



# STM32 USB

2009 ST MCU



# USB

# STM32

# OTG\_FS

**USB****USB****STM32****OTG\_FS**



# USB



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**kbps**

**Mbps**  
**127**

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**PC**

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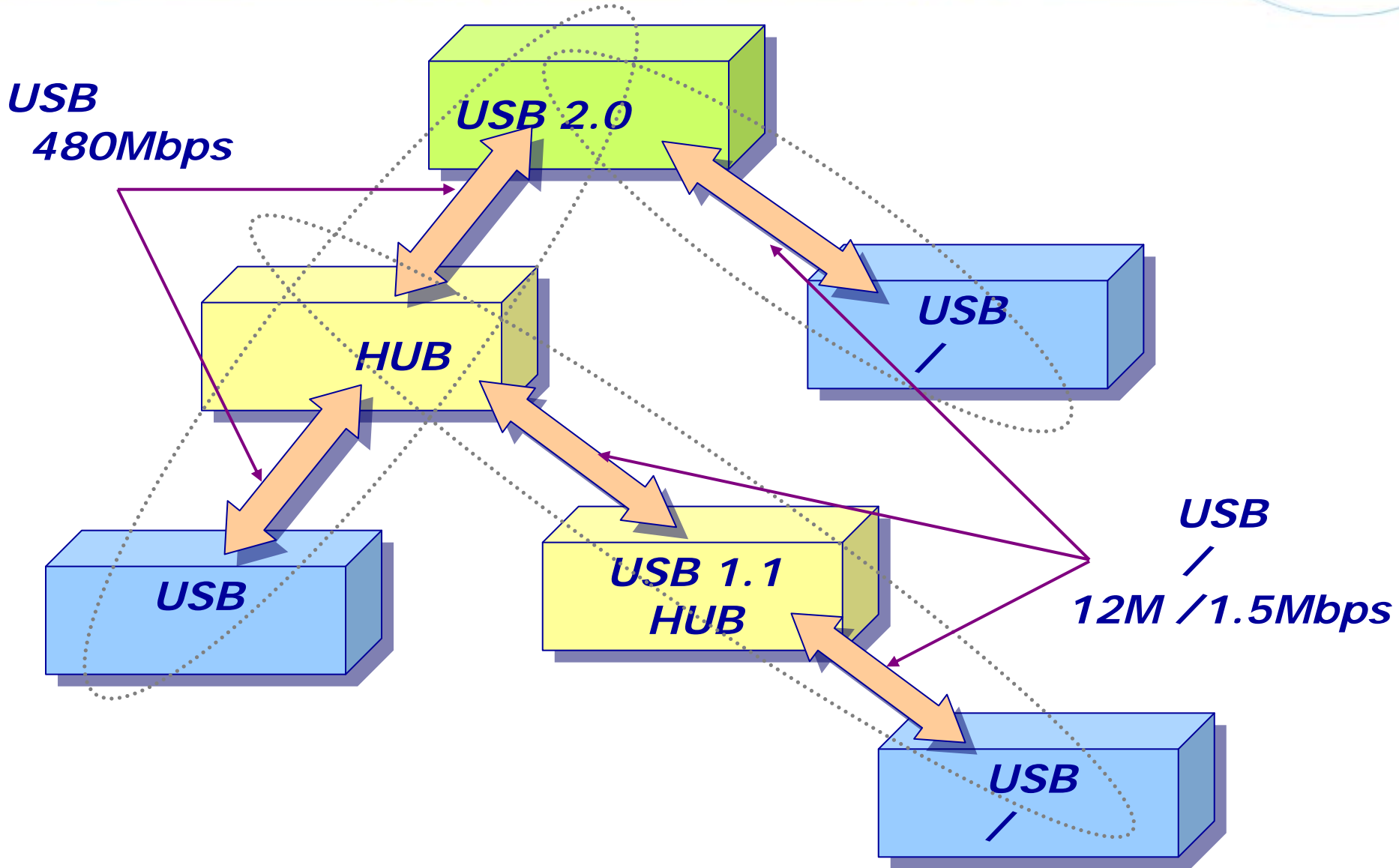
# USB

