

# Mobile World Congress 2008

ABERTIS TELECOM

Official Mobile TV network provider

**Information & Technical Parameters for  
DVB-SH Receiver Manufacturers**

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# Abertis Telecom network parameters information for Mobile World Congress

## 1. Object

The object of this document is to provide information to the receiver manufacturers about all the technical parameters of the DVB-SH emissions that are going to take place in Barcelona during the Mobile World Congress 2008.

## 2. Introduction

The Mobile World Congress will take place in Barcelona the 11-14 of February 2008. The event will be performed in Fira de Barcelona with the following address:

Fira de Barcelona – Montjuïc  
 Avinguda Reina Maria Cristina, s/n  
 08004 Barcelona  
 Spain

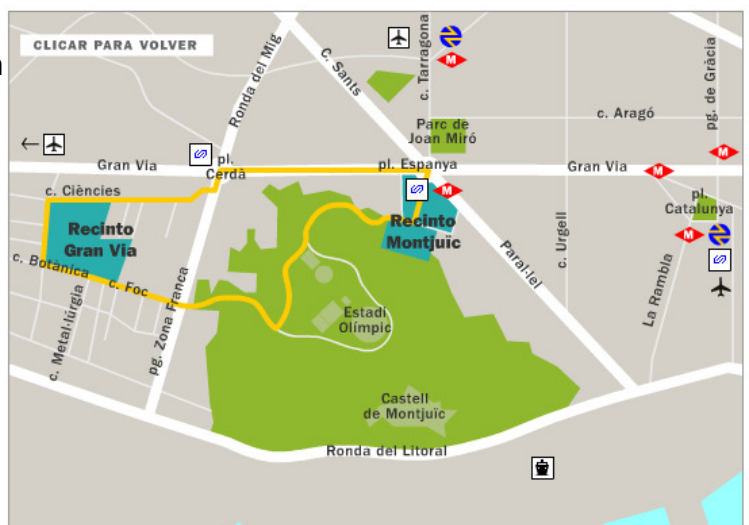


Fig 1. La Fira Barcelona.

Abertis Telecom, the main broadcast network operator in Spain, is the Official Mobile TV Network Provider of the event.

Abertis Telecom will have at one's disposal a technical area room where all the platform head end, equipments, content aggregations signals and distribution equipments will be centralized. This room is located in hall 6. See fig.2 .

The organization has communicated that the on-site installation in the congress can begin one week before the event.

From there, all the signals will be already encapsulated in a ready to transmit format and sent to the roof of the building from where it will be broadcasted. This year, the signals will be distributed also to several buildings to ensure indoor coverage.



Fig.2 Fira Barcelona Hall 7 location

### 3. Infrastructure Description

#### 3.1. Broadcast Network

Abertis Telecom will provide indoor and outdoor coverage to the fairground. The transmitters will be compliant with the DVB-SH Standard.

The four DVB-SH platforms are the following:

Platform Name	Platform Manufacturer	Coverage
Alcatel-Lucent	Alcatel	Congress

#### 3.2. Network Parameters

Platform Provider	Channel	Frequency	Cell ID	Platform ID	TS ID	Service ID range
Alcatel	N/A	2172500000	33	0xFFF003	22204	36760-36799

For all the platforms:

PSI/SI Parameter	Value
Original Network ID	8916
Network ID	12780
Demo Platform Name	Abertis Telecom
Demo Platform Provider Name	Abertis Telecom

#### 3.3. Physical parameters

Parameter	Value
Band	MSS
Network	SFN (dedicated MUX)
Bandwidth	5 MHz
Mode	2k
Modulation	QPSK (non hierarchical)
Code Rate	1/2
Guard Interval	1/8
TPS Signaling	DVB-SH signaling Cell Id

The total channel capacity for the proposed network configuration is of **3.455882Mbps** (without MPE-FEC). Each platform provider will decide if MPE-FEC is applied to the services attending the channel capacity.

### 3.4. Video channel

Abertis Telecom will provide the baseband video channels. The initial program selection is the following but changes may change depending on platform provider

	Channel	Feed	Language	Audio	content
1	24h TVE	DTT	Spanish	1 audio	news
2	Veo (Sony Entertainment TV)	DTT	Spanish	2 audios (Spanish / English / (movies)	TV films and comedy
3	Net TV	DTT	Spanish	1 audio	generalist
4	Cuatro	DTT	Spanish	1 audio	generalist
5	La Sexta	DTT	Spanish	1 audio	generalist
6	40 Latino	DTT	Spanish	1 audio	music
7	Tele 5 sport	DTT	Spanish	1 audio	sports
8	Teledporte	DTT	Spanish	1 audio	sports
9	A3	DTT	Spanish	1 audio	generalist
10	Neox	DTT	Spanish	1 audio	generalist
11	TV3	DTT	Catalan	1 audio	generalist
				2 audios (Catalan / English / (movies)	TV films and comedy
12	Canal 300	DTT	Catalan	1 audio	sports
13	Barça TV	SAT	Spanish	1 audio	News
14	CNN+	DTT	Spanish	1 audio	News
15	CNBC	SAT	English	1 audio	News
16	Mobile World Congress TV	local			

The content selection for each platform will be assigned by Abertis Telecom ensuring Mobile World Congress media partners and sponsors inclusion.

