# WorldDMB

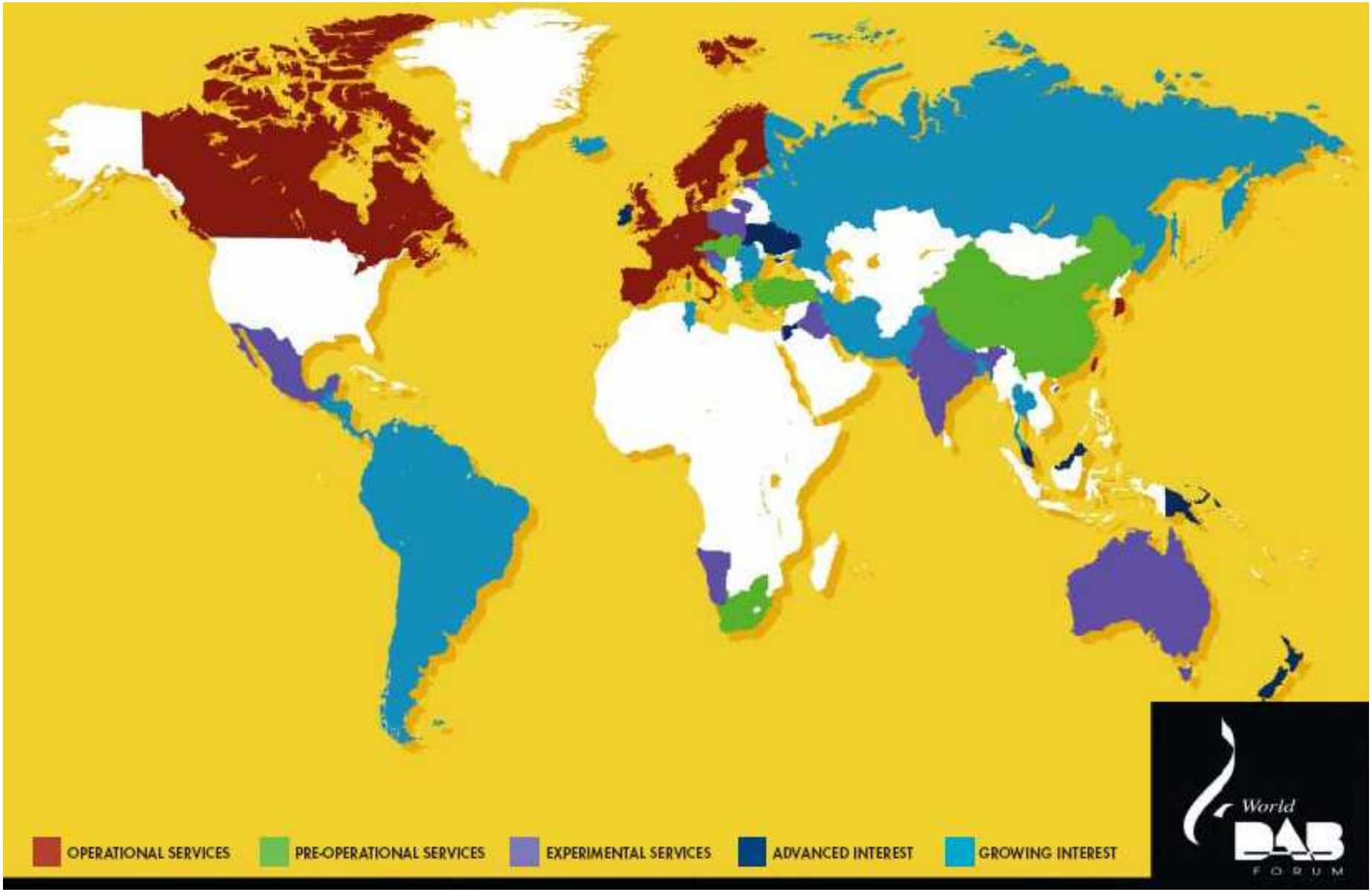
## DMB Chipset Trend

*August 2007*

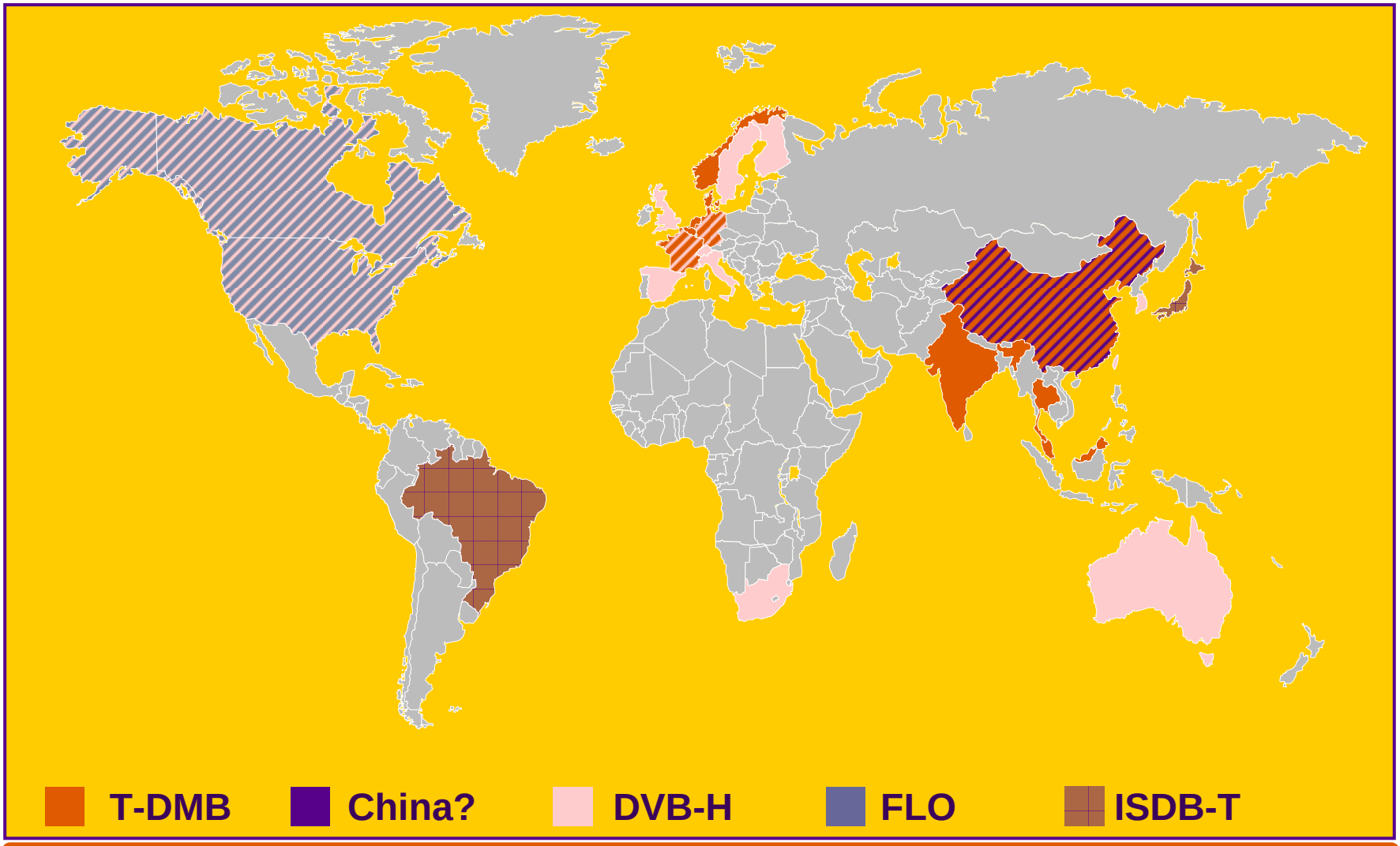
# Executive Summary

- **DAB dominating the next generation digital audio broadcasting standard**
- **Mobile Digital TV**
  - Multi-standard competing
  - Evolving as “Living Creature”
- **Digital Multimedia Broadcasting → Video + Audio = Multi-Standard Co-existing**
  - European Market already indicated the needs
- **Dynamic China MDTV situation – evolving required flexibility to adopt**
- **Multi-Standard Device – winner of the game**
  - Make perfectly the sense of concept – how to make the perfect device?
    - Software Configurable Front-end solution

