



Bill of Materials for the STR-NCV7685-AUTO-GEVB Evaluation Board

Designator	Quantity	Description	Value	Tolerance	Footprint	Manufacturer	Manufacturer Part Number	Substitution Allowed	Lead Free
C1 C28 C66 C73 C81 C88 C92 C95 C101 C107 C109	11	CAP CER 1UF 16V X5R 0402	1uF		0402	Murata	GRM155R61C105KA12	Yes	Yes
C2 C3 C4 C5 C6 C7 C8 C9 C10 C11 C12 C13	0	DNI	DNI		DNI	DNI	DNI	Yes	Yes
C14 C15 C16 C53 C54 C55 C56 C57 C58 C59 C60 C61 C62 C63 C64 C69 C83	17	CAP CER 1UF 25V X7R 0603	1uF		0603	Murata	GCM188R71E105KA64	Yes	Yes
C17 C26	2	CAP CER 680PF 50V C0G/NP0 0402	680pF		0402	Murata	GCM1555C1H681JA16D	Yes	Yes
C18	1	CAP CER 10000PF 50V X7R 0402	10nF		0402	Murata	GCM155R71H103KA55D	Yes	Yes
C19 C29 C30 C31 C32 C33 C34 C35 C36 C37 C38 C39 C40 C41 C42 C43 C44 C45 C46 C47 C48 C49 C50 C51 C52	25	CAP CER 1UF 50V X5R 0603	1uF		0603	Murata	GRT188R61H105KE13D	Yes	Yes
C20	1	CAP CER 1000PF 50V X7R 0402	1nF		0402	Murata	GCM155R71H102KA37D	Yes	Yes
C21 C22	2	CAP CER 1UF 10V X7S 0402	1uF		0402	Murata	GCM155C71A105KE38	Yes	Yes
C23 C65	0	DNI	DNI		DNI			Yes	Yes
C24 C67	2	CAP CER 10000PF 100V X7R 0603	10nF		0603	Murata	GCM188R72A103KA37D	Yes	Yes
C25 C27 C97	3	CAP CER 10UF 25V X5R 0603	10uF		0603	Murata	GRM188R61E106MA73	Yes	Yes
C68 C70 C71 C72 C76 C77 C78 C79 C80 C82 C84 C85 C86 C89	14	CAP CER 10UF 50V X7S 1210	10uF		1210	Murata	GCM32EC71H106KA03K	Yes	Yes
C74	1	Monolithic Ceramic SMD Capacitor	1nF		0402	Murata	GRM155R71H102KA01	Yes	Yes
C75	1	CAP CER 0.22UF 50V X7R 0603	0.22uF		0603	Murata	GCM188R71H224KA64J	Yes	Yes
C87	1	CAP CER 3.3nF 50V COG 0402	3.3nF		0402	Murata	GRM1555C1H332JE01	Yes	Yes
C90	1	CAP CER 470pF 50V X7R 0402	470pF		0402	Murata	GCM155R71H471KA37D	Yes	Yes
C91	1	CAP CER 2200PF 50V X7R 0402	2.2nF		0402	Murata	GCM155R71H222KA37D	Yes	Yes
C93 C94 C98 C99 C100 C108	6	CAP CER 4.7UF 6.3V X5R 0402	4.7uF		0402	Murata	GRM155R60J475ME47D	Yes	Yes
C96 C106	2	CAP CER 0.1UF 50V X7R 0402	0.1uF		0402	Murata	GCM155R71H104KE02	Yes	Yes
C102 C105	2	CAP CER 12PF 50V C0G/NP0 0402	12pF		0402	Murata	GJM1555C1H120JB01D	Yes	Yes
C103 C104	2	CAP CER 7.5PF 50V C0G/NP0 0402	7.5pF		0402	Murata	GJM1555C1H7R5CB01D	Yes	Yes
D1 D2 D3 D4 D17 D18 D19 D20 D29 D30 D31 D32	12	LED WL-SWTP COOL WHT 2SMD	158302260		3022	Würth Elektronik	158302260	Yes	Yes
D5 D6 D11 D12 D13 D14 D23 D24 D25 D26 D35 D36	12	WL-SMTD SMT MONO-COLOR TOP LED YELLOW	150141YS63140		3528	Würth Elektronik	150141YS63140	Yes	Yes
