UM0374
User manual

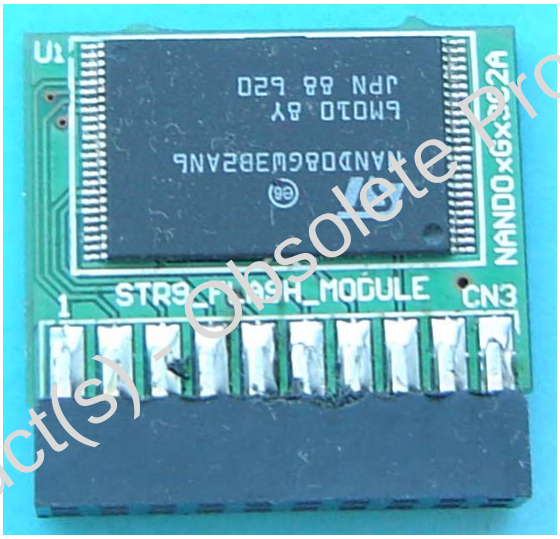
STR9 Flash extension

Introduction

This user manual describes the STR9 Flash extension hardware. As well as the block diagram and schematics of the extension, a bill of materials and assembly instructions are also included.

The STR9 Flash extension is used to connect to the extended connector of the STR9 dongle, thus increasing the mass storage capacity of an application. The NAND Flash technology allows the storage of up to 1 GB through a parallel interface. A basic driver is available for data access from the Flash extension.

Figure 1. STR9 Flash extension board



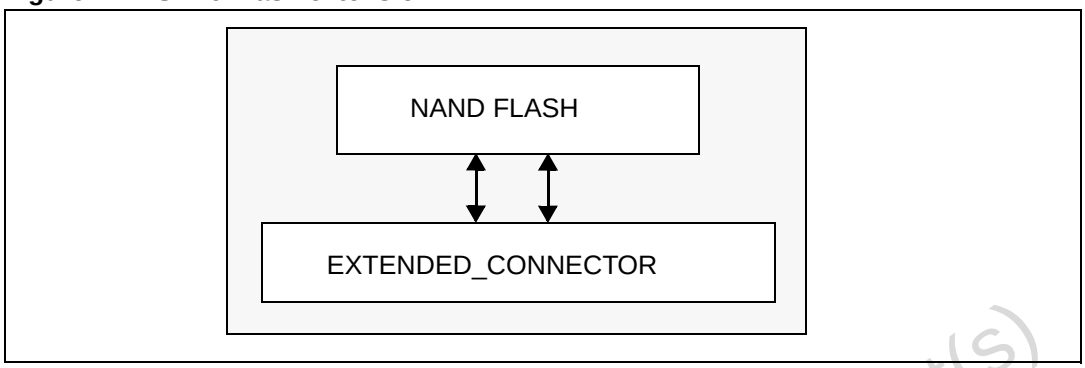
Contents

1 STR9 Flash extension

1.1 Block diagram

This board is designed for connection with the STR9 dongle through its extended connector.

Figure 2. STR9 Flash extension



Main board features:

- ST NAND Flash up to 8 Gbits (1 GB)

