

Table 1: STEVAL-IPFC12V1 bill of materials

Item	Q.ty	Ref.	Part / Value	Description	Manufacturer	Order code
1	1	-	STEVAL-IPFC12P1	Power board	ST	not available separately
2	1	-	STEVAL-IPFC12C1	Control board	ST	not available separately
3	1	-	STEVAL-IPFC01A1	adapter board	ST	not available separately

Table 2: STEVAL-IPFC12P1 bill of materials

Item	Q.ty	Ref.	Part / Value	Description	Manufacturer	Order code
1	6	C100, C101, C102, C103, C304, C313	10nF, 50V, ±10%	X7R Ceramic Capacitor, SMD 0603	ANY	ANY
2	17	C104, C105, C109, C200, C204, C209, C305, C310, C311, C312, C314, C315, C316, C318, C319, C321, C322	100nF, 50V, ±10%	X7R Ceramic Capacitor, SMD 0603	ANY	ANY
3	2	C106, C107	68nF, 305Vac, ±10%	POLYPROPYLENE X2 FILM CAP, Trough hole lead spacing 15mm	EPCOS	B32922C3683K000
4	1	C108	1nF, 500Vdc, ±20%	Ceramic disc cap, Trough hole lead spacing 10mm	VISHAY BC COMPONENTS	VY1102M35Y5UG63V0
5	6	C110, C111, C317, C320, C308, C309	150pF, 50V, ±5%	C0G Ceramic Capacitor, SMD 0603	ANY	ANY
6	3	C201, C202, C205	470µF, 25Vdc, ±20%	Electrolytic capacitor +105°, TH 8mm diameter, 3.5mm lead spacing	ANY	ANY
7	1	C203	10µF, 25V, ±20%	Electrolytic capacitor +105°, Trough hole lead spacing 2mm - 5mm diameter	ANY	ANY
8	1	C206	4.7µF, 450V, ±20%	Electrolytic capacitor +105°, Trough hole lead spacing 5mm	ANY	ANY
9	1	C207	10µF, 450V, ±20%	Electrolytic capacitor +105°, Trough hole lead spacing 5mm	ANY	ANY
10	1	C208	47µF, 25V, ±20%	Electrolytic capacitor +105°, Trough hole lead spacing 2mm - 5mm diameter	ANY	ANY
11	1	C210	1nF, 50V, ±10%	X7R Ceramic Capacitor, SMD 0603	ANY	ANY

Item	Q.ty	Ref.	Part / Value	Description	Manufacturer	Order code
12	1	C211	150nF, 50V, ±10%	X7R Ceramic Capacitor, SMD 0603	ANY	ANY
13	1	C212	270pF, 50V, ±10%	X7R Ceramic Capacitor, SMD 0603	ANY	ANY
14	1	C300	0.56 µF, 450V, ±10%	POLYPROPYLENE FILM CAP, Trough hole lead spacing 22.5mm	EPCOS	B32673P6564K000
15	2	C301, C302	680µF, 450V, ±20%	Electrolytic capacitor +105°, Trough hole lead spacing 10mm	Nichicon	LGM2W681MELC40
16	1	C303	1µF, 520V, ±10%	POLYPROPYLENE FILM CAP, Trough hole lead spacing 15mm		B32672P5105K000
17	2	C306, C307	100 pF, 630 Vdc, ±5%	POLYPROPYLENE FILM CAP, Trough hole lead spacing 5mm	KEMET	PFR5101J630J11L4BULK
18	2	D100, D101	1200V, 30A	High voltage rectifier for bridge applications, DO-247	ST	STBR3012W
19	1	D102	1000V, 1A	General Purpose Rectifier Diode, SMA	ON Semiconductor	GF1M
20	2	D103, D104	70V, 70mA	Schottky diode, SOT23	ST	BAS70-04FILM
21	1	D200	150V, 2A	Power schottky diode, SMA	ST	STPS2150A
22	2	D201, D203	150V	TRANSIL, SMB	ST	SM6T150A
23	1	D202	1000V, 0.5A	Bridge rectifier, SMD	Fagor Electronica	MB10SA TR
24	1	D204	1000V, 1A	Turbo 2 ultrafast high voltage rectifier, SMA	ST	STTH1L06A
25	1	D205	60V, 1A	Power schottky diode, SMA	ST	STPS1L60A
26	1	D206	100V, 150mA	Small signal Schottky diode, SMD Minimelf	ST	TMMBAT46FILM
27	2	D300, D301	600V, 12A	600 V power Schottky silicon carbide diode, TO220AC	ST	STPSC12065D
28	9	D302, D303, D304, D305, D306, D307, D308, D309, D310	30V, 1A	Power schottky diode, SMA	ST	STPS1L30A
29	1	F100	20A, 250Vac, 20A	Cylindrical Fuse Class gG/gL and aM, SMD 10x3 mm	Bel Fuse Inc.	SMM 20