# DAB Worldwide Penetration



# MDTV: Multiple Standards and still evolving



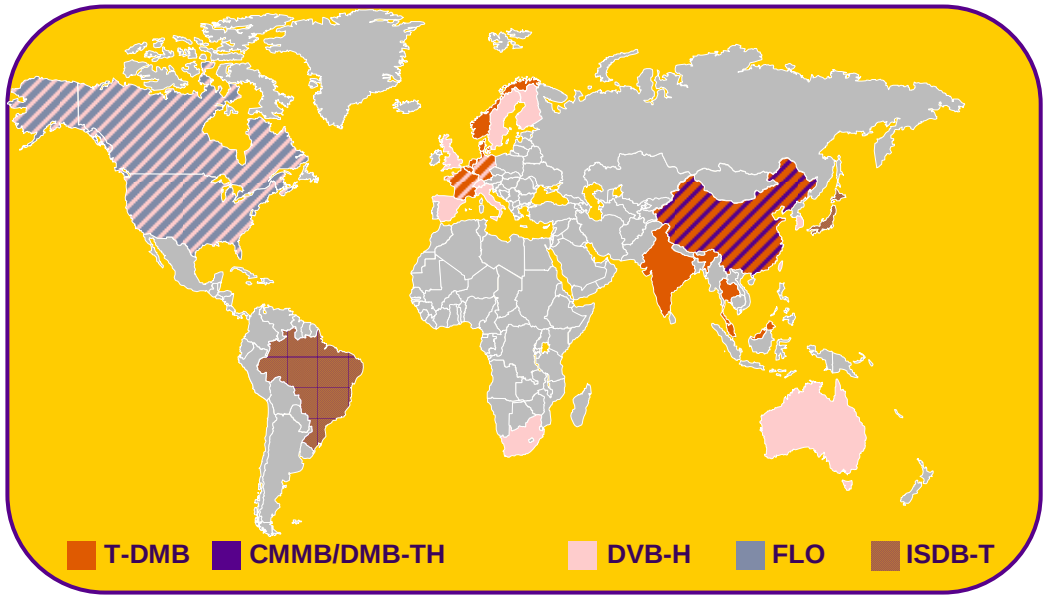

## Split by Region

Source: Frontier Silicon, ABI Research, brokers' research.

# DMB: Multi-standard is the King

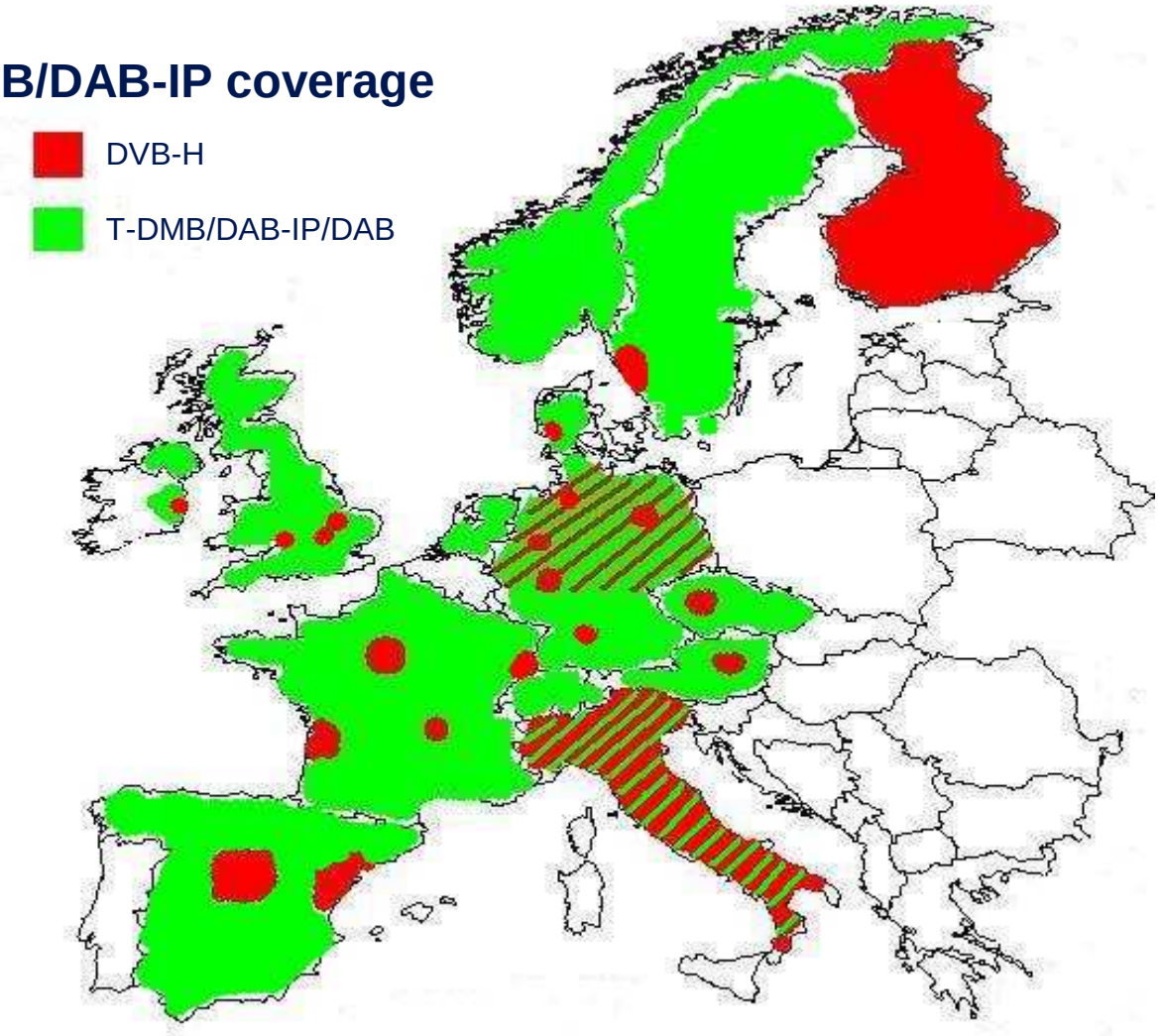
- **There are many global opportunities for multi-standard receivers:**
  - **DVB-H + T-DMB (Germany, France, *Italy*)**
  - **DVB-H + DAB (Overall Europe, especially UK w/ full DAB coverage)**
  - **DVB-H + FLO (US)**
  - **CMMB + DAB/DMB (China)**

