

Connecting to the after-market – New products

WorldDMB European Automotive Event: 'Digital Radio Connecting the Car'

14st Nov 2012

Market Situation

- The market success of digital radio is dependent on the listening in cars
- Situation in Germany:
 - Population: 81.8 M
 - Passenger cars in use: 43M
 - New registrations: 2011: 3.5M
 - appr. 12 years to replace all existing car stereos
- Only very few Car OEMs offer Digitalradio
 - However UK in Q2 2012: 26% of cars with DAB RX installed
- DAB+ Receivers are offered as option, often for a high extra cost
- There is large number of cars in the car parc which should be upgraded
- Aftermarket is important to introduce new features and functions to cars!

Overview of aftermarket products

- 1Din Radios



- 2Din Radios



- Do it yourself adapters



- Dealer fit solutions



Issues in the aftermarket - summary

Consumers

- Low consumer awareness of Digital Radio products for the car
 - 2012 was the year of new product releases
 - Consumer acceptance to mount something on the dash board is limited
 - Design follows function – Solutions should fit smoothly to dashboard
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Product complexity

- Wide range of car models and special issues – no one-fits-all solution for upgrading a Car Stereo to Digital Radio
 - Variety of interfaces – no standard interface for control and audio
 - AUX, Bluetooth, CD Changer, USB, FM re-transmit, CAN, MOST
 - Difficult for OEMs
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Installation

- Additional Antenna is required – new topic for installers and designer
- Extra Controller for the radio unit or special interface into the head unit

Upgrades and conversion solutions

- Upgrade from analogue
 - Existing car with AM / FM radio, maybe also SatNav integrated
 - Infotainment offers external interfaces such as AUX input, USB, Bluetooth or Video Input
 - New Hardware needs to be installed including new antenna for Band 3 and L-Band
 - Cable needs to be routed between new Hardware, existing radio and antenna

→ Effort can widely vary between car model and installed radio

- Conversion from DAB to DAB+
 - Existing DAB solutions with Band 3 and L-Band antenna
 - Exchange of external tuner unit allow reception of DAB+ Audio too
 - Very low installation risk and effort – appr. 1/2 h
 - Perfect HMI integration – no difference on user interface

Installed 1DIN radio



Installed 2DIN radio



Do it yourself adapter



Dealer fit



Installation efforts

- Installation efforts can vary widely

DAB Car Upgrade solution	Estimated effort on installation time incl. Positioning of Window Antenna
1 Din Radio	½ h
2 Din Radio (with CAN bus adapter)	1h
Dealer fit adapter with AUX out	1h
Dealer fit adapter with Video out	1h
Dealer fit adapter with separate control unit	2h
Do it yourself adapter	No cost

- Adapters require to remove existing radio to get access to some interfaces on the rear side and also power supply
- In case existing car antenna should be used effort will be much higher

Fiamm - Smart Antenna providing best RX performance

- Smart Antenna Approach – substitute for existing antenna, but with DAB+ upgrade
 - Control of the antenna is made via Bluetooth by a smartphone.
 - Application can be downloaded on App'store and Android market.
 - Audio is sent to the Aux entry of the car
- SM10 is
 - Easy to install (less than 30 min)
 - Providing excellent DAB radio receiving
 - Easy to command through smart-phone
 - Avoids aftermarket add-ons to the car
 - Respectful of the car internal design

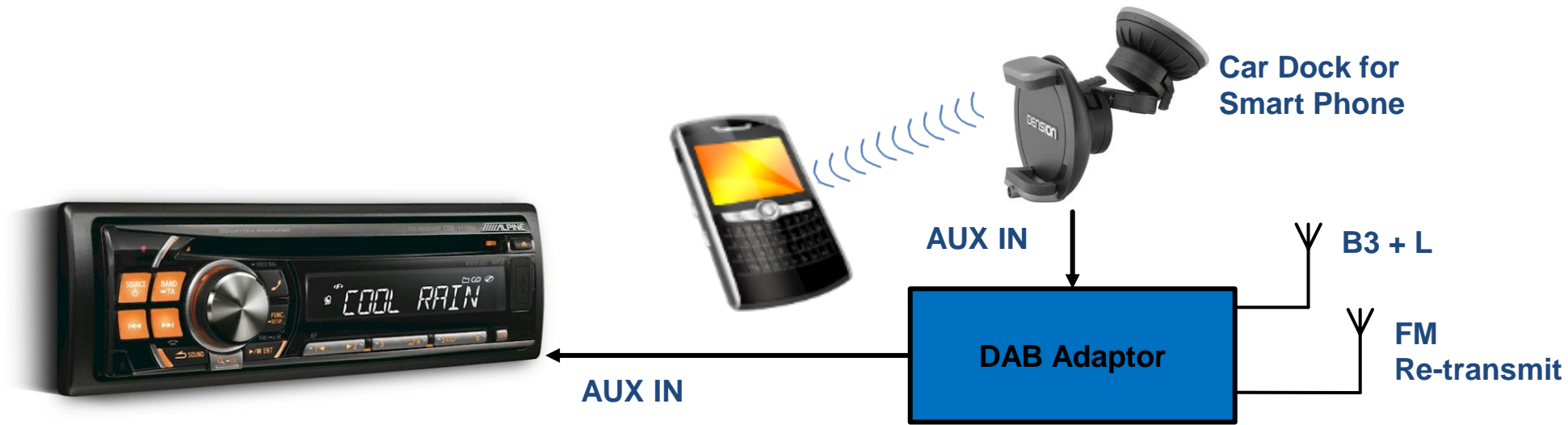


Smart Phones Adaptors from Dension 1/2



- Main advantage:
 - Compatible with all cars: full user interface, there are no limitations from the car
 - Adaptor will not block the AUX-in of the car
- Modern Smart phones can manage several Bluetooth connections (e.g. Radio and Adaptor)
 - Both iOS and Android can be supported
- Audio from Adaptor to Radio Unit via different options
 - AUX output from DAB Adaptor
 - FM Re-transmit for older car radios

Smart Phones Adaptors from Dension 2/2



- Like Version 1 extended by a smartphone kit, providing holding, charging, handsfree and music integration for the smartphone
- Cabling can be solved much neater: charging and AUX cables can be hidden in the car, as you don't need to connect/disconnect them all the time
- APP on Smart phone is still able to manage different tasks
 - DAB control
 - Music stream
 - Navigation ...

USB Adaptor from Hama



- Plug & Play
- Full digital audio
- Factory-fit USB HMI is used
- Easy to define car compatibility
- Supports active antennas
- Upgradable firmware via USB

„Form follows Function - Technology follows Usability“

- BMW: the interface is currently a big challenge for the car industry. New technologies, materials and especially new consumer behaviour change the perception of driving a car.
Adrian van Hooydonk in Meinungsbarometer Digitaler Rundfunk; Sonderausgabe Medientage München
- FS will further spend efforts to improve user comfort with focus on perfect audio / radio experience
 - New SW is under design which will be released in Q1 2013
- This will prepare the basis for significant growth of the aftermarket from 2013/14

What broadcasters can do to improve consumer awareness

- Promote radio solution for cars beside a general promotion of Digitalradio
- Tell the consumer that it is possible to integrate new radios in existing cars
 - Cost for such upgrades is reasonable
 - No risk for owner to upgrade an infotainment unit
- Not only OEM dealers can install an upgrade or conversion unit
 - Retail chains with expert knowhow are often more effective in installation
 - Specialized dealers have high level expert know-how
- Message: If you want to listen to future proof Digitalradio in a car – there are several ways to get this. For almost every car there is a reasonable offer already available – and more will come soon !