Item	Q.ty	Ref.	Part / Value	Description	Manufacturer	Order code
30	1	GT100	EC600X, 540V, 5kA	Gas Discharge Tube for circuit protection, Trough hole	EPCOS	B88069X0780S102
31	3	ISO100, ISO101, ISO102	80V, 50mA	Optocoupler, SMD	Toshiba	TLP385(GB,E
32	1	J100	VIN, 630V, 17.5A	PCB terminal block, Trough hole lead spacing 7.5mm	Phoenix Contact	1717033
33	1	J300	VOUT, 300Vac, 25A	PCB terminal block, Trough hole lead spacing 7.62mm	RS	790-1130
34	1	J301	CON40A, 550Vac, 6.9A	Connector 2 ways 2.54mm, Trough hole lead spacing 2.54mm	SAMTEC	ESQ12037GD
35	1	L100	2x4.5mH, 250V, 18A, -30% +50%	Common Mode Power Line, Trough hole	WURTH ELEKTRONIK	7448051804
36	1	L200	1mH, 0.8A, ±20%	Radial Leded Wire Wound Inductor, Radial	WURTH ELEKTRONIK	7447480102
37	1	L201	4.7µH, 1.9A, ±20%	SMD Inductors, SMD 4.5x4mm	RS Pro	740-9372
38	1	L202	560 µH, 0.48A, ±10%	Switch Mode Transformer, Through hole	AQ Magnetica OR Würth Elektronik	2198.0028 OR 750318021
39	2	L300, L301	350µH 12A _{PK} 1kW	Power inductor, through hole	AQ Magnetica OR Würth Elektronik	2097.0016 OR 750318020
40	2	Q100, Q101	60V, 0.6A	PNP Transistor, Trough hole TO 18	MULTICOMP	2N2907A
41	2	Q102, Q103	1200V, 30A	SCR THYRISTOR, TO247	ST	TN3050H-12WY
42	2	Q300, Q301	650V, 20A	Trench gate field-stop IGBT, TO-247	ST	STGW20H65FB
43	1	Q302	20V, 6A	N-channel 20 V, Power MOSFET, SO8	ST	STS6NF20V
44	2	RV100, RV102	250VAC, ±10%	METAL OXIDE VARISTORS, Trough hole	EPCOS	B72214P2251K101
45	2	RV101, RV103	385VAC, ±10%	METAL OXIDE VARISTORS, Trough hole	EPCOS	B72214P2381K101
46	6	R100, R101, R110, R111, R349, R350	1k, 50V, ±1%	Metal film resistor, SMD 0603	ANY	ANY
47	4	R102, R103, R105, R106	390, 50V, ±1%	Metal film resistor, SMD 0603	ANY	ANY
48	2	R104, R107	270, 50V, ±1%	Metal film resistor, SMD 0603	ANY	ANY