D7 D8 D9 D10 D15 D16 D21 D22 D27 D28 D33 D34	12	WL-SMTD SMT MONO-COLOR TOP LED RED	150141RS63140		3528	Würth Elektronik	150141RS63140	Yes	Yes
D37	1	DIODE ZENER 5.1V 250MW SOD923	NZ9F5V1		SOD-923	ON Semiconductor	NZ9F5V1T5G	No	Yes
D38 D41	2	Surface Mount Schottky Power Rectifier	NRVBS240LT3G		SMB	ON Semiconductor	NRVBS240LT3G	No	Yes
D39	1	Surface Mount Schottky Power Rectifier	NRVB130		SOD-123	ON Semiconductor	NRVB130T1G	No	Yes
D40	1	SOD-323 Schottky Diode	NSVBAT54		SOD-323	ON Semiconductor	NSVBAT54HT1G	No	Yes
D42	1	DIODE ZENER 15V 250MW SOD923	SZ9F15V		SOD-923	ON Semiconductor	SZ9F15V1T5G	No	Yes
D43	1	Yellow LED	150060YS75000		0603	Würth Elektronik	150060YS75000	Yes	Yes
D44	1	Blue LED	150060BS75000		0603	Würth Elektronik	150060BS75000	Yes	Yes
D45	1	Green LED	150060GS75000		0603	Würth Elektronik	150060GS75000	Yes	Yes
D46	1	Red LED	150060RS75000		0603	Würth Elektronik	150060RS75000	Yes	Yes
D47	1	ESD Protection Diodes	ESD7205		SOT-723	ON Semiconductor	ESD7205DT5G	No	Yes
D48 D49	2	Schottky Barrier Diode, 2.0 A, 20 V	NSR20F20NX		DSN2 0603	ON Semiconductor	NSR20F20NX	No	Yes
FB1	1	Ferrite bead 220 Ohm 0805 1LN	220@100M		0805	Würth Elektronik	782853221	Yes	Yes
J1 J14 J15 J16 J17 J18 J19 J20 J26	9	Standard 1x2pin 100mil Pitch Header	613 002 111 21		1x2pin 100mil	Würth Elektronik	613 002 111 21	Yes	Yes
J2	1	CONN HEADER R/A 24POS SOCKET 2.54MM	613024243121		2x12pin 100mil	Würth Elektronik	613024243121	Yes	Yes
J3 J4	2	Standard 1x5pin 100mil Pitch Header	613 005 111 21		1x5pin 100mil	Würth Elektronik	613 005 111 21	Yes	Yes

J5 J8 J10 J13	4	AD SCREW M3 X 5MM CROSS SL, Offset 3D Mod	97790503211	M3 5MM Screw	Würth	97790503211	Yes	Yes
J6 J7 J11 J12	4	STIC SPACER STUD METRIC THREAD M3 10MM	970100365	M3 10MM Standof	Würth	970100365	Yes	Yes
J9	1	LED Cover 3x1.175"	LEDCOVER0	3x1.175"			Yes	Yes
J21	1	Standard 1x3pin 100mil Pitch Header (I2C Specific)	613 003 111 21	1x3pin 100mil	Würth Elektronik	613 003 111 21	Yes	Yes
J22 J23	2	PLASTIC HEXAGON NUT M3	709940300	M3 Nut	Würth	709940300	Yes	Yes
J24 J25 J34 J35	4	STIC SPACER STUD METRIC THREAD M3 15MM	971150365	M3 15MM Standof	Würth	971150365	Yes	Yes
J27 J28	2	PAN HEAD SCREW M3 X 5MM CROSS SL	97790503211	M3 5MM Screw	Würth	97790503211	Yes	Yes
J29	1	Red Insulated 4mm socket for banana plugs	571-0500	Red Banana Rec	Deltron	571-0500	Yes	Yes
J30	1	DC Power Jack Right Angled THT	694106301002	Barrel Connector	Würth Elektronik	694106301002	Yes	Yes
