




DRM+ in VHF Band III



 **Hirschmann Car Communication**

 **Hirschmann Car Communication**


Hirschmann Car Communication

 **Hirschmann Car Communication**


Business Units

Antenna Systems	TV Systems
<ul style="list-style-type: none">• Integrated antenna systems• Roof antennas and rod antennas	<ul style="list-style-type: none">• Hybrid• Digital
	

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 **Hirschmann Car Communication**

Antenna Systems



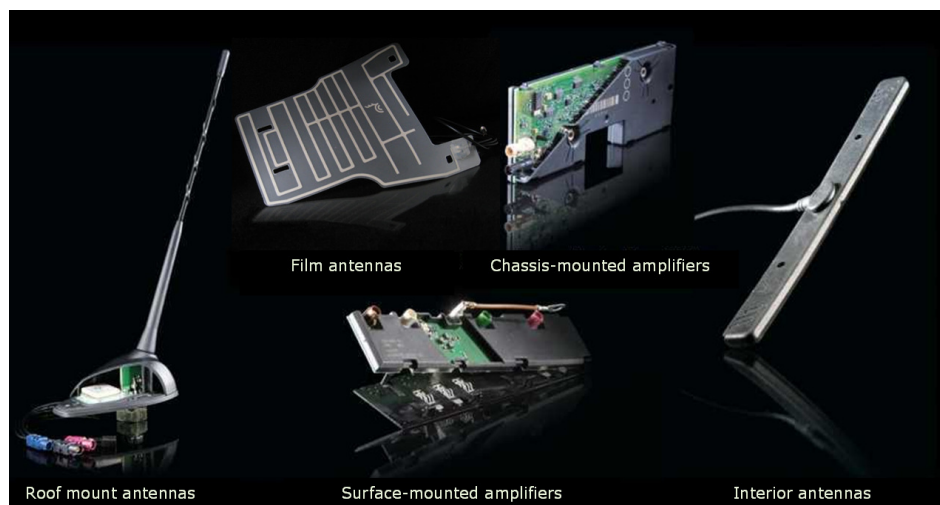
4

Antenna Systems – Overview

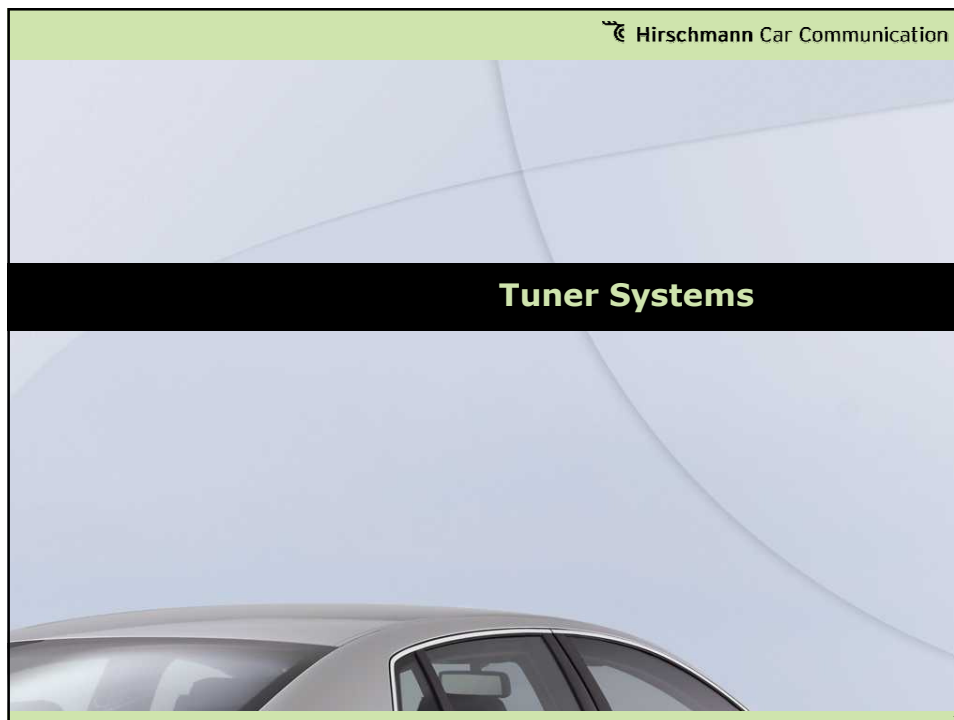
- ➔ **No. 2 in Europe**
Market share 2009: 25%
- ➔ **Sales 2009: € 45m**
Share of total sales: 54%
- ➔ **Technology leader for**
integrated and combined
Antenna Systems

5

Antenna Systems Overview



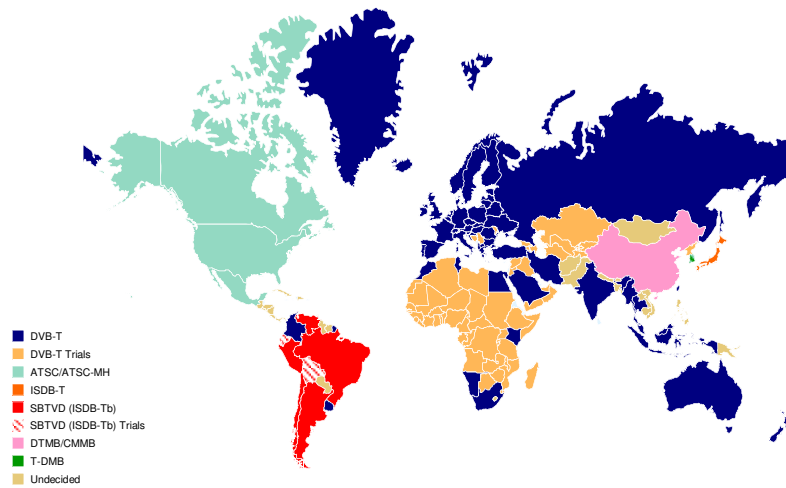
6



The slide features a light green header with the Hirschmann Car Communication logo and name. Below the header is a green bar with the title 'Tuner Systems - Overview' in white text. The main content area is white and contains three green arrows pointing right, each followed by a bullet point. A small number '8' is in the bottom right corner.