Item	Q.ty	Ref.	Part / Value	Description	Manufacturer	Order code
49	2	R108, 109	47, 600V, $\pm 5\%$	Metal oxid film resistor, AXIAL	TE Connetivity	ROX2SJ47R
50	2	R112, R113 (not mounted)	2.7M, 200V, $\pm 5\%$	Metal film resistor, AXIAL	ANY	ANY
51	3	R114, R117, R118	33k, 200V, $\pm 1\%$	Metal film resistor, 1206	ANY	ANY
52	1	R115	100k, 200V, $\pm 1\%$	Metal film resistor, 1206	ANY	ANY
53	2	R116, R120	10M, 50V, $\pm 1\%$	Metal film resistor, SMD 0603	ANY	ANY
54	1	R119	47k, 50V, $\pm 1\%$	Metal film resistor, SMD 0603	ANY	ANY
55	7	R121, R122, R124, R125, R303, R306, R314	470k, 200V, $\pm 1\%$	Metal film resistor, 1206	ANY	ANY
56	2	R123, R126	3k 0.1%, 50V, $\pm 0.1\%$	Metal film resistor, SMD 0603	ANY	ANY
57	1	R200, R312, R313	10, 200V, $\pm 1\%$	Metal film resistor, 1206	ANY	ANY
58	2	R201, R202	22, 500V, $\pm 5\%$	Wirewound Anti-Surge Resistor, AXIAL	TE Connectivity	EP1W22RJ
59	1	R203	27k, 50V, $\pm 1\%$	Metal film resistor, SMD 0603	ANY	ANY
60	1	R204	240, 50V, $\pm 1\%$	Metal film resistor, SMD 0603	ANY	ANY
61	2	R205, R342	10k, 50V, $\pm 1\%$	Metal film resistor, SMD 0603	ANY	ANY
62	1	R206	12k, 50V, $\pm 1\%$	Metal film resistor, SMD 0603	ANY	ANY
63	1	R207	91k, 50V, $\pm 1\%$	Metal film resistor, SMD 0603	ANY	ANY
64	1	R208	3.3k, 200V, $\pm 1\%$	Metal film resistor, 1206	ANY	ANY
65	1	R300	40m, $\pm 1\%$	WSHM 7W Power Metal Strip Resistor, SMD2818	VISHAY	WSHM2818R0400FEA
65A	1	R300 option	40m, $\pm 1\%$	WSR3 Power Metal Strip Resistor, SMD 4527	VISHAY	WSR3R0400FEA
66	8	R301, R302, R321, R322, R332, R337, R339, R344	100, 50V, $\pm 1\%$	Metal film resistor, SMD 0603	ANY	ANY
67	2	R304, R305	510, 50V, $\pm 1\%$	Metal film resistor, SMD 0603	ANY	ANY
68	2	R307, R308	10k, 75V, $\pm 0.1\%$	Metal film resistor, SMD 0603	Panasonic	ERA3AEB103V
69	2	R309, R319	56k, 75V, $\pm 0.1\%$	Metal film resistor, SMD 0603	Panasonic	ERA3AEB563V
70	2	R310, R311	33, 200V, $\pm 1\%$	Metal film resistor, 1206	ANY	ANY