Each channel will have no more than 16 services, where 10 services will be defined by Abertis Telecom, whereas the remaining capacity may be defined by platform operators that can include video, radio, applications or other added value services.

## 4. Platform Information

### 4.1. Platform Configuration

#### 4.1.1. PSI/SI Signalling

Compliant with TS 102 470 [2]

Repetition Rate	Value
NIT	< 10s
PAT	≤ 100 ms
PMT	≤ 100 ms
INT	≤ 10s

The recommended capacity reserved for PSI/SI is 300 kbps.

#### 4.1.2. MPE-FEC Parameters

Defined by platform provider.

Parameter	Value
MPE-FEC Code Rate	10% for ESG 5% for TV channels
Burst Duration	
Burst Size	
Peak Bit Rate per Burst	
MPE-FEC Rows	256

The maximum receiver synchronization time should be 100 ms.

Maximum delta\_T jitter of 10 ms [5]

#### 4.1.3. Detailed Service Parameters

Defined by each platform provider.

Service	PID	Rows	MPE-FEC	Burst length	Average Bit rate	Description
ESG-SH	256		10%		70 kbps	ESG
TV1	512		5%		370 kbps	TV1
TV2	768		5%		370 kbps	TV2
TV3	1024		5%		370 kbps	TV3
TV4	1280		5%		370 kbps	TV4
TV5	1536		5%		370 kbps	TV5
TV6	1792		5%		370 kbps	TV6
TV7	2048		5%		370 kbps	TV7
TV8	2304		5%		370 kbps	TV8

Defined by each platform provider (below MPE-FEC level)

Service	IP Version	Multicast Address	RTP/UDP ports	PID	Average Bitrate	Codec	Description
TV1	4	239.1.1.1	6050	512	300kbps	H264, MPEG-4	TV1
TV2	4	239.1.1.2	6050	768	300kbps	H264, MPEG-4	TV2
TV3	4	239.1.1.3	6050	1024	300kbps	H264, MPEG-4	TV3
TV4	4	239.1.1.4	6050	1280	300kbps	H264, MPEG-4	TV4
TV5	4	239.1.1.5	6050	1536	300kbps	H264, MPEG-4	TV5
TV6	4	239.1.1.6	6050	1792	300kbps	H264, MPEG-4	TV6
TV7	4	239.1.1.7	6050	2048	300kbps	H264, MPEG-4	TV7
TV8	4	239.1.1.8	6050	2304	300kbps	H264, MPEG-4	TV8

All the services should be properly announced in the ESG and PSI/SI tables.

#### 4.1.4. Video and Audio Formats

For TV Services: defined by each platform provider.

Parameter	Value
Video Codec	H.264AVC
Profile	ISMA Profile 2
Picture Size	320x240 QVGA
Frame Rate	25
Max Bit Rate	330kbps
Preferred Bit Rate	300kbps
Video Encapsulation	
Audio Codec	MPEG-4 AAC
Audio Format	stereo
Audio Bit Rate	32kbps
Audio Sampling Frequency	24
Audio Encapsulation	
A/V Packetization Mode	

#### 4.1.5. ESG

On PID 256.

Parameter	Value
Data Model	BIM
Transport	Differential
Bootstrap IP Address	224.0.23.14
Bootstrap Port Number	9214

#### 4.1.6. Applications

Compliant with TS 102 472 [4]

## 5. Test Facilities

Abertis telecom will provide some test facilities in their laboratories in order to check the signals and the interoperability before the beginning of the event. In other hand, Abertis will also provide test string of all the platforms available in the ftp site. The information to access to the FTP site is the following. The directory to download is SW\_OUT3 in the following address.

**Address:** [ftp://SWD\\_3:san\\_8264@195.77.241.164/SW](ftp://SWD_3:san_8264@195.77.241.164/SW)

## 6. Interoperability Tests

Interoperability among all Platform Providers and Receivers is the main objective of Abertis Telecom. Any receiver manufacturer is invited to attend and perform interoperability tests in the Abertis Technical Room.

Contact information for this issue is (luis.moreno@abertistelecom.com)

## 7. Receiver Performance

The performance of the reference receiver should be in accordance with the corresponding DVB-SH Implementation Guidelines [5].

## 8. Contact Information

Abertis Telecom contact details are :

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## 9. References

[1] ETSI EN 102 585: "Digital and Video Broadcasting (DVB): System Specifications for Satellite services to handheld devices (SH) below 3GHz

## 10. Revision history

<i>Document version</i>	<i>Author</i>	<i>Change Description</i>
v1.0	Luis Moreno Fraile	First Version with Alcatel comments
V2.0	Luis Moreno Fraile	Change some references