## USB

## USB

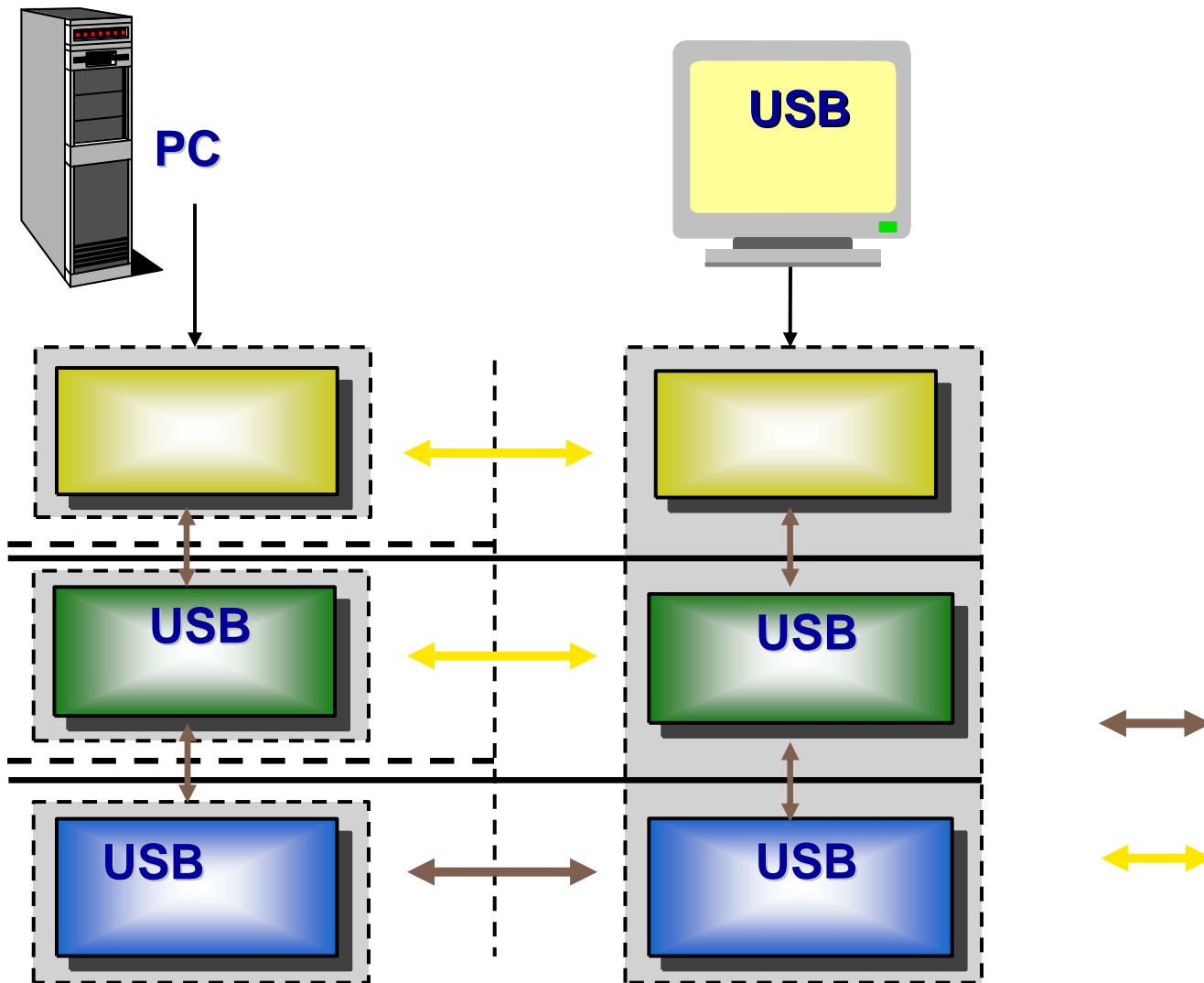
## STM32

## OTG\_FS



**USB**  
480Mbps

**USB**  
/  
12M / 1.5Mbps

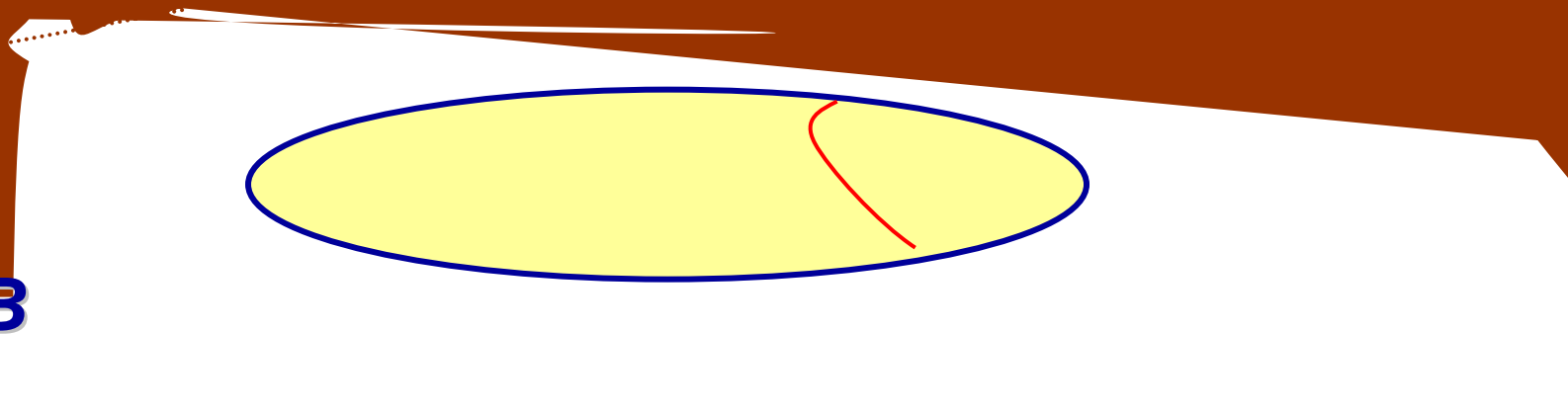




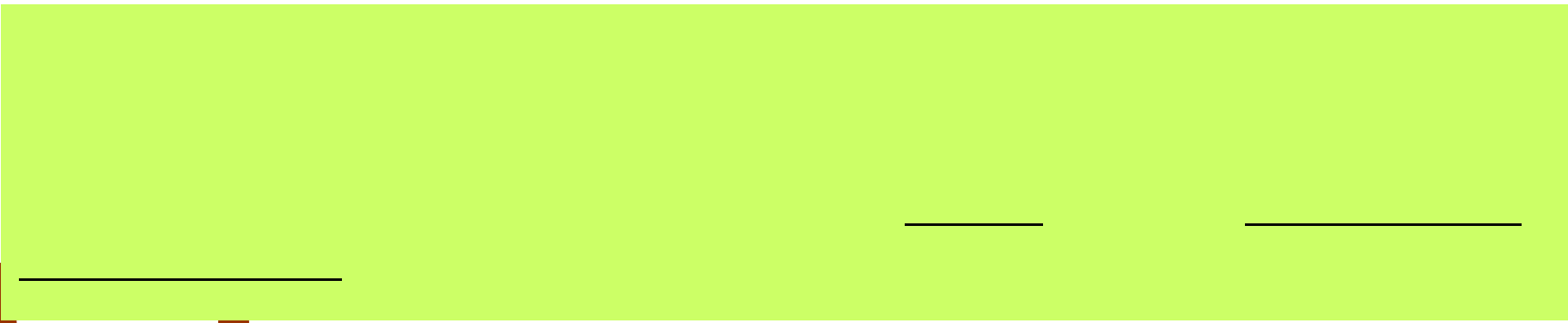


USE

**USB**



**USB**



*USB*

**USB**

USB

USB

**USB****STM32****OTG\_FS**

**(Audio)**

**(CDC)**

**(DFU)**

**(HID)**

**(CCID)**

**(Imaging)**

**(IrDA Bridge)**

**(Mass Storage)**

**(Monitor)**

**(Personal  
Health Care)**

**(Power)**

**(Physical Interface)**

**(Printer)**

**(Video)**

**(Test &  
Measurement)**

HUB

USB

(100mA)