Item	Q.ty	Ref.	Part / Value	Description	Manufacturer	Order code
71	2	R315, R317	10k, 200V, $\pm 1\%$	Metal film resistor, 1206	ANY	ANY
72	2	R316, R318	10m, $\pm 1\%$	Wirewound Res., Precision, SMD 2512	OHMITE	MCS3264R010FER
73	1	R320	6m, $\pm 1\%$	Metal film resistor, SMD	Panasonic	ERJMS4HF6M0U
74	1	R323	3.3k, 75V, $\pm 0.1\%$	Metal film resistor, SMD 0603	Panasonic	ERA3AEB332V
75	2	R324, R330	82k, 75V, $\pm 0.1\%$	Metal film resistor, SMD 0603	Panasonic	ERA3AEB823V
76	6	R325, R327, R333, R338, R340, R345	2.2k, 75V, $\pm 0.1\%$	Metal film resistor, SMD 0603	Panasonic	ERA3AEB222V
77	1	R326	0, 50V, $\pm 1\%$	Metal film resistor, SMD 0603	ANY	ANY
78	1	R328 (not mounted)	50V, $\pm 1\%$	Metal film resistor, SMD 0603	ANY	ANY
79	1	R329	470, 50V, $\pm 1\%$	Metal film resistor, SMD 0603	ANY	ANY
80	4	R331, R335, R343, R346	62k 0.1%, 75V, $\pm 0.1\%$	Metal film resistor, SMD 0603	Panasonic	ERA3AEB623V
81	1	R334	11k, 50V, $\pm 1\%$	Metal film resistor, SMD 0603	ANY	ANY
82	1	R336	22, 200V, $\pm 1\%$	Metal film resistor, 1206	ANY	ANY
83	1	R341	33k, 50V, $\pm 1\%$	Metal film resistor, SMD 0603	ANY	ANY
84	2	R347, R348	0, 200V, $\pm 1\%$	High Power Thick Film Resistor, 1206	ANY	ANY
86	1	RT1	15	Termistore NTC, TH lead spacing 5mm	EPCOS	B57236S0160M000
87	1	U200	-	low drop voltage regulators, DPAK	ST	L4931ABDT50-TR
88	1	U201	800V	Off-line all-primary-sensing switching regulator, SO16N	ST	VIPER26HDTR
89	4	U300, U301, U303, U304	5V	Wide-bandwidth (8MHz) rail to rail input/output 5V CMOS Op-Amp, single, SOT23-5L	ST	TSV911ILT
90	1	U302	5V	Ultra-low current 2.4 V precision analog temperature sensor, SOT323-5L	ST	STLM20W87F
91	2	U305, U306	-	4 A dual low side MOSFET driver, SO8	ST	PM8834TR
92	4	Y100, Y101, Y102, Y103	2.2 nF, 250V, $\pm 20\%$	Ceramic disc cap, T H lead spac. 7.5 mm	MURATA	DE2E3KY222MA3BM02F
93	1	Y300	FAN2	DC Axial Fan +Heatsink	Fischer Elektronik	LAM 4 K 150 12

Item	Q.ty	Ref.	Part / Value	Description	Manufacturer	Order code
94	8	Y3 lock-in-retaining springs	-	retaining springs	Fischer Elektronik	THFU 1
95	1	Thermal Film 140 x 25 mm	-	Thermal conductivity Thin film 140 X 25 mm	BERGQUIST	BP100-0.005-00-12/12
96	4	Nylon Spacer	-	Hex Threaded Spacer	DURATOOL	D01496
96	4	Nylon Nut	-	M3 Hexagon Full Nut Double Chamfer	TR FASTENINGS	-

