

Table 1: STEVAL-FCU001V1 bill of materials

Item	Q.ty	Ref.	Part/Value	Description	Manufacturer	Order code
1	1	BT1	Battery Connector siptm2002	Strip Line male 1X2 pitch 2,54mm	ANY	DNM
2	1	CN1	Micro_USB 2,0 Female SMt microusb7025481		Molex	47590-0001
3	7	C1, C7, C14, C17, C19, C21, C24	1 μ F 16 V \pm 10% smc0402	Ceramic capacitor XR7	ANY	
4	13	C2, C3, C4, C5, C6, C10, C12, C15, C18, C20, C22, C23, C25	100 nF 16 V \pm 10% smc0402	Ceramic capacitor XR7	ANY	
6	2	C8, C9	15 pF 16 V \pm 10% smc0402	Ceramic capacitor XR7	ANY	
7	2	C11, C16	4.7 μ F 16 V \pm 10% smc0402	Ceramic capacitor XR7	ANY	
8	1	C13	4.7 nF 16 V \pm 10% SMC0402	Ceramic capacitor XR7	ANY	
9	4	D1, D2, D3, D4	BAT60JFILM 10v-3A sod323	Signal Schottky diode	ST	BAT60J
10	1	D5	ESDA7P60-1U1M SMD1610	Voltage Suppressor	ST	ESDA7P60-1U1M
11	3	LD1, LD2, LD3	smd0603	Red LED	ANY	ANY
13	1	P1	Motor_Panel1 siptm2002 2.54 mm	Strip Line male 1X2 pitch	ANY	DNM
14	1	P2	Motor_Panel3 siptm2002 2.54 mm	Strip Line male 1X2 pitch	ANY	DNM
15	1	P3	i2Q siptm4004 2.54 mm	Strip Line male 1X4 pitch	ANY	DNM
16	1	P4	Motor_Panel2 siptm2002 2.54 mm	Strip Line male 1X2 pitch	ANY	DNM
17	1	P5	Motor_Panel4 siptm2002 2.54 mm	Strip Line male 1X2 pitch	ANY	DNM
18	1	P6	FC_Signal siptm6006 2.54 mm	Strip Line male 1X6 pitch	ANY	DNM
19	1	P7	USART siptm4004 2.54 mm	Strip Line male 1X4 pitch	ANY	DNM
20	1	P8	SWD Amprmode10X1M27 1.27 mm	Connector 2X5 pitch	CNC Tech	3220-10-0100-00
21	4	Q1, Q2, Q3, Q4	STL6N3LLH6 powerFLAT2X2	Power MOSFET	ST	STL6N3LLH6

Item	Q.ty	Ref.	Part/Value	Description	Manufacturer	Order code
22	1	R1	47 k 1/16 W ±1% smr0402	SMD Thick Film Resistor	ANY	
23	4	R2, R3, R6, R8	100 1/16 W ±1% smr0402	SMD Thick Film Resistor	ANY	
24	7	R4, R5, R7, R9, R10, R23, R24	10 K 1/16 W ±1% smr0402	SMD Thick Film Resistor	ANY	
25	1	R11	20 K 1/16 W ±1% smr0402	SMD Thick Film Resistor	ANY	
26	4	R12, R13, R16, R17, R25	0 1/16 W ±1% smr0603	SMD Thick Film Resistor	ANY	
27	4	R14, R15, R18, R19	NA 1/16 W ±1% smr0402	SMD Thick Film Resistor	ANY	
28	2	R20, R21	2.2 K 1/16 W ±1% smr0402	SMD Thick Film Resistor	ANY	
29	3	R22, R27, R28	100 K 1/16 W ±1% smr0402	SMD Thick Film Resistor	ANY	
30	1	R26	1 M 1/16 W ±1% SMR0402	SMD Thick Film Resistor	ANY	
31	1	R29	510 R 1/16 W ±1% smr0402	SMD Thick Film Resistor	ANY	
32	1	R30	5.1 K 1/16 W ±1% smr0402	SMD Thick Film Resistor	ANY	
33	1	S1	Reset PushKMR22	Push button	C&K	KMR231GLFS
34	1	U1	SPBTLE-RF spbtrfle	Very low power module for Bluetooth v4.1	ST	SPBTLE-RF
35	1	U2	STM32F401CCU6TR UFQFPN48X7X7	High-performance ARM® Cortex® - M4 core accelerator	ST	STM32F401CCU
36	1	U3	USBULC6-2M6(uQFN) uQFN6X145X1	Ultra large bandwidth ESD protection	ST	USBULC6-2M6(uQFN)
37	1	U4	STC4054GR SOT23L5	Li-Ion battery charger	ST	STC4054
39	1	U6	LD39015M33R sot23l5	Low quiescent current and low noise voltage regulator	ST	LD39015M33R
40	1	U7	LPS22HDTR HLGA10X2X2X07	MEMS nano pressure sensor	ST	LPS22HDTR
41	1	U8	LSM6DSL lga14X2m5X3X086	3D digital accelerometer and gyroscope	ST	LSM6DSL