J31	1	Black Insulated 4mm socket for banana plugs	571-0100	Black Banana Rec	Deltron	571-0100	Yes	Yes
J32	1	Standard Arm Cortex Debug Connector	FTSH-105-01-F-DV-K	2x5pin 50mil Cortex D	Samtec	FTSH-105-01-F-DV-K	Yes	Yes
J33	1	Mini USB1/2 Type-B Connector	65100516121	Mini USB1/2 B	Würth Elektronik	65100516121	Yes	Yes
JP1 JP2 JP3	0	DNI	DNI	DNI	DNI	DNI	Yes	Yes
JP4	1	Surface Mount High Current Jumper Chip Resistor	6.5A	0402	Stackpole Electronics	HCJ0402ZT0R00	Yes	Yes
L1	1	FIXED IND 33UH 1.22A 240 MOHM	33uH	7.3x7.3mm	Würth Elektronik	7447789133	Yes	Yes
L2	1	FIXED IND 22uH 1.04 OHM 0.6A IRATED 1.6A ISAT	22uH	3x3mm	Würth Elektronik	78438335220	Yes	Yes
NT1 NT2 NT3 NT4 NT5 NT6	0	DNI	DNI	DNI			Yes	Yes
Q1 Q2 Q3 Q4	4	all Signal MOSFET 60V 340mA 2.5 Ohm Single N-C	2V7002W	SOT-323	ON Semiconductor	2V7002WT1G	No	Yes
Q5 Q6	2	Power MOSFET -60 V, -20 A, 52mOhm	NTTFS5116PL	u8FL	ON Semiconductor	NTTFS5116PLTAG	No	Yes
Q7 Q8 Q9	3	nal MOSFET 60V 340mA 2.5 Ohm Single N-Channel	2N7002W	SOT-323	ON Semiconductor	2N7002WT1G	No	Yes
R1 R2 R3 R4 R18 R20 R40 R41 R42 R43 R44 R45 R46 R47 R48 R49 R50 R51 R69 R70 R72 R75 R77 R78 R85 R87 R93 R96 R97 R102 R103 R109	32	RES SMD 10K OHM 1% 1/16W 0402	10K	0402	Vishay Dale	CRCW040210K0FKED	Yes	Yes
R5 R6 R8 R11 R86 R95	6	RES SMD 10K OHM 1% 1/10W 0603	10K	0603	Vishay Dale	CRCW060310K0FKEA	Yes	Yes
R7 R9 R12 R19	4	RES SMD 1.1K OHM 1% 1/10W 0603	1.1K	0603	Vishay Dale	CRCW06031K10FKEA	Yes	Yes
R10	1	RES SMD 1K OHM 1% 1/16W 0402	1K	0402	Vishay Dale	CRCW04021K00FKED	Yes	Yes
R13	1	RES SMD 5.49K OHM 1% 1/10W 0603	5.49K	0603	Vishay Dale	CRCW06035K49FKEA	Yes	Yes
R14 R90 R92	3	RES SMD 100K OHM 1% 1/16W 0402	100K	0402	Vishay Dale	CRCW0402100KFKED	Yes	Yes
R15	1	RES SMD 1 OHM 1% 1/16W 0402	1	0402	Vishay Dale	CRCW04021R00FKED	Yes	Yes
R16	1	RES SMD 6.98K OHM 1% 1/10W 0603	6.98K	0603	Vishay Dale	CRCW06036K98FKEA	Yes	Yes
R17	1	RES SMD 2.15K OHM 1% 1/10W 0603	2.15K	0603	Vishay Dale	CRCW06032K15FKEA	Yes	Yes
R21	1	362P 250mil Square Trimpot Trimming Potentiomete	10k	250mil	Bourns Inc.	3362P-1-103LF	Yes	Yes
R22	1	RES SMD 6.04 OHM 1% 1/10W 0603	6.04	0603	Vishay Dale	CRCW06036R04FKEA	Yes	Yes
R23 R24 R68 R71	4	RES SMD 4.75 OHM 1% 1/10W 0603	4.75	0603	Vishay Dale	CRCW06034R75FKEA	Yes	Yes
R25 R28 R29 R64 R65 R73	0	DNI	DNI	DNI			Yes	Yes
R26 R27	2	RES SMD 5.11K OHM 1% 1/10W 0603	5.11K	0603	Vishay Dale	CRCW06035K11FKEA	Yes	Yes
R30 R31	2	RES SMD 1K OHM 0.1% 1/16W 0402	1K	0402	Panasonic	ERA-2AEB102X	Yes	Yes