Table 3: STEVAL-IPFC12C1 bill of materials

Item	Q.ty	Ref.	Part / Value	Description	Manufacturer	Order code
1	1	C1	4.7 μ F, 16V, \pm 10%	X7R Ceramic Capacitor, SMD 0805	ANY	ANY
2	5	C2, C5, C18, C24, C32	100nF, 50V, \pm 10%	X7R Ceramic Capacitor, SMD 0603	ANY	ANY
3	2	C3, C4	10nF, 25V, \pm 10%	X7R Ceramic Capacitor, SMD 0603	AVX	06033C103KAT2A
4	2	C7, C23	1 μ F, 25V, \pm 10%	X7R Ceramic Capacitor, SMD 0603	ANY	ANY
5	2	C8, C40	100pF, 50V, \pm 5%	C0G Ceramic Capacitor, SMD 0603	ANY	ANY
6	2	C9, C29	150pF, 50V, \pm 5%	C0G Ceramic Capacitor, SMD 0604	ANY	ANY
7	2	C10, C37	33pF, 50V, \pm 5%	C0G Ceramic Capacitor, SMD 0603	ANY	ANY
8	2	C11, C42	1nF, 50V, \pm 5%	C0G Ceramic Capacitor, SMD 0603	ANY	ANY
9	1	C12	15nF, 50V, \pm 10%	X7R Ceramic Capacitor, SMD 0603	ANY	ANY
10	3	C13, C38, C39	220nF, 50V, \pm 10%	X7R Ceramic Capacitor, SMD 0603	ANY	ANY
11	1	C27	820pF, 50V, \pm 5%	COG Ceramic Capacitor, SMD 0603	ANY	ANY
12	1	C28	2.2 nF, 50V, \pm 5%	C0G Ceramic Capacitor, SMD 0603	ANY	ANY
13	1	C30	15pF, 50V, \pm 5%	COG Ceramic Capacitor, SMD 0603	ANY	ANY
14	1	C31	8.2nF, 50V, \pm 10%	X7R Ceramic Capacitor, SMD 0603	ANY	ANY

Item	Q.ty	Ref.	Part / Value	Description	Manufacturer	Order code
15	1	C35	1.5nF, 50V, ±5%	COG Ceramic Capacitor, SMD 0603	ANY	ANY
16	1	C36	330pF, 50V, ±5%	COG Ceramic Capacitor, SMD 0603	ANY	ANY
17	1	C41 N.A.	1nF, 50V, ±5%	X7R Ceramic Capacitor, SMD 0603	ANY	ANY
18	1	D1	RED, 1.85V, 20mA	High efficiency red diffused LED 3mm, SMD 0805	Kingbright	KP-2012SRC-PRV
19	1	D2	GREEN, 2.1V, 20mA	High efficiency green diffused LED 3mm, SMD 0805	Kingbright	KPHCM-2012CGCK
20	1	D3	BAS70-05, 70V, 70mA	Low capacitance, series inductance and resistance Schottky diode, SOT23	ST MICROELECTRO	BAS70-05FILM
21	1	J1	CON40A, 250Vac, 3A	Right angle PIN header connector, dual row, T. H. lead spacing 2.54 x 2.54mm	Würth Elektronik	61304021021
22	2	J2, J5	CON4, 250Vac, 3A	T. H. PIN Header Connector, single row, T. H. lead spacing 2.54mm	Würth Elektronik	61300411121
23	1	L1	120Ω, 100MHz	Ferrite, SMD 0603	Würth Elektronik	74279262
24	2	R1, R2	1.8k, 50V, ±1%	Metal film resistor, SMD 0603	ANY	ANY
25	6	R4, R8, R9, R21, R22, R32	10k, 50V, ±1%	Metal film resistor, SMD 0603	ANY	ANY
26	4	R7, R14, R15, R54	10k, 50V, ±0.1%	Metal film resistor, SMD 0603	Panasonic	ERA3APB103V
27	2	R6, R35	3.3k, 50V, ±1%	Metal film resistor, SMD 0603	ANY	ANY
28	1	R20	27k, 50V, ±1%	Metal film resistor, SMD 0603	ANY	ANY
29	1	R23	7.5k, 50V, ±1%	Metal film resistor, SMD 0603	ANY	ANY
30	1	R24	4.3k, 50V, ±1%	Metal film resistor, SMD 0603	ANY	ANY
31	1	R25	270K, 50V, ±1%	Metal film resistor, SMD 0603	ANY	ANY
32	2	R26, R27	56k, 50V, ±1%	Metal film resistor, SMD 0603	ANY	ANY
33	1	R28	5.6k, 50V, ±1%	Metal film resistor, SMD 0604	ANY	ANY
34	4	R29, R31, R40, R44	0, 50V, ±1%	Metal film resistor, SMD 0603	ANY	ANY
35	1	R30	22k, 50V, ±1%	Metal film resistor, SMD 0603	ANY	ANY