Item	Q.ty	Ref.	Part/Value	Description	Manufacturer	Order code
42	1	U9	LIS2MDL Iga12X2X2X1	Ultra-low-power, high-performance 3-axis magnetometer	ST	LIS2MDL
43	1	Y1	16 MHz 15 ppm quarzonx2520sa	Quartz	NDK	NX2520SA-16,000000MHz-STD-CSW-4
44	1		Olimex LTD ARM-JTAG-20-10	Mini-board and cable	Olimex	ARM-JTAG-20-10

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By using this evaluation board or kit (together with all related software, firmware, components, and documentation provided by ST, "Evaluation Board"), You ("You") are agreeing to be bound by the terms and conditions of this Evaluation Board License Agreement ("Agreement"). Do not use the Evaluation Board until You have read and agreed to this Agreement. Your use of the Evaluation Board constitutes Your acceptance of this Agreement.

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STMicroelectronics ("ST") grants You the right to use the enclosed Evaluation Board offering limited features only to evaluate and test ST products solely for Your evaluation and testing purposes in a research and development setting. The Evaluation Board shall not be, in any case, directly or indirectly assembled as a part in any production of Yours as it is solely developed to serve evaluation purposes and has no direct function and is not a finished product. If software and/or firmware is accompanied by a separate end user license agreement ("EULA"), then such software and/or firmware shall be governed by such EULA.

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Notice applicable to Evaluation Boards not FCC-Approved

This kit is designed to allow:

1. Product developers to evaluate electronic components, circuitry, or software associated with the kit to determine whether to incorporate such items in a finished product and
2. Software developers to write software applications for use with the end product.

This kit is not a finished product and when assembled may not be resold or otherwise marketed unless all required FCC equipment authorizations are first obtained. Operation is subject to the condition that this product not cause harmful interference to licensed radio stations and that this product accept harmful interference. Unless the assembled kit is designed to operate under part 15, part 18 or part 95 of 47 CFR, Chapter I ("FCC Rules"), the operator of the kit must operate under the authority of an FCC license holder or must secure an experimental authorization under part 5 of this chapter.

For Evaluation Boards annotated as FEDERAL COMMUNICATIONS COMMISSION (FCC) Part 15 Compliant

- **FCC Interference Statement for Class A Evaluation Boards:** This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction

manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

- **FCC Interference Statement for Class B Evaluation Boards:** This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
 - Reorient or relocate the receiving antenna.
 - Increase the separation between the equipment and receiver.
 - Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
 - Consult the dealer or an experienced radio/TV technician for help.
- This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

WARRANTY

ST WARRANTS THAT IT HAS THE RIGHT TO PROVIDE THE EVALUATION BOARD TO YOU. THIS WARRANTY IS PROVIDED BY ST IN LIEU OF ALL OTHER WARRANTIES, WRITTEN OR ORAL, STATUTORY, EXPRESS OR IMPLIED, INCLUDING ANY WARRANTY AS TO MERCHANTABILITY, NON-INFRINGEMENT, FITNESS FOR ANY PARTICULAR PURPOSE, OR UNINTERRUPTED OR ERROR-FREE OPERATION, ALL OF WHICH ARE EXPRESSLY DISCLAIMED. THE EVALUATION BOARD IS PROVIDED "AS IS".

YOU WARRANT TO ST THAT YOU WILL ENSURE THE EVALUATION BOARD IS USED ONLY BY ELECTRONICS EXPERTS WHO UNDERSTAND THE DANGERS OF HANDLING AND USING SUCH ITEMS, YOU ASSUME ALL RESPONSIBILITY AND LIABILITY FOR ANY IMPROPER OR UNSAFE HANDLING OR USE OF THE EVALUATION BOARD BY YOU, YOUR EMPLOYEES, AFFILIATES, CONTRACTORS, AND DESIGNEES.

