Satellite Digital Multimedia Broadcasting Service for Mobile & Personal Users in Japan

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Mobile Broadcasting Corporation
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Operator Info

- Operator: Mobile Broadcasting Corporation
- Established in May, 1998
- Total Capital Fund as of August 2006
  - JPY36.9billion, roughly US$360million
- Shareholders
  - 90 companies including Electronics manufactures, Auto manufactures, Telecommunications carriers, Broadcasting operators, Radio Operators, Postproductions, Ad Agencies, Publishing companies and so on.
  - Toshiba, SK Telecom (Korea), Sharp, Toyota, Yokogawa Elec., NTT Data, Usen BN, Nippon Television, Mitsui-Sumitomo Marin Security, Fujitsu etc.
Mobile Broadcasting Service

Across Japan

During Commute

While Driving

At Home

VideoAudioData

While Driving

2

Mobile Broadcasting Corporation

Across Japan

During Commute

While Driving

At Home
Mobile Broadcasting System

Hybrid System to realize the most efficient Ubiquitous Broadcasting Service
Broadcasting System/ Characteristics

- Carrier Frequency: 2.6425 GHz
- Bandwidth: 25 MHz
- Polarization: LHCP
- Modulation: DS-CDM
- Chip Rate: 16.384 MHz
- Processing gain: 64
- Spreading Code: Walsh Code and Truncated M Sequence
- Error Correction: Convolution Coding and RS(204,188) Coding
- Audio Coding: MPEG 2 AAC
- Video Coding: H.264
- Multiplexing: MPEG-2 Systems
- Conditional Access: MULTI-2
- Total Data Rate: more than 7 Mbps
Satellite System / Characteristics

MBSAT-1 Overview

Launch Mass : 3800kg
Design Life :
more than 12 years
S-band Transponders
EIRP : 67dBW
Antenna : 12m diameter
Ku-band Transponders
EIRP : 54dBW
Antenna : 2.4m & 1.2m
Reference Satellite (MBSAT)

Built by SS/L
Launch of MBSAT

ILS Atlas-III A

March 13th, 2004 @KSC Florida

photo by Ben Cooper
Signal Receiving Map

Blue: Can receive S-Band signal directly from Satellite more than 95% nation-wide

Red: Mostly tunnels
Broadcasting System/ Gap Fillers

Wide Area Gap Filler
Service Area: 1~3km from Gap Filler
EIRP = 30~50dBm

Spot Gap Filler
Service Area: 500m from Gap Filler
EIRP = 0~20dBm

Mobility Broadcasting Corporation
Features of Mobile Broadcasting Media

- Satellite Service with ultra-small antenna
  - Parabola antenna is no more required
- Single Frequency
  - Seamless service all across Japan
- Easy to use like radio and rich programs like CS broadcasting.
- Enable to enjoy even in building shade and in tunnels.
- Enable to enjoy at speeds of Shinkansen bullet train or Airplane.
Concept of Mobile Broadcasting Terminal

MBCO service has released TV from living room to outdoor.

1955 Portable Radio
Release Radio from living room

1978 WalkMan
Release AV from living room

1989 DynaBook
Release PC from office

1990s Mobile Phone
Release Phone from home

2004 MBCO
User Terminals

Mobile phone combined Terminal (Music Porter X by NTT DoCoMo)
User Terminals

**Plug & Play type Car tuner**
- Design
- Smaller
- Easy to Use

**Toyota DOP**
- Car Dealers supply chain
- Multi-function
- Moba-HO! + Car Navigation

Moba-HO! Tuner

Moba-HO! In Car Navigation

More new models expected
Broadcasting Center and Other Facilities

- Main Antenna
  - Diameter 7.6m
- Satellite Control Station
- Yamaguchi
- Ibaraki
- Broadcasting Center in Tokyo
- Media Center at Akasaka
Channels of MBCO

1. Video Channels: 8 channels

2. Audio channels: 37 channels

3. Data Programs: 60 titles
Contribution to the public

- The World’s First Nation-wide Broadcasting Media for Mobile and individual Users
- Development of the System and Infrastructure initiated by a Private Company
- Media Gap reduction
  - Rural area
  - Small ships in the ocean
  - High speed moving vehicles
- Useful media for Disaster Prevention
  - Early warning system for Earthquake, Tsunami, etc.
Live broadcasting is available in airplane

ANA domestic lines will introduce S-DMB (Moba-HO!) from early next year
Data broadcasting provide Ocean information service to fisherman ships

Valuable Ocean information is now available by simpler receiver with cheaper cost
Based on the information of the P wave of an initial earthquake signals, the system calculates and broadcasts the S wave arrival time of main movement.
Interactive Mobile Broadcasting Service

- Mobile Broadcasting Center
- Broadcasting Satellite
- Broadcasting Center
- Terrestrial Network
- Cellular Phone (Packet)
- MBC Terminal
- User
- GPS
- Gap Filler
- Internet Site
- e-commerce
- Information Holder
The Satellite Digital Multimedia Broadcasting services (S-DMB) have started in Japan and Korea.

We expect to introduce S-DMB services into other Asia-Pacific countries in the near future.

Thank You!