Item	Q.ty	Ref.	Part / Value	Description	Manufacturer	Order code
36	5	R33, R41, R45, R48, R55 N.A.	N.A., 50V, $\pm 1\%$	Metal film resistor, SMD 0603	ANY	ANY
37	1	R34	15k, 50V, $\pm 1\%$	Metal film resistor, SMD 0603	ANY	ANY
38	2	R36, R50	4.7k, 50V, $\pm 1\%$	Metal film resistor, SMD 0603	ANY	ANY
39	1	R37	2.7k, 50V, $\pm 1\%$	Metal film resistor, SMD 0603	ANY	ANY
40	2	R42, R43	100k, 50V, $\pm 1\%$	Metal film resistor, SMD 0603	ANY	ANY
41	1	R49	1.5k, 50V, $\pm 1\%$	Metal film resistor, SMD 0603	ANY	ANY
42	2	R52, R53	1k, 50V, $\pm 1\%$	Metal film resistor, SMD 0603	ANY	ANY
43	1	U1	5V	Digital controller, TSSOP38	ST MICROELECTRONICS	STNRGPF12
44	1	U4	5V	Single rail to rail I/O 8MHz OpAmp, SOT23-5L	ST MICROELECTRONICS	TSV911ILT
45	1	U5	5V	LOW POWER I/O rail to rail dual OpAmp, SO8	ST MICROELECTRONICS	LMV358IDT

Table 4: STEVAL-IPFC01A1 bill of materials

Item	Q.ty	Ref.	Part / Value	Description	Manufacturer	Order code
1	1	D400	LED	High Efficiency Red LED 3mm, through hole	Kingbright	L-7104ID
2	1	J400	CON4	4-contact 2.54mm female SIL Board-to-board Socket, through hole	HARWIN	M20-7890446
3	1	J401	CON6	Right angle male connector 1 way 6 circuits 2.54mm, through hole	ANY	ANY
4	1	Q400	40 V, 0.6 A	General Purpose Transistors, NPN Silicon	ON Semiconductor	SMMBT2222ALT1G
5	1	R401	330	Metal film resistor, 0805	ANY	ANY
6	1	R402	470k	Metal film resistor, 0805	ANY	ANY
7	1	R403	1K	Metal film resistor, 0805	ANY	ANY

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Notice applicable to Evaluation Boards according to European Regulation

For the European Regulation of the Evaluation Board, the applicable EU directives are considered, with a particular attention to the Low Voltage Directive (LVD) 2014/35/EU, the Electromagnetic Compatibility (EMC) Directive 2014/30/EU, and the Radio Equipment Directive (RED) 2014/53/EU. If the Evaluation Board is outside the scope of the foregoing Directives, then the General Product Safety Directive (GPSD) 2001/95/EC and Council Directive 93/68/EEC, amending Directive 73/23/EEC on electrical equipment designed for use within certain voltage limits, are applicable.

The Evaluation Board meets the requirements of the Restriction of Hazardous Substances (RoHS 2 or RoHS recast) Directive 2011/65/EU, Annex II, as amended by Directive 2015/863/EU.

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.

WASTE AND RECYCLING

The Evaluation Board is not to be disposed of as urban waste. At the end of its life cycle, differentiated waste collection must be followed. Consult the local authorities for more information on the proper disposal channels. It is mandatory to separately collect the Evaluation Board and make sure it is delivered to the appropriate waste management and recycling centers.

As of 15 August 2018, in all the countries belonging to the European Union, the Evaluation Board is subject to the WEEE Directive 2012/19/EU requirement; therefore, it is forbidden to dispose of the Evaluation Board as undifferentiated waste or with other domestic wastes. Consult the local authorities for more information on the proper recycling centers.

Disposing of the Evaluation Board incorrectly may cause damage to the environment and may be subject to fines based on specific countries' rules.