AVC/H.264
<b>Audio</b>	AAC+/HE-AAC
<b>Data</b>	Text, image, graphics, rich media
<b>Transcoding</b>	H.264 QVGA resolution
<b>Resolution</b>	320 x 240 (QVGA video)

## ADDITIONAL ONLINE RESOURCES



### MediaFLO System Overview Brochure

Introduction to MediaFLO broadcast technology and how it delivers video, audio and data to mobile devices



### Integrated Mobile Media Datasheet

Description of a fully integrated mobile media experience enabled by the MediaFLO system



### Interactivity Datasheet

Description of personalized interactive services and content for a unique and compelling end-user experience



### MediaFLO Receivers Datasheet

Description of non-cellular FLO-compatible devices



### MediaFLO Technology White Paper

Detailed and technical description of FLO technology and how it works

[www.mediaflo.com](http://www.mediaflo.com)