R32	1	RES SMD 2K OHM 0.1% 1/16W 0402	2K	0402	Panasonic	ERA-2AEB202X	Yes	Yes
R33 R34 R35	3	RES SMD 10K OHM 0.1% 1/16W 0402	10K	0402	Panasonic	ERA-2AEB103X	Yes	Yes
R36	1	RES SMD 3.01K OHM 0.1% 1/16W 0402	3.01K	0402	Panasonic	ERA-2AEB3011X	Yes	Yes
R37 R38 R39	3	RES SMD 1.21K OHM 0.1% 1/16W 0402	1.21K	0402	Panasonic	ERA-2AEB1211X	Yes	Yes
R52 R53 R54 R55 R56 R57 R58 R59 R60 R61 R62 R63	12	RES SMD 7.32K OHM 1% 1/10W 0603	7.32K	0603	Vishay Dale	CRCW06037K32FKEA	Yes	Yes
R66	1	RES SMD 0.03 OHM Current Sense 1/4W 0805	0.03	0805	Vishay Dale	WSL0805R0300FEA18	Yes	Yes
R67	1	RES SMD 274K OHM 1% 1/10W 0603	274K	0603	Vishay Dale	CRCW0603274KFKEA	Yes	Yes
R74	1	RES SMD 40.2K OHM 1% 1/16W 0402	40.2K	0402	Vishay Dale	CRCW040240K2FKED	Yes	Yes
R76	1	RES SMD 49.9K OHM 1% 1/10W 0603	49.9K	0603	Vishay Dale	CRCW060349K9FKEA	Yes	Yes
R79	1	RES SMD 220 OHM 1% 1/2W 0805	220	0805	Vishay Dale	CRCW0805220RFKEAHP	Yes	Yes
R80	1	RES SMD 10.2K OHM 0.1% 1/10W 0603	10.2K	0603	Panasonic	ERA-3AEB1022V	Yes	Yes
R81	1	RES SMD 20K OHM 1% 1/10W 0603	20K	0603	Vishay Dale	CRCW060320K0FKEA	Yes	Yes
R82	1	RES SMD 1.02K OHM 0.1% 1/10W 0603	1.02K	0603	Panasonic	ERA-3AEB1021V	Yes	Yes
R83	1	RES SMD 0.05 OHM Current Sense 1/4W 0805	0.05	0805	Vishay Dale	WSL0805R0500FEA18	Yes	Yes
R84	1	RES SMD 1.87K OHM 0.1% 1/10W 0603	1.87K	0603	Panasonic	ERA-3AEB1871V	Yes	Yes
R88	1	RES SMD 23.2K OHM 0.1% 1/10W 0603	23.2K	0603	Panasonic	ERA-3AEB2322V	Yes	Yes
R89	1	RES SMD 5.36K OHM 1% 1/10W 0603	5.36K	0603	Vishay Dale	CRCW06035K36FKEA	Yes	Yes
R91	1	RES SMD 1.37K OHM 1% 1/10W 0603	1.37K	0603	Vishay Dale	CRCW06031K37FKEA	Yes	Yes
R94	0	DNI	DNI	DNI	DNI	DNI	Yes	Yes
R98	1	RES SMD 15K OHM 1% 1/10W 0603	15K	0603	Vishay Dale	CRCW060315K0FKEA	Yes	Yes
R99	1	RES SMD 2.8K OHM 0.1% 1/10W 0603	2.8K	0603	Panasonic	ERA-3AEB2801V	Yes	Yes
R100	1	RES SMD 1.07K OHM 0.1% 1/10W 0603	1.07K	0603	Panasonic	ERA-3AEB1071V	Yes	Yes
R101	1	RES SMD 681 OHM 1% 1/16W 0402	681	0402	Vishay Dale	CRCW0402681RFKED	Yes	Yes
R104	1	RES SMD 9.31K OHM 1% 1/16W 0402	9.31K	0402	Vishay Dale	CRCW04029K31FKED	Yes	Yes
R105	1	RES SMD 4.99K OHM 1% 1/16W 0402	4.99K	0402	Vishay Dale	CRCW04024K99FKED	Yes	Yes
R106	1	RES SMD 2.32K OHM 1% 1/16W 0402	2.32K	0402	Vishay Dale	CRCW04022K32FKED	Yes	Yes
R107 R108 R110	3	RES SMD 100 OHM 1% 1/16W 0402	100	0402	Vishay Dale	CRCW0402100RFKED	Yes	Yes
SW1	1	SWITCH TACTILE SPST-NO 0.05A 12V	434153017835	MOM1 SMD	Würth Elektronik	434153017835	Yes	Yes

