

HOME INTERCONNECTIVITY

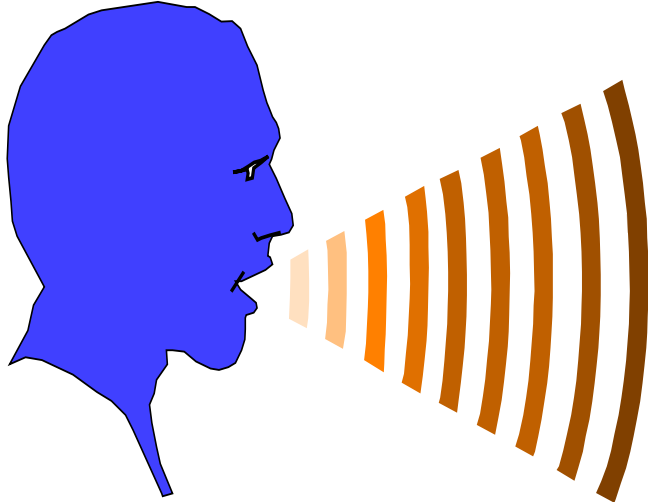
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Senior Staff Engineer

MOTOROLA s.r.o. Rožnov p/R



Topics



- Home Networking
- Bluetooth Introduction
- Conclusion

What is Home Networking?

Connecting

of any

Devices and Appliances

in the home with the purpose of

Transporting

and

Sharing Information

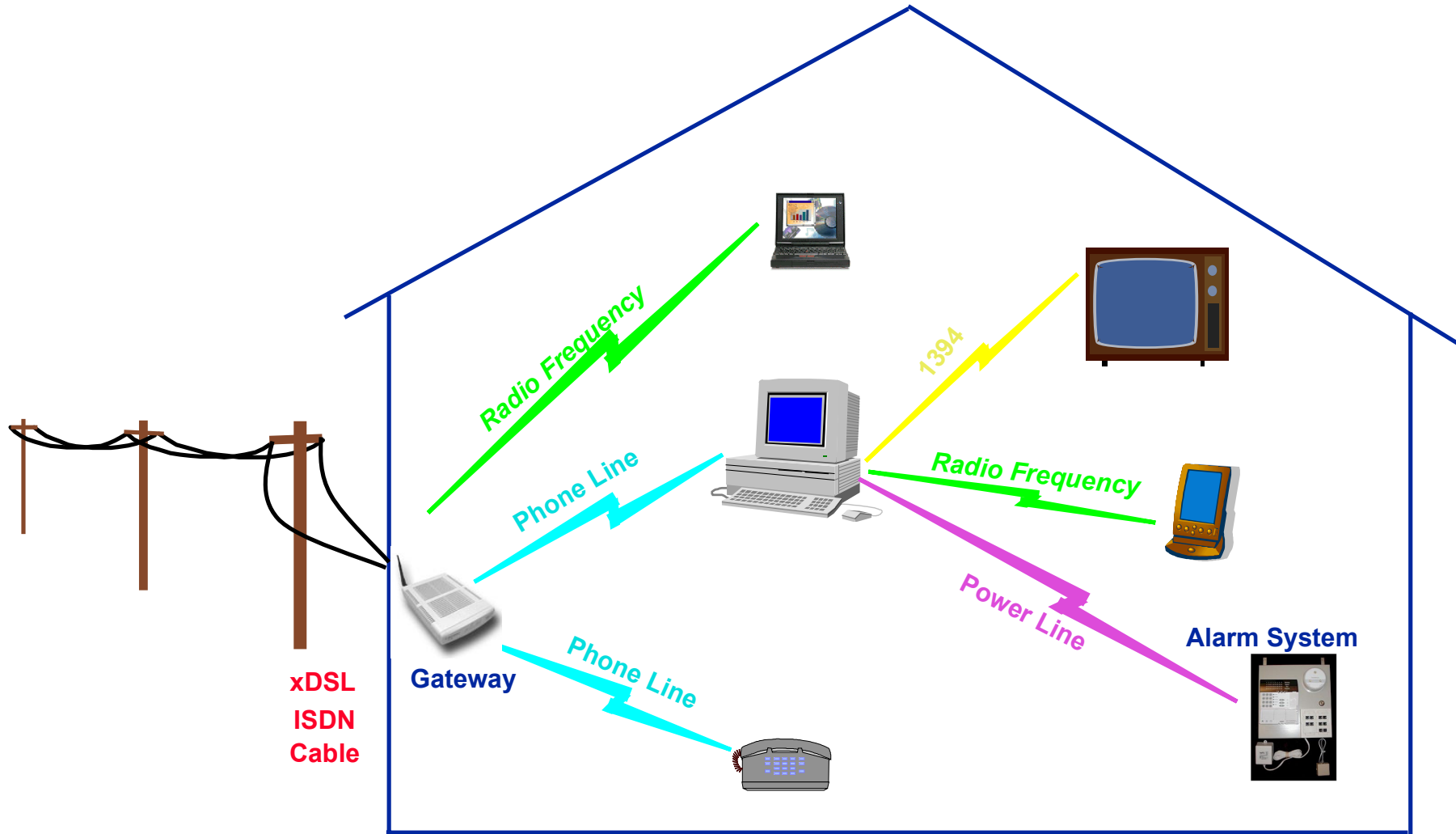
The technology necessary to tie disparate islands of functionality together. (Home PNA, Home RF, Ethernet, IEEE 1394, etc.)