1.2 Schematics

Figure 3. STR9 Flash extension schematics

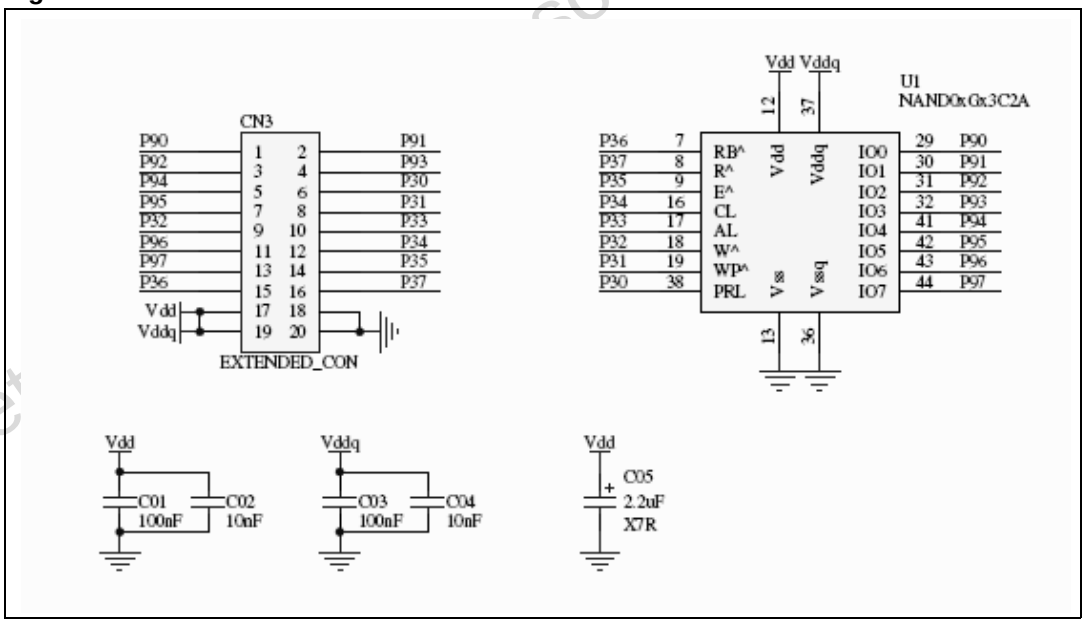


Table 1. Extended connector

Connector pin	Flash data	Flash control
P90	IO0	-
P91	IO1	-
P92	IO2	-
P93	IO3	-
P94	IO4	-
P30	-	PRL
P95	IO5	-
P31	-	$\overline{WP}$
P32	-	$\overline{W}$
P33	-	AL
P96	IO6	-
P34	-	CL
P97	IO7	-
P35	-	$\overline{E}$
P36	-	$R\overline{B}$
P37	-	$\overline{R}$

1.3 NAND0xG devices

NAND0xG logic diagram and list of signals are shown in *Figure 4* and *Table 2*. For further information, refer to the datasheet for the relevant NAND Flash memory.