HUB

$V_{BUS}$

HUB

$V_{BUS}$

$V_{BUS}$

2.5mA

500uA

# USB

USB

USB

USB

USB

# STM32

# OTG\_FS

## USB

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\_\_\_\_\_ ( \_\_\_\_\_ )

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( \_\_\_\_\_ )

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\_ ) ( \_\_\_\_\_

\_\_\_\_\_  
( \_\_\_\_\_ ) ,

**USB**

USB

USB

USB

USB

**USB OTG****STM32****OTG\_FS**

# USB OTG



OTG

USB

+USB

( / )

( )

Micro-AB

ID

A

ID

B

A  $V_{BUS}$   
USB

USB

HNP

B USB

HNP

USB

(SRP) B  
SRP

A  $V_{BUS}$   
 $V_{BUS}$

(HNP) B  
USB USB

HNP A

# USB

## USB

USB2.0? Õ

OTG1.3

(USB2.0ps)



USB

USB

USB

USB

USB

USB OTG

**STM32**

**OTG\_FS**

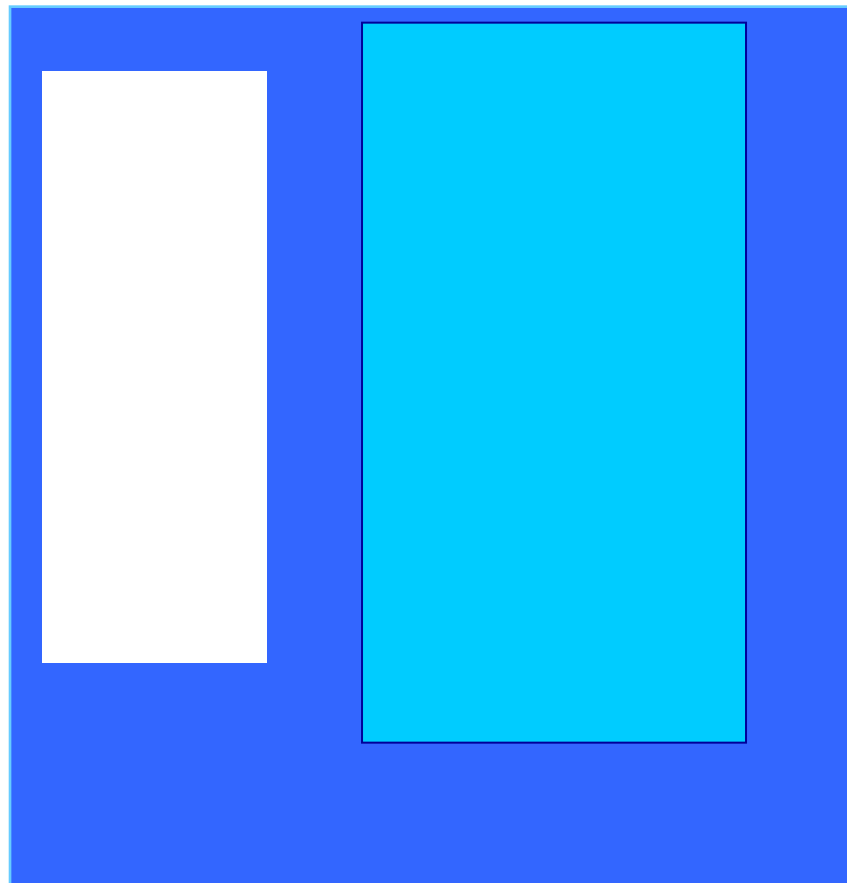
OTG\_FS

**OTG\_FS**

STM32