PCs, Modems, Gateways, Printers, Set top boxes, game stations, stereos, TVs, air conditioners, garage doors.....

The Medium - phone wires, electrical wires, wireless spectrum, coax, Cat 5, etc.

Data, Voice, Video, Audio

The Networking Cocktail



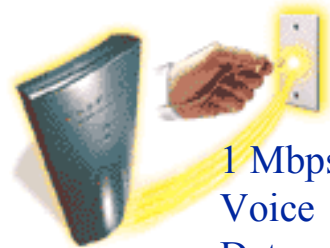
Personal Area Network Alternatives

Solutions for the Home

Solutions for the Person

Solutions for the workplace

Home PNA



1 Mbps
Voice
Data
Low cost



721 Kbps
Voice
Data

802.11

11 Mbps
Data only
High cost



Power Line



30 kbps - 1 Mbps
Data only

MOTOROLA
Semiconductor Products Sector

Home RF



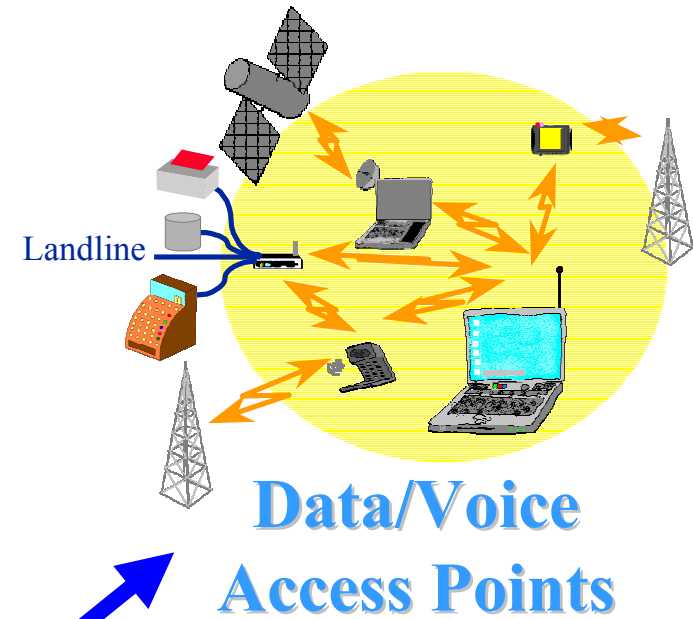
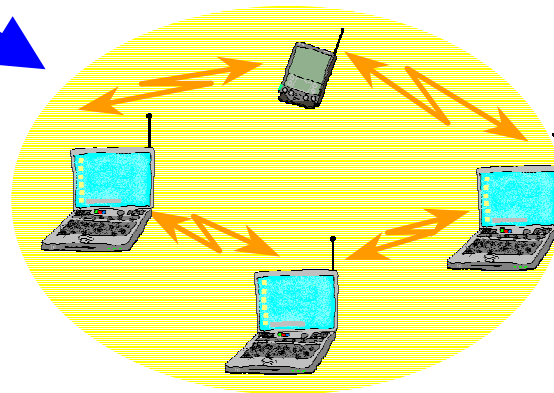
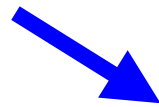
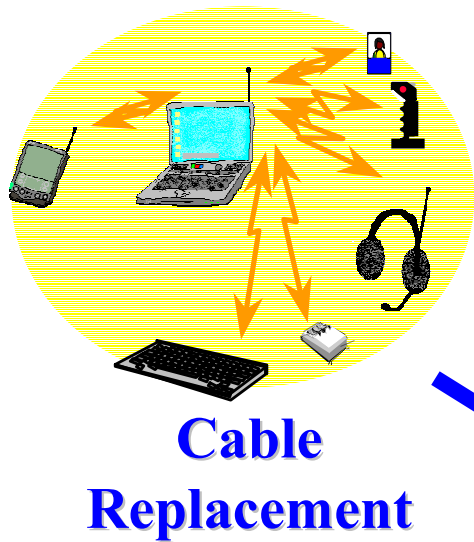
1.6 Mbps
Voice
Data