Figure 4. NAND0xG logic diagram

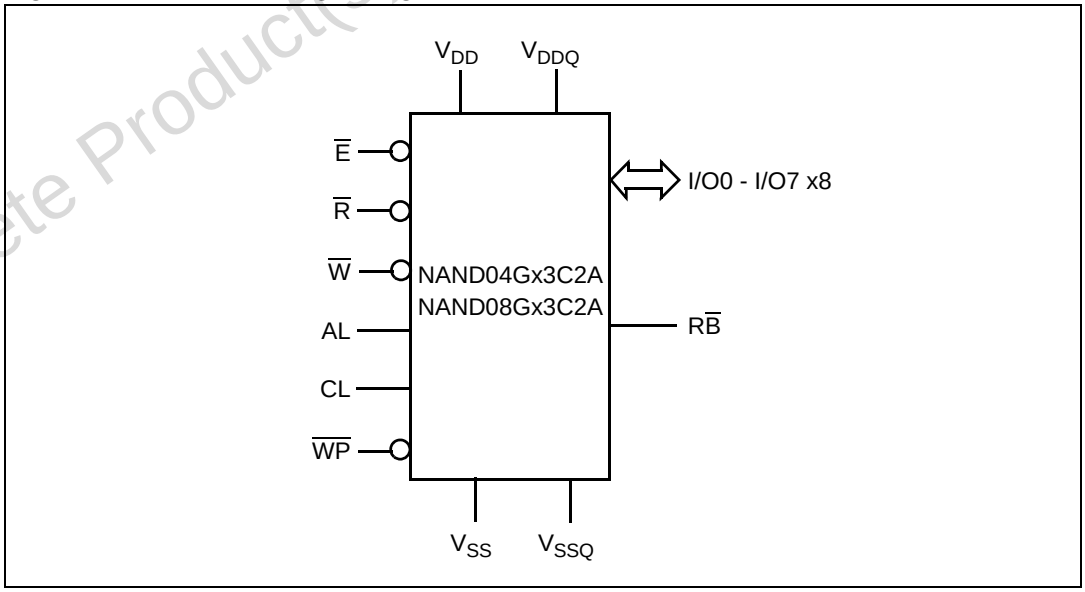


Table 2. NAND0xG list of signals

Pin	Description
I/O0 - I/O7	Data inputs/outputs
CL	Command latch enable
AL	Address latch enable
$\overline{E}$	Chip enable
$\overline{R}$	Read enable
$\overline{W}$	Write enable
$\overline{WP}$	Write protect
$R\overline{B}$	Read/busy (open drain output)
V_{DD}	Power supply
V_{DDQ}	I/O power
V_{SS}	Ground
V_{SSQ}	I/O power
NC	No connection
DU	Do not use

1.4 PCB layout

Figure 5. Top view

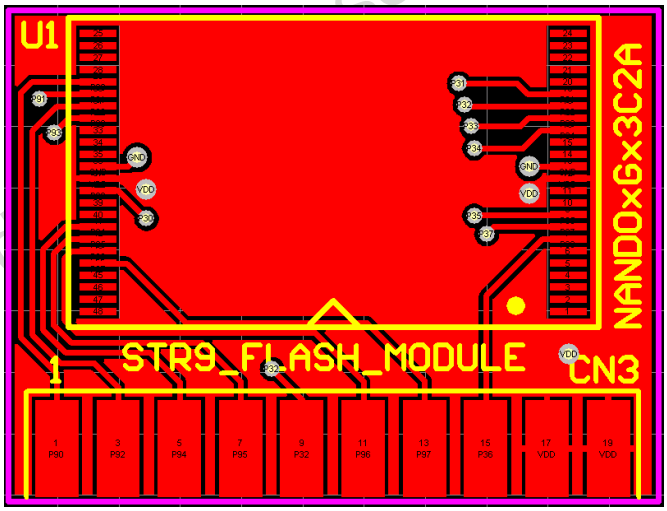
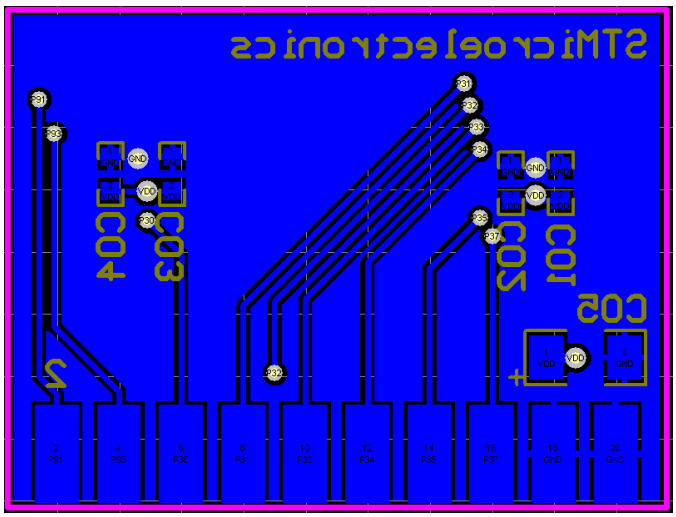


Figure 6. Bottom view



1.5 Bill of materials and assembly recommendations

Table 3. Bill of materias and assembly recommendations

Label	Comment	Footprint	Description	Assembly	Order code
C01	Capacitor	603	100nF	YES	Farnell: 422-6859 (X7R)
C02	Capacitor	603	10nF	YES	Farnell: 422-6938 (X7R)
C03	Capacitor	603	100nF	YES	Farnell: 422-6859 (X7R)
C04	Capacitor	603	10nF	YES	Farnell: 422-6938 (X7R)
C05	Pol. Capacitor	1206	2.2uF	Recommended	Farnell: 422-7323 (X7R)
CN3	2x10 Header	HDR2X10	EXTENDED_CON	YES	GM: BL220G
U1	NAND FLASH	TSOP48	NAND0xGx3C2A	YES	ST: NAND0xGx3C2A

2 Revision history

Table 4. Document revision history

Date	Revision	Changes
19-Jan-2007	1	Initial release.
13-Nov-2007	2	Updated *Figure 1: STR9 Flash extension board*.

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