

Overview

2635-EK is a stand-alone evaluation board based on SAM2635 (Low-Power Synthesizer with Effects and built-in CODEC) dedicated to low cost and low power applications.

Beside the SAM2635 the 2635-EK hardware includes:

- 1 * 256Mbit Flash Memory NUMONYX M29W256GL70. Optionally, 512Mbit Flash can be mounted.

Operating Mode

2635-EK operates in two modes:

- Program mode:
The board is connected to a PC through the Dream USB-DBG-IF adaptor. The firmware and sound bank can be downloaded into Flash memory with ProgSam PC tool.
- Stand-alone mode:
SAM2635 executes the program from the Flash memory and can talk with external devices via the MIDI connectors.

In Stand Alone mode, if using standard firmware, the MIDI baud rate can be chosen:

- If pin P3 (pin 5, J1) is LOW, baud rate is standard MIDI baud rate 31.25kbit/s (default state, internal pull-down on P3)
- If pin P3 (pin 5, J1) is HIGH, baud rate is 38.4kbit/s with standard COM port

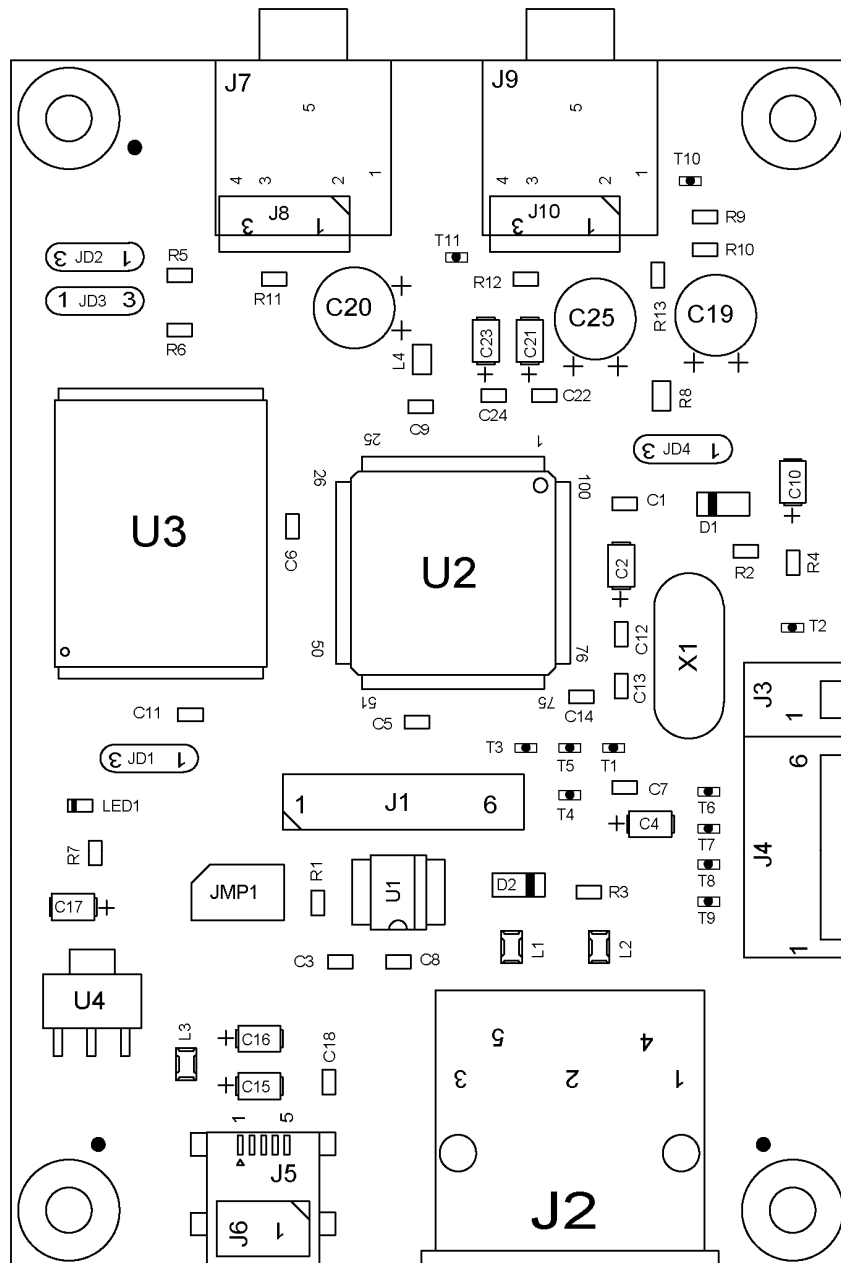
Connectors Configuration

Name	Reference	Type	Description
GPIOs	J1	1*6	General purpose I/Os P[3-0]
MIDI IN	J2	5-pin DIN	Standard MIDI IN at 31.25kb/s
DEBUG / PROGRAM	J3	1*2	Reset for Flash programming. Compatible with Dream USB-DBG-IF
DEBUG / PROGRAM	J4	1*6	Serial connection for Flash programming, MIDI In/Out (CMOS levels). Compatible with Dream USB-DBG-IF
USB PWR SUPPLY	J5	Mini USB B	Power Supply, +5V/500mA
USB PWR SUPPLY	J6 (Optional)	1*2	Power Supply, +5V/500mA
MIKE INPUT	J7	Mini Jack	Mike audio input(2Vpp Max)
MIKE INPUT	J8 (Optional)	1*3	Mike audio input(2Vpp max)
LINE OUT STEREO	J9	Mini Jack	Stereo audio output (2Vpp max)
LINE OUT STEREO	J10 (Optional)	1*3	Stereo audio output (2Vpp max)

Jumper Configuration

Reference	Default Setting	Description
JMP1	Mounted	Should be mounted for using MIDI IN on 5-pin DIN connector (J2) Should be removed if using fast MIDI on J4
JD1	VD33	Select Reset source for flash memory <ul style="list-style-type: none"> • Power supply: VD33 • Delayed Reset: RES/
JD2	A-Open B-Closed	Crystal frequency select: <ul style="list-style-type: none"> • JD2 A-Closed/B-Open, JD3 A-Closed/B-Open: 12.288 MHz • JD2 B-Closed/A-Open, JD3 A-Closed/B-Open: 11.2896 MHz • JD2 A-Closed/B-Open, JD3 B-Closed/A-Open: 9.6 MHz • JD1 B-Closed/A-Open, JD3 B-Closed/A-Open: 12 MHz
JD3	A-Closed B-Open	
JD4	GND	System clock divider. <ul style="list-style-type: none"> • GND: System clock = Xtal freq • VD33: System clock = Xtal freq divided by 1.25