    **(or DMB-TH / DTMB)**



# Multi-Standard European Market

- **Map shows DVB-H and DAB/T-DMB/DAB-IP coverage**

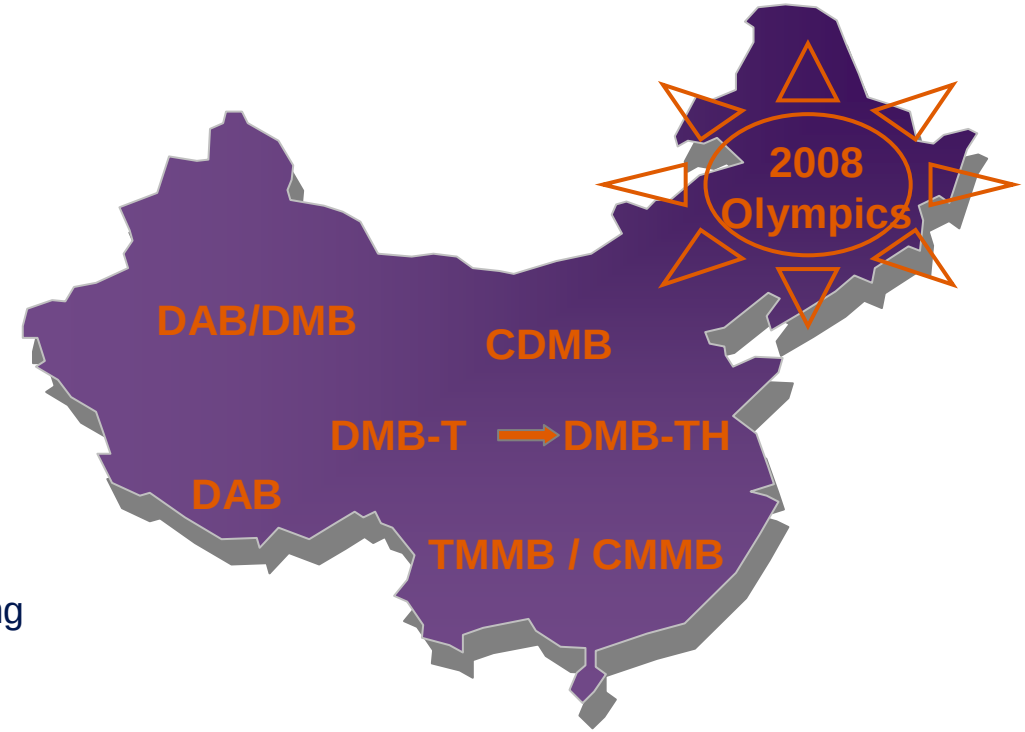


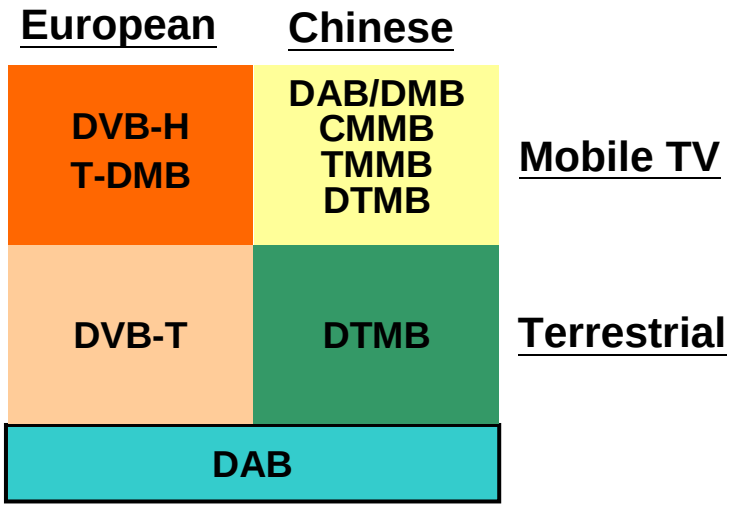

- **MDTV Receiver for Europe must**
  - Support multiple standards
  - Software Defined
  - Upgradeable
  - Low Power, Cost

- **DVB-H + DAB Handset**
  - Add significant differentiator
  - DAB is free service
  - Radio is much listened to in Europe

# DMB in China: Evolving Dynamic Market

- **CMMB**
  - Satellite based with Terrestrial gap filler
  - Full geographic coverage in China
- **T-MMB**
  - Derivative and Improved technology from the mature std.
- **DMB-TH (DTMB)**
  - Deployed National Standard for Digital TV
  - Terrestrial DMB-T deployed in taxi/buses in Beijing
- **DAB/DMB**
  - Deployed National Standard for Digital Audio
  - Well developed infrastructure
  - Extended data service (including video)
- **CDMB**
  - Ride on DAB well established infrastructure
  - Modification of transportation protocol
  - Chinese video format - AVS



# DMB Market Requirement – Multi-Standard
## *System-On-Chip (SoC)*

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## *Compatible Software Architecture / API*

2007
Multi-Std SIP
BBIC
RF tuner

SiP

2007
Multi-std BBIC
(0.13u CMOS)

SoC

- Configurable Multi Standard BBIC
- Power optimized RF tuner

- DVB-H, DVB-T
- T-DMB, DAB-IP, DAB

- Sufficient integrated memory

2008
Multi-std SoC
(***90nm CMOS***)

SoC

- Multi-std SoC
  - BB + RF
  - single die

- T-DMB, DAB-IP, DAB
- DVB-H, ***DVB-T (diversity)***

2008/2009
Multi-std SoC
(***65nm CMOS***)

