

BILL OF MATERIALS FOR NAVA VI.0L 1287 PARTS

PARTS INCLUDED IN THE KIT

Part	Value	Device	Package	Description	Qty
DIODES					
D94, D95, D96, D97, D109, D110, D111	1N4004	1N4004	DO41-7	DIODE	7
D1, D2, D3, D4, D5, D6, D7, D8, D9, D10, D11, D12, D13, D14, D15, D17, D18, D19, D20, D21, D22, D23, D24, D25, D26, D27, D28, D29, D30, D31, D32, D33, D35, D36, D37, D38, D39, D40, D41, D42, D43, D44, D45, D46, D47, D48, D49, D50, D51, D52, D53, D54, D55, D56, D58, D59, D60, D61, D62, D63, D64, D65, D66, D67, D68, D69, D70, D73, D74, D75, D76, D77, D78, D79, D80, D81, D82, D83, D84, D85, D86, D87, D88, D89, D90, D91, D92, D98, D193, D194, D195, D196, D197, D198, D199	1N4148	1N4148	DO35-7C	DIODE	95
D101	1N5819-B	1N5819-B	DO41-7.6	1.0A SCHOTTKY BARRIER RECTIFIER	1
D16, D34, D57, D72	1N4746A	ZENER-DIODEDO37Z7-A	DO37Z7-A	Z-Diode	4
LED1, LED2, LED3, LED4		LED3MM RED	LED 3MM	LED	4
CHERRY SWITCH LEDS		LED3MM RED	LED 3MM		19
TRANSISTORS					
Q66	2N3906	2N3906	TO92-EBC- SMALL	PNP Transistor	1
Q38, Q68, Q70, Q84	2SA789	2SA798	SIP-5	PNP DIFFERENTIAL AMP SIP-5	4
Q2, Q4, Q5, Q7, Q8, Q10, Q15, Q17, Q24, Q29, Q36, Q40, Q41, Q42, Q60, Q62, Q64, Q73, Q79	2SA1115	2SA1115	TO92-ECB		19
Q1, Q3, Q6, Q9, Q11, Q12, Q13, Q14, Q16, Q18, Q19, Q20, Q21, Q22, Q23, Q25, Q26, Q27, Q28, Q30, Q31, Q32, Q33, Q34, Q35, Q37, Q39, Q86, Q43, Q44, Q45, Q46, Q49, Q50, Q51, Q52, Q53, Q54, Q55, Q56, Q57, Q58, Q59, Q61, Q63, Q65, Q69, Q71, Q72, Q74, Q75, Q76, Q77, Q78, Q80, Q81	2SC2603	2SC2603	TO92-ECB		56
Q82, Q83	2SC2878	2SC2878	TO92-ECB		2
Q47, Q48	2SD1469	2SD1469	TO-3		2
CONNECTORS					
15VAC		2.1MMJACK	POWER_JACK_2. 1		1
J6, J14		22-23-2061	22-23-2061	.100" (2.54mm) Center Header - 6 Pin	2
J2, J10		22-23-2081	22-23-2081	.100" (2.54mm) Center Header - 8 Pin	2
J1, J3, J4, J11, J12, J13		22-27-2041-04	6410-04	CONNECTOR	6
J5, J8		KK-156-5	KK-156-5	KK 156 HEADER	2
J7, J15		MA05-1	MA05-1A	PIN HEADER	2
J9		PINHD-1X2	1X02	PIN HEADER	1
ICSP		MA03-2	MA03-2	PIN HEADER	1
BASSDRUM, CRASH, HANDCLAP, HIHAT, HITOM, LEFT, LOWTOM, MIDTOM, RIDE, RIGHT/MONO, RIMSHOT, SNAREDRUM, TRIG1	JACK_TRSNRJ6HF	JACK_TRSNRJ6HF	JACK_TRS	Neutrik	13
DIN_SYNC, IN, OUT, THRU		MAB5SH	MAB5SH	Female CONNECTOR	4
SOCKET DIP40		DIP40	DIP40	IC SOCKET	1
SOCKET DIP8		DIP8	DIP8	IC SOCKET	2
SOCKET DIP28		DIP28	DIP28	IC SOCKET	3
ICs					
IC54, IC62, IC69	27C256P	27C256P	DIL28-6	CMOS EPROM	3