Bluetooth

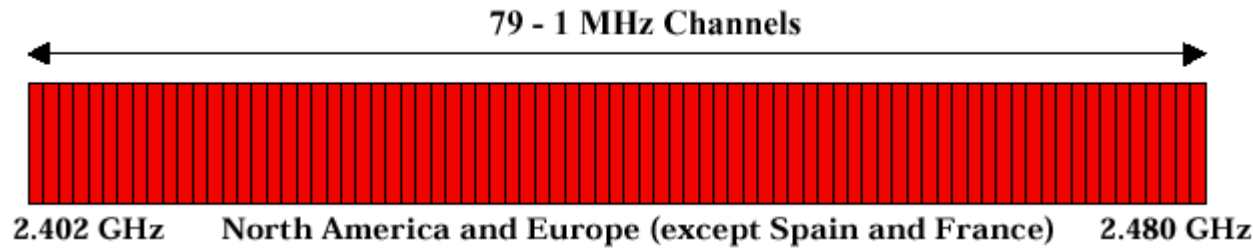
- **3x64 Kbps Synchronous (Voice) Channels PLUS**
- **721 Kbps/57.6 Kbps or 432.6 Kbps/432.6 Kbps**
Asynchronous (Data) Traffic
- **FHSS, 1600 hops/sec**
- **0 dBm, 10m Range proposals of 20 dBm, 50m Range**
- **Security: Each Device Assigned an ID**
 - **Short Range**
 - **Authentication Based on Challenge-Response Algorithm**
 - **Device Access Controlled by User**
 - **Optional Encryption with 40-64 Bit Secret Key**

Evolution of Bluetooth Usage

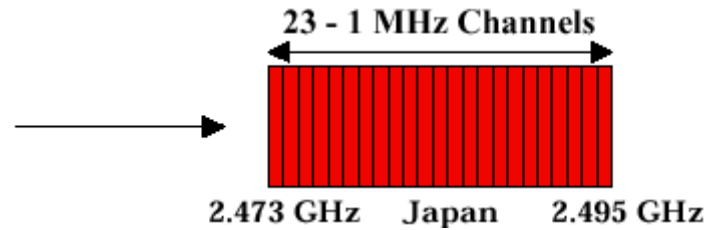
Initial Implementation:



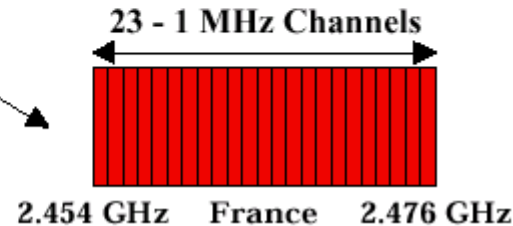
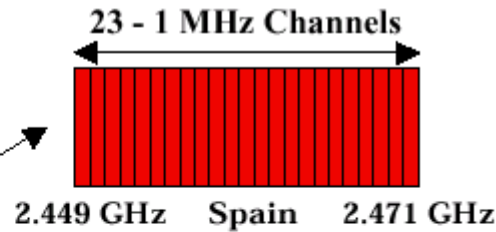
Frequency Plan



There is a proposal from ARIB to revise the Japanese ISM band to 2400-2483.5 MHz. A