OTG\_FS

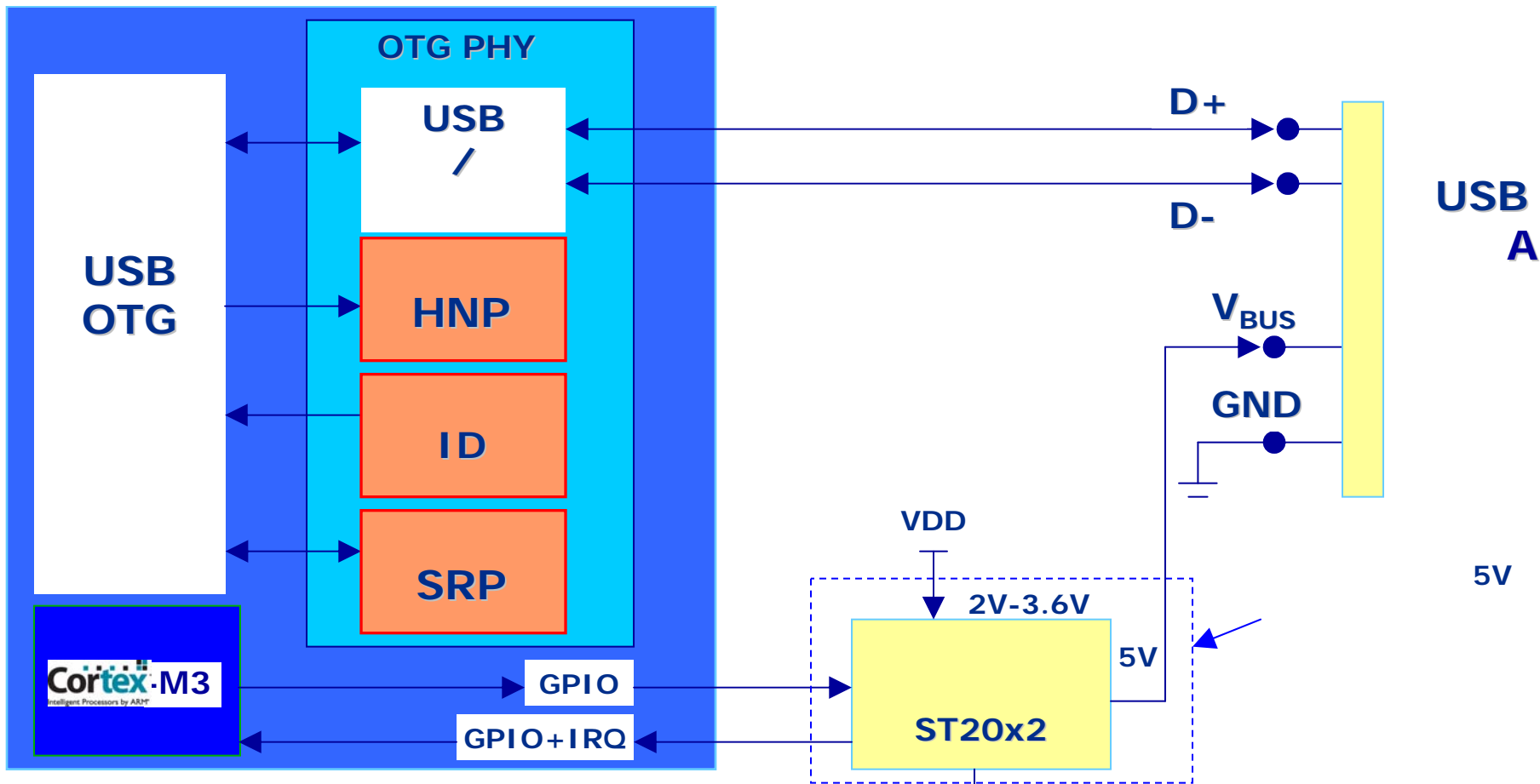
USB



D+  
D-  
 $V_{BUS}$   
GND

## STM32 OTG\_FS USB

STM32F105/STM32F107

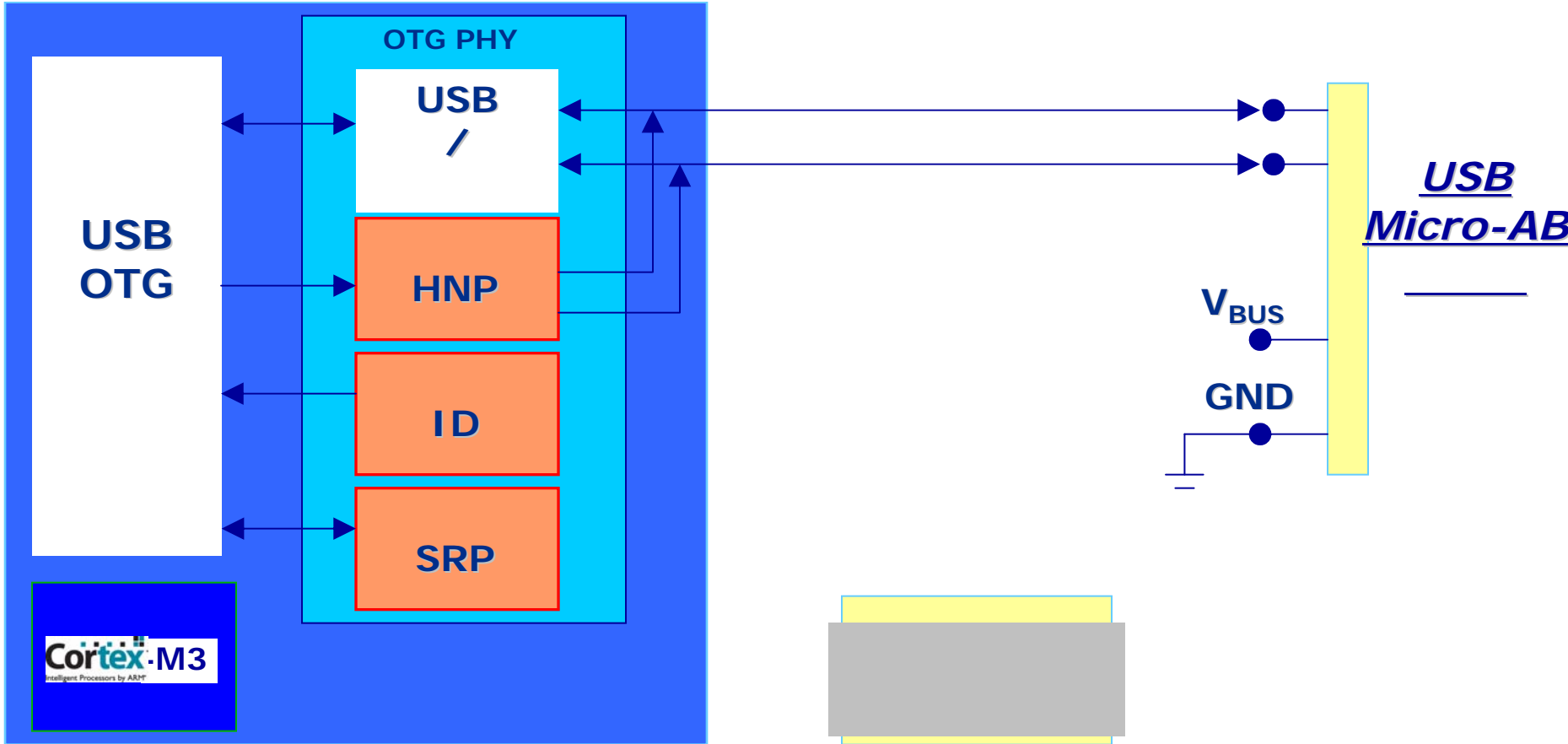


STM32

OTG\_FS

OTG

STM32F105/STM32F107



## USB

USB

USB

USB

USB

USB OTG

## STM32

## OTG\_FS

OTG\_FS

OTG\_FS

OTG\_FS

ST

Micrium

USB OTG

\_\_\_\_\_

ST

OTG\_FS

\_\_\_\_\_

ST

STM3210C

EVAL

USB

:

