

STEVAL-PCC005V1

Hard disk drive (HDD) bridge demonstration board based on the STR9 microcontroller

Data Brief

Features

- Based on the STR912 (ARM966E-S) microcontroller with in-build external memory interface (EMI)
- USB interface available for USB hard disk application
- Acts as mass-storage device using native Microsoft Windows[®] OS drivers
- On-board power supply for hard disk
- Option of using external power supply
- On-board JTAG connector for microcontroller firmware upgrade and changes
- Additional ESD protection device on USB
- LED indication for power, read and write operation and system health check

Description

The STEVAL-PCC005V1 works as a USB-based hard disk implemented using the STR912FAW44 microcontroller. The board consists of two main sections: 1) the interface of the hard-disk to the STR912FAW44 through an external memory interface (EMI), and 2) the hard disk, appearing as a removable drive on the PC, which is made possible by USB mass-storage implementation.

The on-board power supply unit can be used for powering the hard disk. The board functions with a PC as the USB host. In addition to the on-board power supply, a separate SMPS power supply can be used to power the board and the hard disk.

The LEDs available on the demonstration board indicate read or write operation.

For further information contact your local STMicroelectronics sales office.

The board also features a JTAG interface for debugging purpose.



STEVAL-PCC005V1

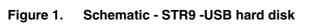
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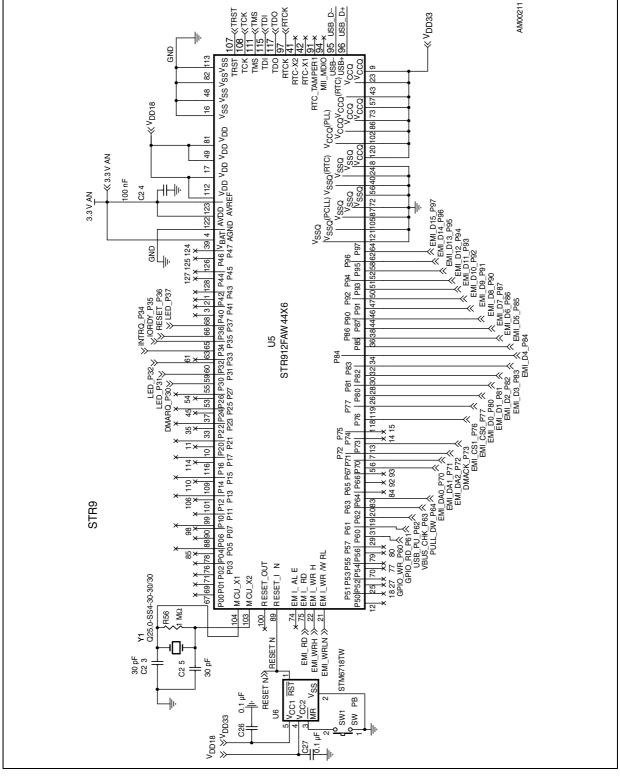
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1 Block diagram





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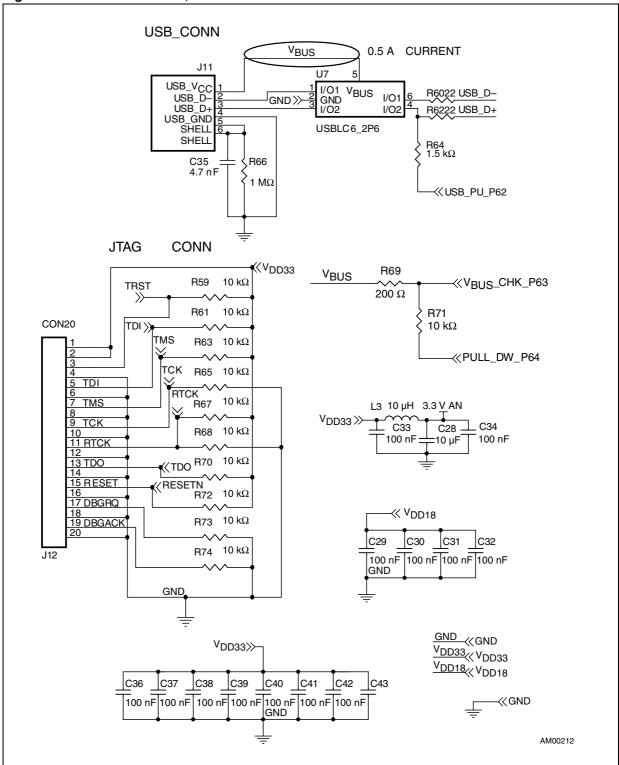


Figure 2. Schematic - USB, JTAG connectors

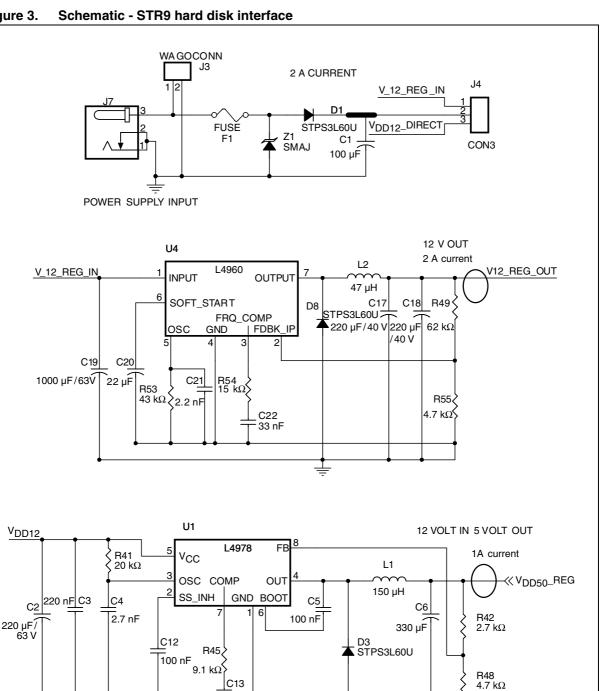


Figure 3.