LIMITATION OF LIABILITIES

IN NO EVENT SHALL ST BE LIABLE TO YOU, WHETHER IN CONTRACT, TORT (INCLUDING NEGLIGENCE), STRICT LIABILITY, OR ANY OTHER LEGAL THEORY, FOR ANY INDIRECT, SPECIAL, CONSEQUENTIAL, INCIDENTAL, PUNITIVE, OR EXEMPLARY DAMAGES WITH RESPECT TO ANY MATTERS RELATING TO THIS AGREEMENT, REGARDLESS OF WHETHER ST HAS BEEN ADVISED OF THE POSSIBILITY OF THE SAME. IN NO EVENT SHALL ST'S LIABILITY ARISING OUT OF THIS AGREEMENT IN THE AGGREGATE EXCEED THE AMOUNT PAID BY YOU UNDER THIS AGREEMENT FOR THE PURCHASE OF THE EVALUATION BOARD, OR TEN UNITED STATES DOLLARS (\$10.00) IF NO PURCHASE PRICE WAS PAID.

INDEMNIFICATION

You shall, at Your expense, defend ST and its Affiliates against a claim or action brought by a third party for infringement or misappropriation of any patent, copyright, trade secret or other intellectual property right of a third party to the extent resulting from (1) Your combination of the Evaluation Board with any other component, system, software, or firmware, (2) Your modification of the Evaluation Board, or (3) Your use of the Evaluation Board in a manner not permitted under this Agreement. You shall indemnify ST and its Affiliates against and pay any resulting costs and damages finally awarded against ST or its Affiliates or agreed to in any settlement, provided that You have sole control of the defense and settlement of the claim or action, and ST cooperates in the defense and furnishes all related evidence under its control at Your expense. ST will be entitled to participate in the defense of such claim or action and to employ counsel at its own expense.

"Affiliates" means any corporation or other entity directly or indirectly controlled by, controlling or under common control with the entity in question, for so long as such ownership exists. "Control" means the direct or indirect beneficial ownership of more than fifty (50%) percent of the stock or other equity interests entitled to vote for the election of directors or an equivalent governing body. Any such corporation or other legal entity shall be deemed to be an Affiliate of such Party only as long as such Control exists.

TERMINATION

ST may terminate this Agreement without notice if You breach this Agreement. Upon termination, You shall immediately destroy or return all copies of the software, firmware, and documentation of the Evaluation Board to ST and certify in writing to ST that You have done so.

APPLICABLE LAW AND JURISDICTION

This Agreement shall be governed, construed and enforced in accordance with the laws of Switzerland, without regard to its conflict of laws rules. The UN Convention on Contracts for the International Sale of Goods shall not apply to this Agreement. In case of dispute and in the absence of an amicable settlement, the only competent jurisdiction shall be the Courts of Geneva, Switzerland. Any breach of this Agreement by You may result in irreparable damage to ST for which ST will not have an adequate remedy at law. Accordingly, in addition to any other remedies and damages available, You acknowledge and agree that ST may immediately seek enforcement of this Agreement in any jurisdiction by means of specific performance or injunction, without any requirement to post a bond or other security.

**SEVERABILITY**

If any provision of this agreement is or becomes, at any time or for any reason, unenforceable or invalid, no other provision of this agreement shall be affected thereby, and the remaining provisions of this agreement shall continue with the same force and effect as if such unenforceable or invalid provisions had not been inserted in this Agreement. In addition, any unenforceable or invalid provision shall be deemed replaced by a provision that is valid and enforceable and that comes closest to expressing the intention of the unenforceable or invalid provision.

WAIVER

The waiver by either party of any breach of any provision of this Agreement shall not operate or be construed as a waiver of any other or a subsequent breach of the same or a different provision.

RELATIONSHIP OF THE PARTIES

Nothing in this Agreement shall create, or be deemed to create, any joint venture, partnership, principal-agent, employer-employee or other relationship between the Parties, except that of independent contractors. Neither Party has the authority or power to bind, to contract in the name of, or to create a liability for the other in any way or for any purpose.

SURVIVAL

Any provision of this Agreement which imposes an obligation after termination of this Agreement shall survive the termination of this Agreement.

SECTION HEADINGS

Section headings are inserted for convenience only and shall not be used to interpret this Agreement.

RECYCLING

The Evaluation Board is not to be disposed as an urban waste. At the end of its life cycle, differentiated waste collection must be followed, as stated in the directive 2002/96/EC. In all the countries belonging to the European Union (EU Dir. 2002/96/EC) and those following differentiated recycling, the Evaluation Board is subject to differentiated recycling at the end of its life cycle, therefore: It is forbidden to dispose the Evaluation Board as an undifferentiated waste or with other domestic wastes. Consult the local authorities for more information on the proper disposal channels. It is mandatory to sort the Evaluation Board and deliver it to the appropriate collection centers, or, when possible, return the Evaluation Board to the seller. An incorrect Evaluation Board disposal may cause damage to the environment and is punishable by the law.