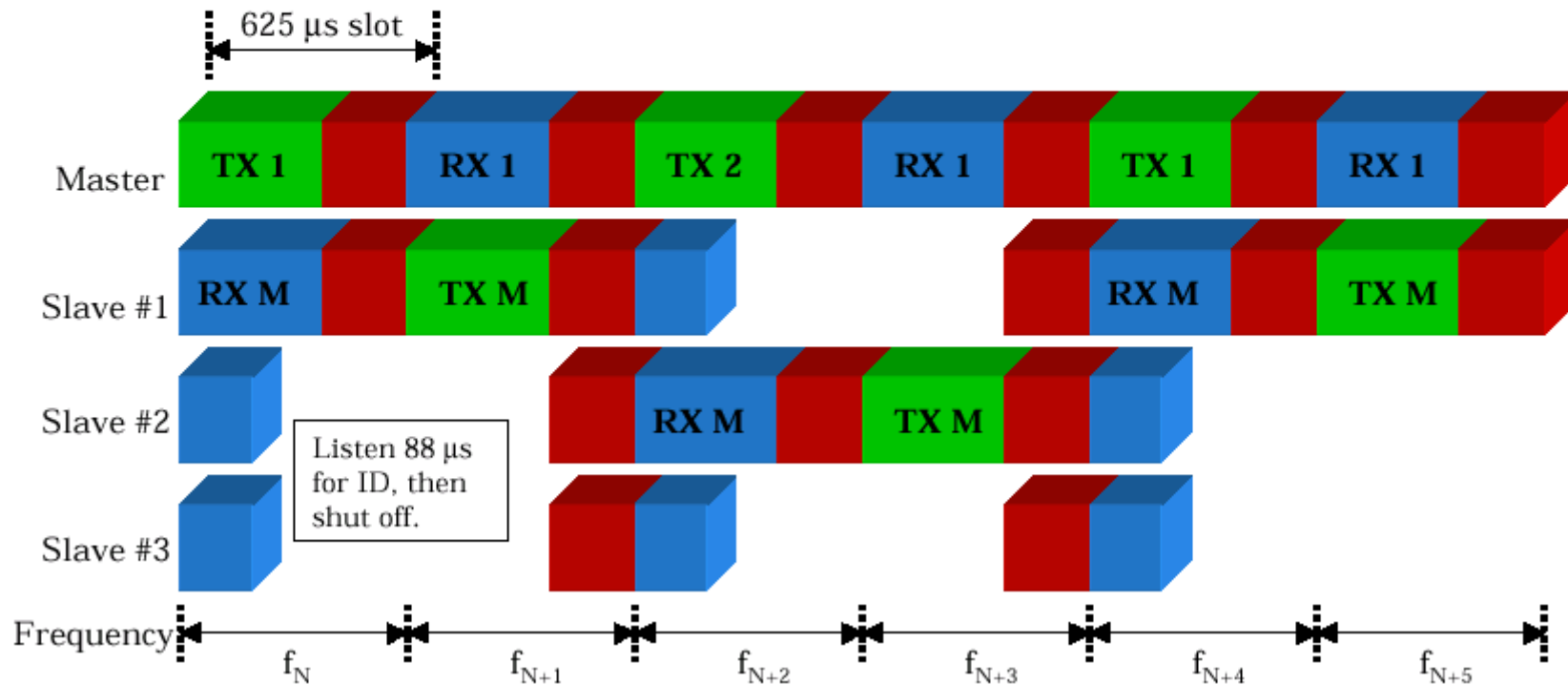
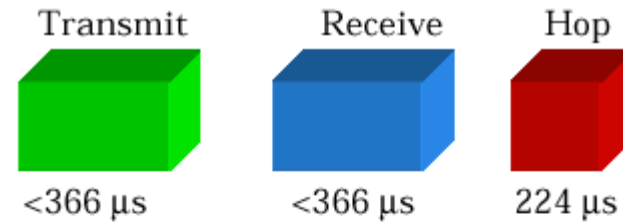


A harmonization process has been started to conform to the same ISM band as the rest of Europe