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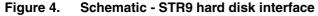
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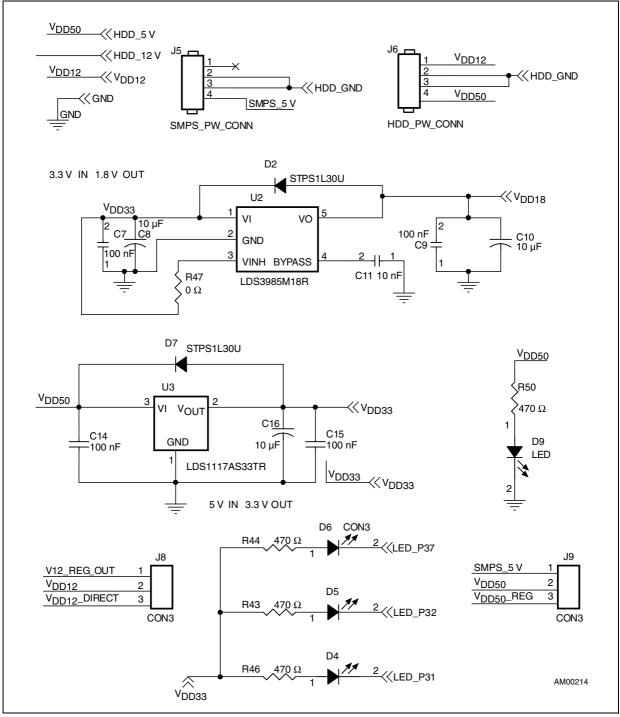
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V_{DD50}_REG

≪v_{DD50}_reg

AM00213





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$ \begin{array}{c} \label{eq:relation} & eq:rela$	Figure 5. Schematic -hard disk connector with termination resistor
$ \begin{array}{c} \text{HILDDISK 40PN} \\ \text{HIDDISK 40PN} \\ HIDDISK 40PN $	HEADER2 HEADER
HESET P36 HDD_T_P87 FM_D7_P87 FM_D7_P87 FM_D7_P87 FM_D7_P87 FM_D7_987 FM_D7_986 FM_D6_986 FM_2 FM_2 FM 2332 FM_D0_GND FM_D2_983 FM_D0_GND FM_D2_983 FM_D0_GND FM_D2_983 FM_D0_GND FM_D0_GND FM_D0_980 FM_17 332 FM_D0_GND FM_102_983 FM_102_983 FM_102_983 FM_102_983 FM_102_983 FM_102_983 FM_102_900 FM_102_90 FM_	K 40 PIN CONN HDD_DATA 8 HDD_DATA 8 HDD_DATA 8 HDD_DATA 8 HDD_DATA 8 HDD_DATA 8 HDD_DATA 10 HDD_DATA 11 HDD_DATA 12 HDD_DATA 13 HDD_GND 24 HDD_GND 26 HDD_OCS16- 32 HDD_CS16- 36 HDD_CS1- 38 HDD_CS1- 38 HDD_CS1- 38 HDD_CS1- 36 HDD_CS1- 36 HDD_CS1- 36 HDD_CS1- 36 HDD_CS1-
EMI_D7_P87 RESET_P36 R1 33.0 FM_D7_P87 FM_D6_P86 R5 33.0 FM_D5_P87 FM_D6_P86 R5 33.0 FM_D6_R85 FM_5 33.0 FM_D6_R85 R3 33.0 FM_D6_R85 R3 33.0 FM_105_P87 R17 33.0 FM_105_R85 R13 33.0 FM_105_R85 R13 33.0 FM_105_R85 R17 82.0 FM_105_R85 R17 R22 FM_105_R85 R21 R22 FM_105_R85 R31 R32 FM_105_R85 R31 R33	33 33<
EMI_D7_P87 RESE EMI_D7_P87 EMI_D 10 kΩ2 EMI_D EMI_D EMI_D EMI_D EMI_D 20 82 Ω P10 HDD_SV EMI_D EMI_D FORD EMI_D	M H1 33.0 R1 33.0 R1 R2 33.0 R1 R35 R1 33.0 R1 33.0 R1 R35 R2 20 R2 23.0 R1 R35 R2 20 R35 R2 22.0 R32 23.0 R1 R32 23.0 R1 R33 R33.0 R1 R33 R33.0 R1 R33 R33.0 R1 R32 22.0 R1 R33 R33.0 R1 R32 23.0 R1
EMI_D7_P8 EMI_D7_P8 EMI_D7_P8 EMI_D7_P8 EMI_D7_P8 EMI_D7_P8 EMI_D7_P8 EMI_D7_P8 EMI_D7_P8 EMI_D7_P8	RESE RESE RESE EMI_D SV % EMI_D EMI_D EMI_D EMI_D EMI_D ACK_P73 ACK_P73
DMARQ_P30 >> BMARQ_P30 >> R20 5.6 kΩ BDGND>> HDDGND>>	EMI_D7_P8 EMI_D7_P8 82.0 HDD_G R19 HDD_G R19 HDD_G R19 HDD_G R19 HDD_G
	DMARQ_P30 >>

Figure 5. Schematic -hard disk connector with termination resistor

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2 Revision history

Table 1.Document revision history

Date	Revision	Changes
02-Sep-2008	1	Initial release



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