Layout



Bill of Material

2635-EK.DSN

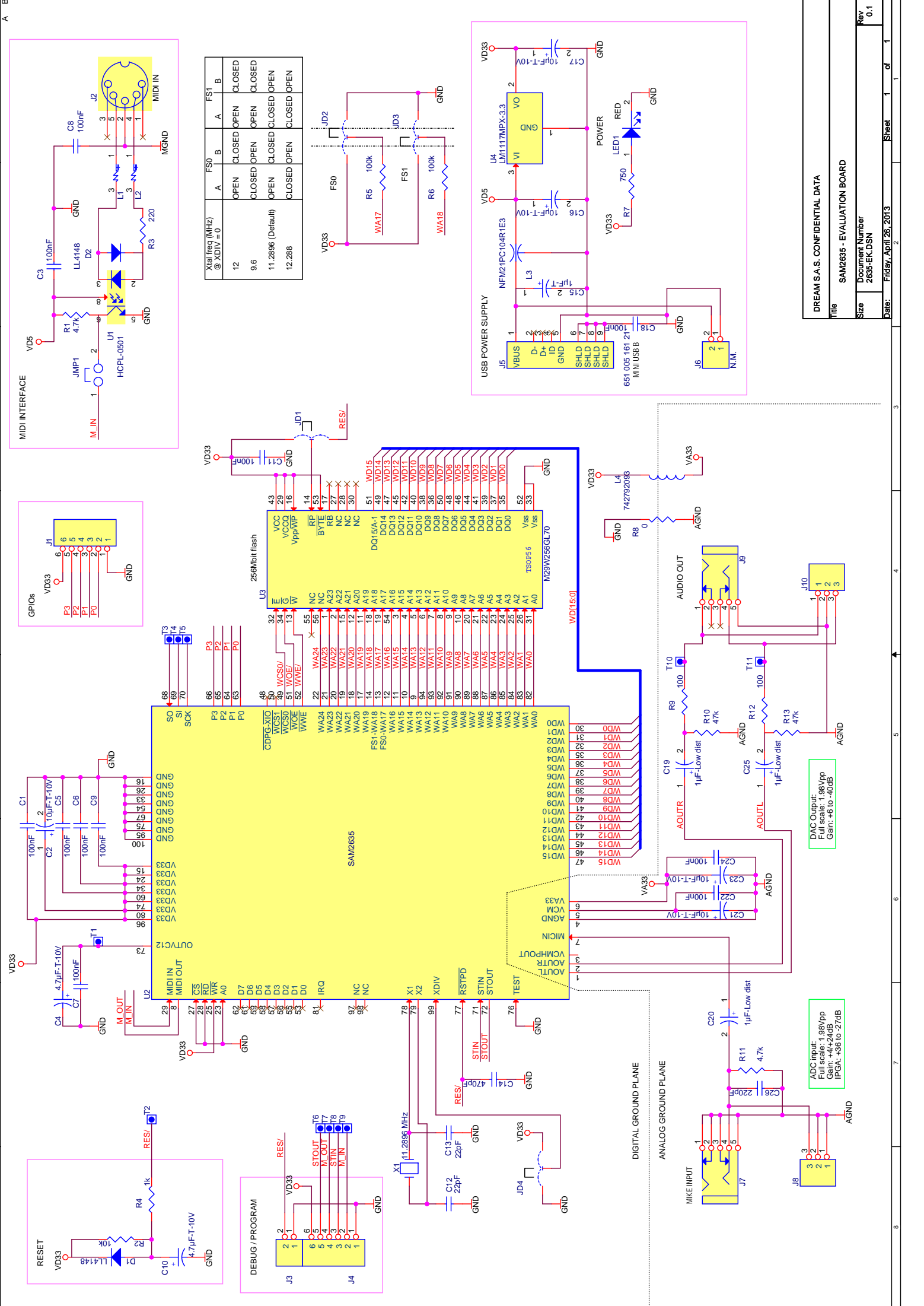
Revision: 0.1

Bill of Materials

April 26, 2013

Page1

Item	Quantity	Reference	Part	Manufacturer	Designation
1	11	C1, C3, C5, C6, C7, C8, C9, C11, C18, C22, C24	100nF		
2	5	C2, C16, C17, C21, C23	10µF-T-10V		
3	2	C4, C10	4.7µF-T-10V		
4	2	C12, C13	22pF		
5	1	C14	470pF		
6	1	C15	1µF-T		
7	3	C19, C20, C25	1µF-Low dist	PANASONIC	ECA1HAM010X
8	1	C26	220pF		
8	2	D1, D2	LL4148	VISHAY	LL4148
9	4	JD1, JD2, JD3, JD4	Jumper Disk2P		
10	1	JMP1	Jumper1P	Generic	BA25-Male-7mm-Gold
11	1	J1	HEAD_6		
12	1	J2	MIDI_DIN		
13	1	J3	MLSS100-02	ITW PANCON	MLSS100-02
14	1	J4	MLSS100-06	ITW PANCON	MLSS100-06
15	1	J5	651 005 161 21	WERI	651 005 161 21
16	1	J6	N.M.		
17	2	J7, J9	JACK 3.5 STEREO	3E	15.427
18	2	J8, J10	N.M.		
19	1	LED1	TLMS1000-Vishay	VISHAY	TLMS1000-GS08
20	2	L1, L2	NFM21CC102R1H3	MURATA	NFM21CC102R1H3
21	1	L3	NFM21PC104R1E3	MURATA	NFM21PC104R1E3
22	1	L4	742792093	WURTH	742792093
23	1	R1	4.7k		
24	1	R2	10k		
25	1	R3	220		
26	1	R4	1k		
27	3	R5, R6, R11	100k		
28	1	R7	750		
29	1	R8	0		