\_\_\_\_\_  
) MP3

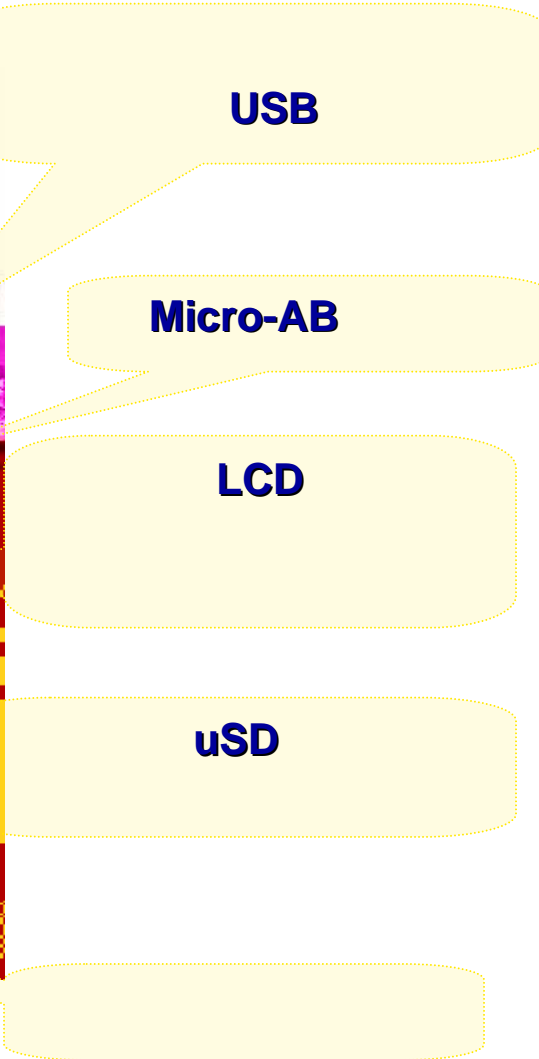
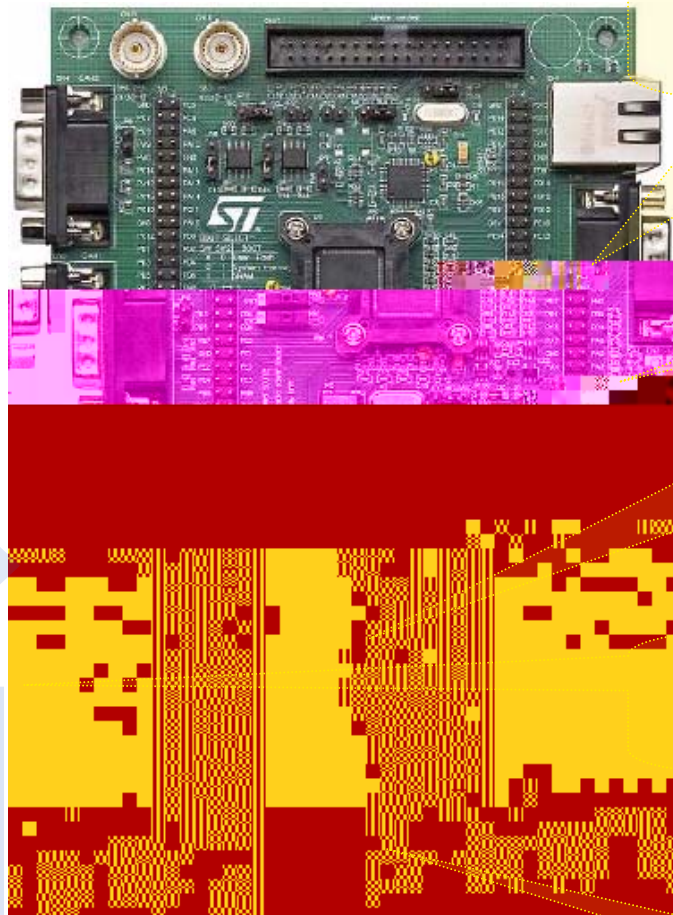
(HID ) U (Mass Storage  
) WAV ( )