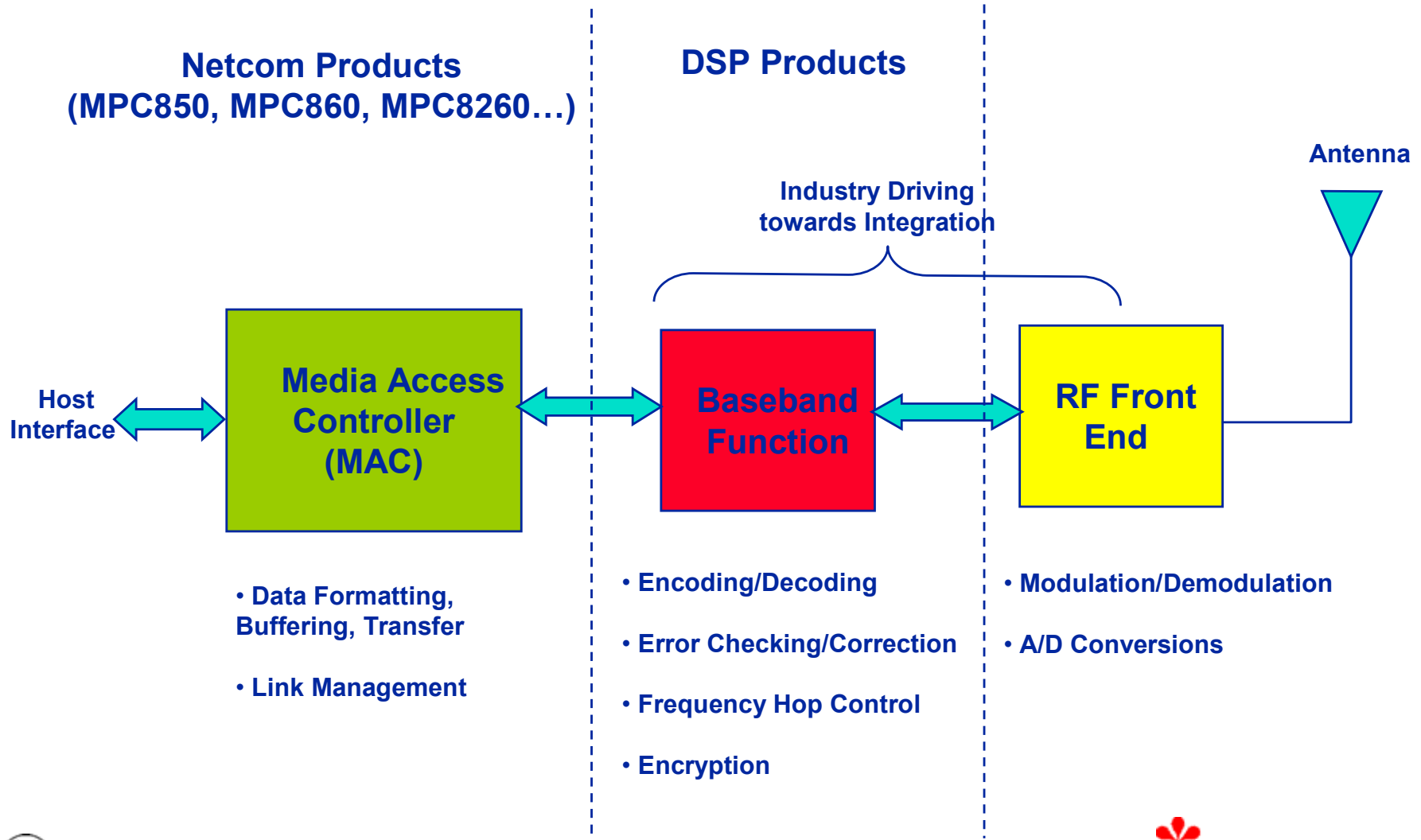


Tx/Rx Time Sharing

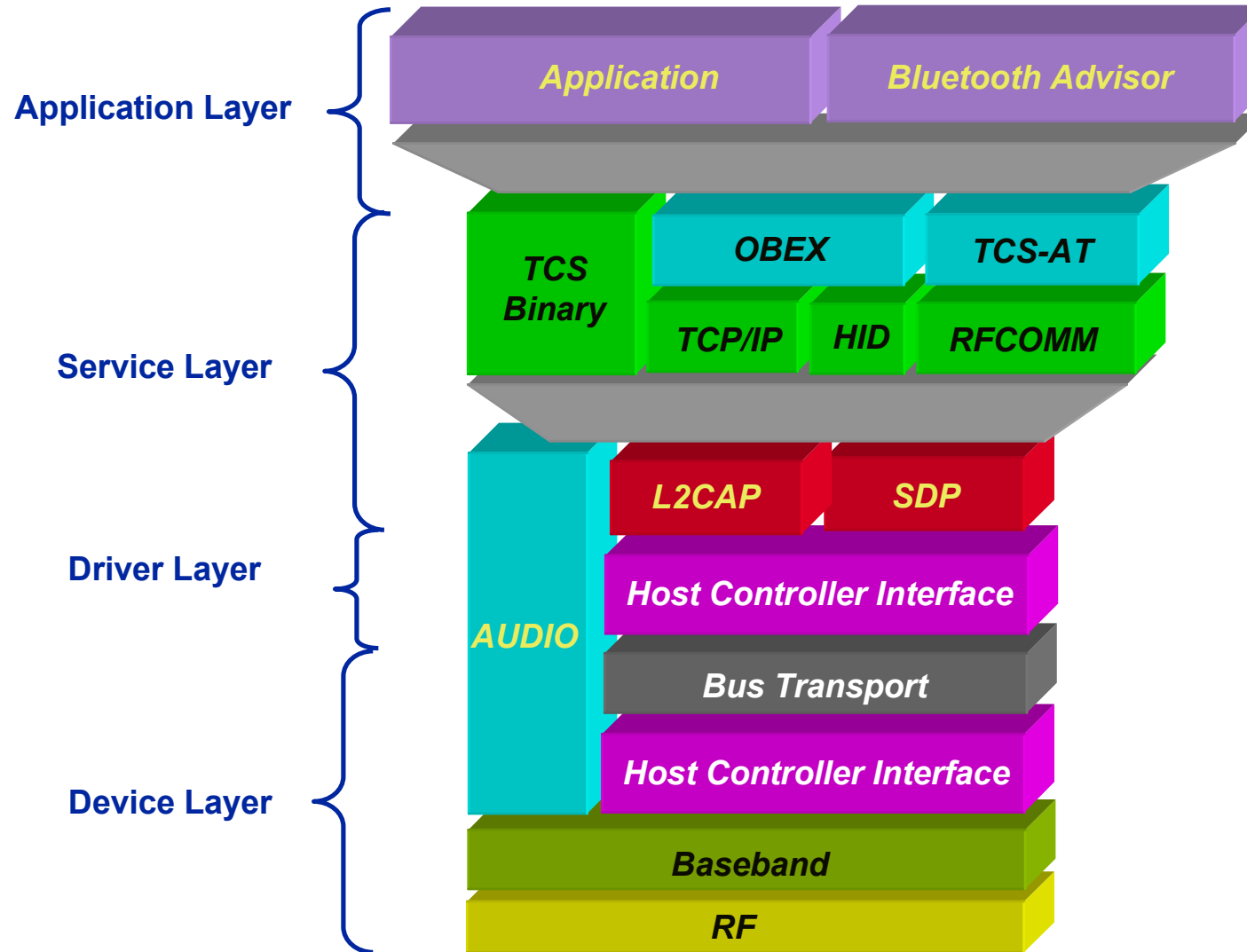
- Master and slaves alternate TX/RX
- Master transmits only in even slots
- Slaves transmit only in odd slots



Bluetooth Hardware Architecture



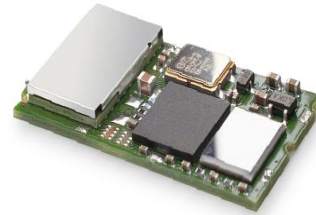
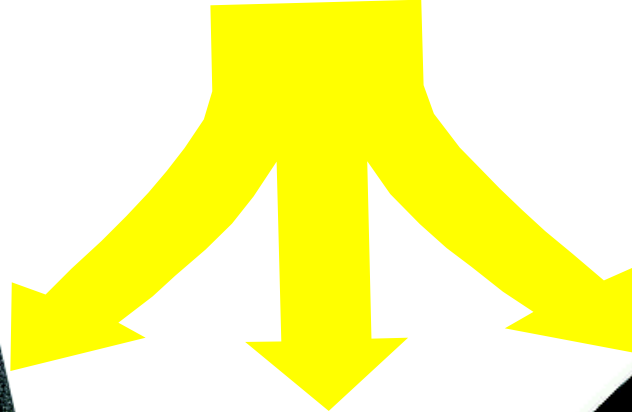
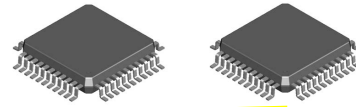
Bluetooth SW Architecture



Bluetooth Products

Baseband

RF



PCMCIA Card

EVB

USB Dongle

Why MOTOROLA?

Motorola's full range of capabilities.....

State of the art' RF technologies for cellular, paging, and broadband applications

Digianswer's system integration know-how

DSP expertise & key industry partnerships

Established leader in wireless communications



Infrastructure to drive products from concept to manufacturing and customer support.



Provides a full range of products

PC Cards
IP Modules

Complete Software stack included with products

Solution exceeds the Bluetooth specs