30	2	R9, R12	100		
31	2	R10, R13	47k		
32	1	U1	HCPL-0501		
33	1	U2	SAM2635	DREAM	SAM2635
34	1	U3	M29W256GL70	NUMONYX	M29W256GL70N
35	1	U4	LM1117MPX-3.3	NS	LM1117MPX-3.3
36	1	X1	11.2896 MHz		



Xtal freq (MHz) @ XDIV = 0	FS0	FS1	FS2	FS3	FS4	FS5
12	OPEN	CLOSED	OPEN	CLOSED	OPEN	CLOSED
9.6	CLOSED	OPEN	CLOSED	OPEN	CLOSED	OPEN
11.2896 (Default)	OPEN	CLOSED	OPEN	CLOSED	OPEN	CLOSED
12.288	CLOSED	OPEN	CLOSED	OPEN	CLOSED	OPEN

Dream Contact

info@dream.fr

Website

<http://www.dream.fr>

*This publication neither states nor implies any warranty of any kind, including, but not limited to, implied warrants of merchantability or fitness for a particular application. Dream assumes no responsibility for the use of any circuitry. No circuit patent licenses are implied.
The information in this publication is believed to be accurate in all respects at the time of publication but is subject to change without notice. Dream assumes no responsibility for errors and omissions, and disclaims responsibility for any consequences resulting from the information included herein.*