- ➔ **No. 1 worldwide**
Market share 2009: 59%
- ➔ **Sales 2009: € 34m**
Share of total sales: 40%
- ➔ **Pioneer and technology leader**
for hybrid and digital TV tuner

TV-Systems – Digital TV-Standards all over the World




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TV-Systems Customer Reference List



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 Hirschmann Car Communication

TV Systems – Overview


Applications

TV Systems

- Communication and control busses MOST or CAN
- Broadcasting standards DVB-T, ISDB-T, DTMB or T-DMB
- 2 - 4 Tuner systems




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 Hirschmann Car Communication

TV Systems

Technical Features

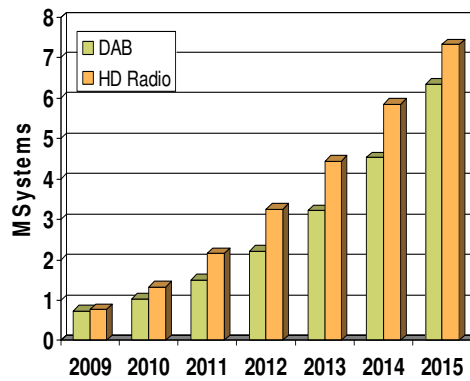
- Analogue and digital reception for DVB-T and DTMB
- Pure digital reception for ISDB-T and T-DMB
- Variable 2 - 4 receiving paths
- Diversity: combines the receiving paths especially for mobile purposes
- Control, Diagnosis and Audio-transmission via optical MOST Bus or Control, Diagnosis via CAN
- Software update via MOST or CAN
- Teletext (if available)
- Providing new features (EPG, Browser, ...)



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Car Radio Digital Reception Market

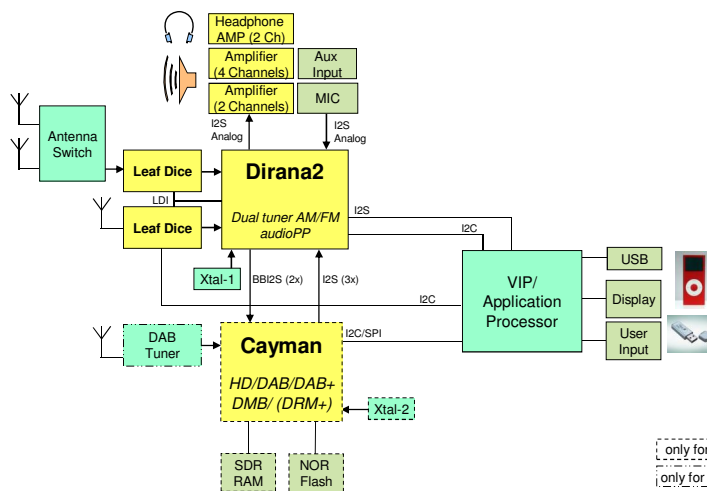
- Analysts forecast strong growth rates
 - CAGR 09-15 DAB 43%
 - CAGR 09-15 HD Radio 45%
- DAB
 - French mandate for 2013
 - UK already established
 - Italy approves DAB+
 - ...



Source: iSupply, January 2010

13

Mainstream System with/without Digital Radio based on Leaf-Dice/Dirana2



Source: NXP

14

Future digital receivers for DAB+/DRM+ only

At present DAB is only available as additional function in form of mere DAB-receivers.

The market for Hybrid Receivers is only poorly developed.

Today, advanced CMOS processes already allow highly integrated one chip solutions.

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Digital radio in Japan

Based on the Japanese terrestrial TV-system, the so-called „Sound Broadcasting“ system was supposed to be launched already three years ago.

On enquiry a NHK Manager explained:
SB in Japan is the same nightmare as DAB in Europe.

According to our information the system has „fallen asleep“.

Kids watch 1 segment video/audio TV programmes on their mobile phones.

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Digital radio in Korea

Korea has introduced T-DMB.

At the moment there are two 6MHz channels in the VHF range for:

- 8 TV programmes
- 4 digital audio programmes
- Broadcast Website
- Encrypted TPEG data for traffic information

For some months it has been changed to DMB 2.0, i.e. the previous DAB Audio signals have been integrated into the h264 data stream. Broadcast Website (BWS) is encoded.

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Digital radio in China

Young Chinese only listen to radio in the taxi.

In Beijing DAB and T-DMB test programmes are on the air.

In the UHF range China has launched an own mobile TV- and data system called CMMB.

In hundreds of cities up to 8 TV and radio programmes can be excellently received via handhelds.

20

Digital radio in France

In 2013 DMB audio is to be launched in France.

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Summary

At the moment portable equipment with LC displays ranging from 4 to 6 inch is available in the Asian countries.

The majority of the equipment features:

- TV
- Radio
- Navigation

In Korea concepts like BWS and BIFS are planned requiring return channels.

The first mobile phone with CMMB was introduced in Beijing on the occasion of the CCBN in March this year.

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