SoC

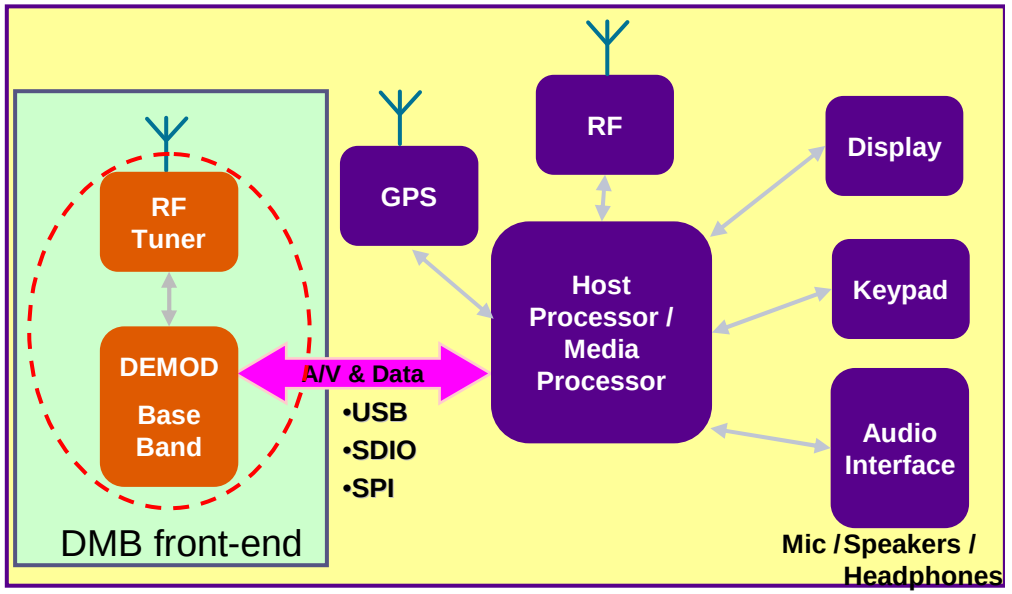
- Multi Std SoC

- DVB-H, DVB-T (diversity)
- T-DMB, DAB-IP, DAB
- ***ISDB-T 1+3 SEG***
- ***CMMB***

> 2009
Multi-std SoC
(XXnm CMOS)

- Multi Std SoC

- DVB-H, DVB-T (diversity
- T-DMB, DAB-IP, DAB
- ISDB-T 1+3 SEG
- CMMB
- ***FLO***
- ***DMB-TH***



# Market require the software configurable architecture → Multi-Standard and Flexible to adopt the rapid change

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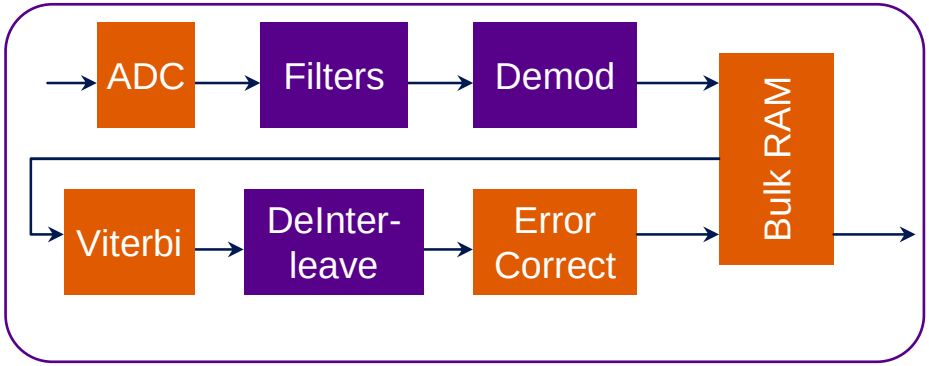
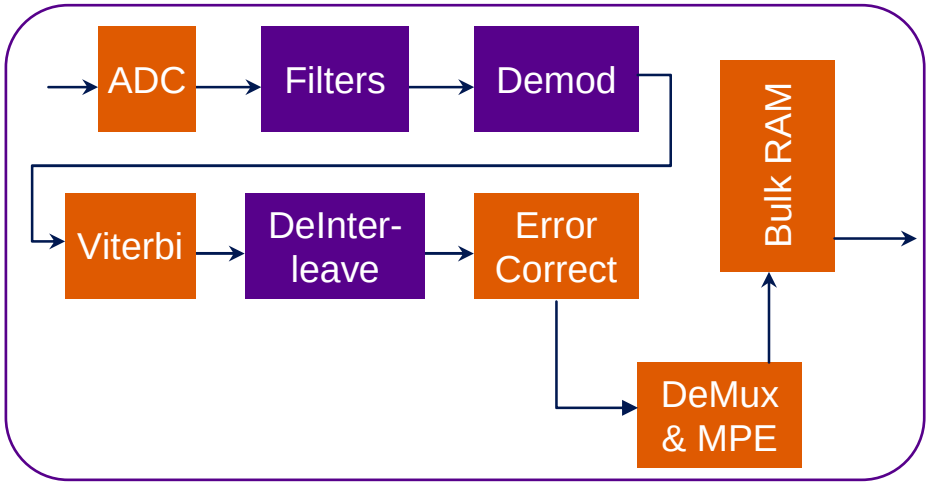
## DAB-IP/T-DMB Data Flow

- **Bulk RAM for Inner De-interleaver**




## DVB-H Data Flow

- **Bulk RAM for MPE De-Interleaver**




**Firmware configurable blocks**

**(Filters, Demodulator, De-Interleaver, Host Interface)**

**Block reuse ensures efficient architecture**

**High silicon reuse, low power consumption**

**Legend:**

*FW-config*

*HW defined*

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## Thank You