TP1 TP2 TP3 TP4 TP5 TP6 TP7 TP8 TP9 TP10 TP11 TP12 TP14 TP16 TP17 TP18 TP19 TP21 TP22 TP23 TP24 TP25 TP26 TP27 TP28 TP29 TP31 TP32 TP33 TP34 TP35 TP36 TP37 TP38 TP39 TP40 TP43 TP44 TP45 TP46 TP47 TP48 TP49 TP50 TP51 TP52 TP53 TP54	0	DNI	DNI	DNI				Yes	Yes
TP13 TP15	0	DNI	DNI	DNI				Yes	Yes
TP20 TP30	2	PC TEST POINT COMPACT	5016	Test Loop	Keystone		5016	Yes	Yes
TP41 TP42 TP59 TP61 TP62 TP63 TP64	0	DNI	DNI	DNI				Yes	Yes
TP55 TP56 TP57 TP58 TP60	0	DNI	DNI	DNI				Yes	Yes
U1 U22	2	Digital Temperature Sensor with 2-wire Interface	NCT375	DFN8 2x2mm	ON Semiconductor		NCT375MNR2G	No	Yes
U2	1	Digital Potentiometer (POT), 256-Tap, I2C Compatible	CAT5171	SOT23-8	ON Semiconductor		CAT5171TBI-00GT3	No	Yes
U3	1	IC 12CH 60MA LED DRIVER	NCV7685	SSOP24-EP	ON Semiconductor		NCV7685DQR2G	No	Yes
U4 U20	2	Full-Function Load Switch with Adjustable Current Lim	FPF2193	WLCSP	ON Semiconductor		FPF2193	No	Yes
U5	1	2-Bit 20Mb/s Dual-Supply Level Translator	NLVSX4373	UDFN8 1.8x1.2	ON Semiconductor		NLVSX4373MUTAG	No	Yes
U6	1	IC AMB LIGHT SENSOR I2C 4-ODCSP	LV0104CS	ODCSP4 1x1mm	ON Semiconductor		LV0104CS-TLM-H	No	Yes
U7	1	Light Monitor, Voltage Output, Bi-Directional Zero-Drift, C	NCS213R	SC-70-6	ON Semiconductor		NCS213RSQT2G	No	Yes
U8 U15	0	DNI	DNI	DNI	DNI		DNI	Yes	Yes
U9 U10 U11 U12 U13 U14	6	IC DUAL HIGH SIDE SWITCH 14TSSOP	NCV47822	14-TSSOP	ON Semiconductor		NCV47822PAAJR2G	No	Yes
U16	1	Rated Current-Limit Load Switch with Adjustable Cur	FPF2700	MLP3X3	ON Semiconductor		FPF2700MPX	No	Yes
U17	1	Light Monitor, Voltage Output, Bi-Directional Zero-Drift, C	NCS214R	SC-70-6	ON Semiconductor		NCS214RSQT2G	No	Yes
U18	1	1.5 A 560 kHz Boost Regulator	NCV5173	SOIC-8	ON Semiconductor		NCV5173EDR2G	No	Yes
U19	1	Automotive Grade Non-Sync Buck Controller, 70uA Isns	NCV885301	SOIC-8	ON Semiconductor		NCV885301D1R2G	No	Yes
U21 U23	2	125uA Low Power Op Amp Rail-to-Rail Input/Output	NCS20061SN2	TSOP-5	ON Semiconductor		NCS20061SN2T1G	No	Yes
U24	1	EFM32 Giant Gecko 32-bit Microcontroller	EFM32GG380F1024	QFP100 14x14	Silicon Labs		EFM32GG380F1024G-E-QFP100R	Yes	Yes
U25	1	USB to BASIC UART IC	FT230X	QFN16 4x4	FTDI		FT230XQ-R	Yes	Yes
U26	1	Voltage Regulator, LDO, Ultra Low Noise, Ultra Low Iq,	NCP705	WDFN6	ON Semiconductor		NCP705MT33TCG	No	Yes
Y1	1	Crystals 32.768 kHz 12.5 pF +/-20 PPM -40/+85C	32.768 kHz	2 pin w/ shell	Micro Crystal		MS3V-T1R-32.768kHz-12.5pF-20PPM-TA-QC-Au	Yes	Yes
Y2	1	CRYSTAL 48.0000MHZ 8PF SMD	48MHz	5x3.2mm	NDK		NX5032GA-48.000000MHZ-LN-CD-1	Yes	Yes