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μSD U

## ST

## STM3210C EVAL



USB

Micro-AB

LCD

uSD

ST

USB

USB

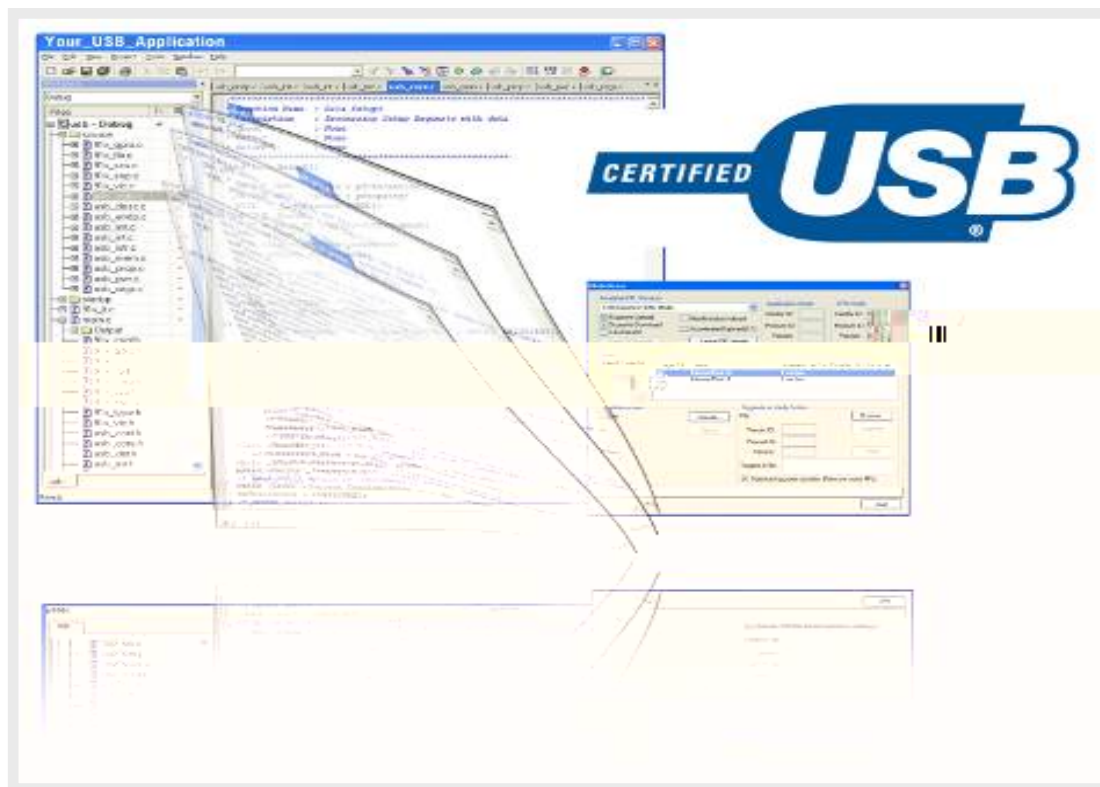
Mass storage

HID

DFU

CDC

Audio



ST

USB

## Micrium

**μC/USB :**  
HID MSD  
CDROM Audio

**μC/USB**  
HID CDC MSD  
Audio Printer  
OHCI, EHCI, UHCI

## μC/USB OTG

IAR, Keil,  
Jungo, Segger, HCC,  
Micro Digital