IC100, IC102, IC104, IC105, IC108	74HC165N	74HC165N	DIL16	8-bit parallel load SHIFT REGISTER	5
IC101, IC106, IC107, IC112, IC113, IC116, IC117	74HC595N	74HC595N	DIL16	8-bit SHIFT REGISTER, output latch	7
IC4	6N138	6N138	DIL08	MOTOROLA OPTO COUPLER	1
IC32, IC33	4006N	4006N	DIL14	18-bit static SHIFT REGISTER	2
IC57, IC59, IC72	4011UB	4011N	DIL14	Quad 2-input NAND	3
IC56, IC60, IC73	4013N	4013N	DIL14	Dual D FLIP FLOP, set/reset	3
IC55, IC61, IC71	4040N	4040N	DIL16	12-stage binary/ripple COUNTER	3
IC111, IC114	4051N	4051N	DIL16	8-channel ANALOG MULTIPLEXER	2
IC16, IC22, IC36, IC44	4069UB	4069N	DIL14	Hex INVERTER	4
IC31	4070N	4070N	DIL14	Quad 2-input XOR	1
IC53, IC63, IC68	74HC174	74HC174	DIL16	Hex D-type Flip Flop	3
IC110	TL074P	TL074P	DIL14	OP AMP	1
IC58, IC70	4520N	4520N	DIL16	Dual binary up COUNTER	2
IC29	AN6912	AN6912	DIL14	Quad Comparator	1
IC115	AT24CP	AT24CP	DIL08	2-wire serial EEPROM 1024K	1
IC119	ATMEGA1284P-20PU	ATMEGA1284-20PU	DIL40	8-bit Microcontroller with 64K Bytes In-System Programmable Flash	1
IC30	BA6110SIL	BA6110SIL	SIL09		1
IC11, IC12, IC13, IC14, IC15, IC17, IC18, IC19, IC20, IC21, IC23, IC24, IC25, IC26, IC27, IC28, IC34, IC35, IC37, IC38, IC39, IC40, IC42, IC43, IC45, IC46, IC47, IC48, IC49, IC50, IC51, IC52, IC64, IC65, IC66, IC67	M5218	M5218	SIL8	DUAL LOW-NOISE OPERATIONAL AMPLIFIER (DUAL POWER SUPPLY TYPE)	36
IC118	MCP4822	MCP4822	DIL8	Dual 12 Bits DAC with internal Vref and SPI interface	1
REG1	LM7815	LM7815	TO220V	Positive VOLTAGE REGULATOR	1
REG2	LM7915	LM7915	TO220V	500 mA Negative Voltage Regulators	1
REG3	LM2596T	LM2596T	T05D	SIMPLE SWITCHER® Power Converter 150 kHz 3A Step-Down Voltage Regulator	1
NON POLARIZED CAPACITORS					
C522, C523	22p	C-EU025-025X050	C025-025X050	CERAMIC DISK	2
C169	47p	C-EU025-025X050	C025-025X050	CERAMIC DISK	1
C73	470p	C-EU050-025X075	C050-025X075	CERAMIC DISK	1
C58, C64, C125, C126, C137, C145, C149, C156	0.001	C-EU050-025X075	C050-025X075	CAPACITOR, European symbol	8
C24, C34, C66, C69, C79, C112, C113, C121, C122, C500, C502, C503, C504, C505, C506, C507, C508, C509, C510, C511, C512, C134	0.01	C-EU050-025X075	C050-025X075	CAPACITOR, European symbol	22
C49, C88, C92, C93, C513, C514, C521, C524, C600, C601, C602, C603, C604, C605, C606, C607, C608, C609, C610, C611, C612, C614, C48	0,1	C-EU050-024X044	C050-024X044	CERAMIC DISK	23
C13, C16, C30, C59, C61, C83, C95	0.1	C-EU050-025X075	C050-025X075	CAPACITOR, European symbol	7
C136, C144, C148	0.0012	C-EU050-025X075	C050-025X075	CAPACITOR, European symbol	3
C20	0.012	C-EU050-025X075	C050-025X075	CAPACITOR, European symbol	1
C85, C97	0.015	C-EU050-025X075	C050-025X075	CAPACITOR, European symbol	2
C32, C111	0.018	C-EU050-025X075	C050-025X075	CAPACITOR, European symbol	2
C6, C75, C76	0.0022	C-EU050-025X075	C050-025X075	CAPACITOR, European symbol	3
C18, C56, C80, C102	0.022	C-EU050-025X075	C050-025X075	CAPACITOR, European symbol	4
C138, C146, C150	0.0027	C-EU050-025X075	C050-025X075	CAPACITOR, European symbol	3
C33, C62, C115, C116	0.027	C-EU050-025X075	C050-025X075	CAPACITOR, European symbol	4
C2, C81	0.0033	C-EU050-025X075	C050-025X075	CAPACITOR, European symbol	2
C7, C12, C14, C19	0.033	C-EU050-025X075	C050-025X075	CAPACITOR, European symbol	4
C3, C42, C43, C51, C52, C54, C70, C117, C118, C161	0.0047	C-EU050-025X075	C050-025X075	CAPACITOR, European symbol	10
C17, C25, C31, C53, C82, C96, C106, C119, C89, C163, C165, C168, C164, C167, C166, C517, C518, C519	0.047	C-EU050-025X075	C050-025X075	CAPACITOR, European symbol	18
C101	0.0056	C-EU050-025X075	C050-025X075	CAPACITOR, European symbol	1
C39	0.056	C-EU050-025X075	C050-025X075	CAPACITOR, European symbol	1
C5, C38, C68, C71	0.0068	C-EU050-025X075	C050-025X075	CAPACITOR, European symbol	4
C1	0.068	C-EU050-025X075	C050-025X075	CAPACITOR, European symbol	1

C103	0.0082	C-EU050-025X075	C050-025X075	CAPACITOR, European symbol	1
C77	10p	C-EU050-025X075	C050-025X075	CAPACITOR, European symbol	1
C4, C50, C140, C159, C47	100p	C-EU050-025X075	C050-025X075	CAPACITOR, European symbol	5
C63, C84, C120	220p	C-EU050-025X075	C050-025X075	CAPACITOR, European symbol	3
C139, C147, C151	390p	C-EU050-025X075	C050-025X075	POLYSTYRENE CAPACITOR	3
C130, C131, C160	470p	C-EU050-025X075	C050-025X075	POLYSTYRENE CAPACITOR	3
POLARIZED CAPACITORS					
C36, C99	0.15/10	CPOL-EUE2-5	E2-5	POLARIZED CAPACITOR, European symbol	2
C22	0.22/10	CPOL-EUE2-5	E2-5	POLARIZED CAPACITOR, European symbol	1
C8, C9	0.33/50	CPOL-EUE2-5	E2-5	POLARIZED CAPACITOR, European symbol	2
C11, C15, C35, C37, C55, C57, C65, C67, C78, C98, C100	0.47/50	CPOL-EUE2-5	E2-5	POLARIZED CAPACITOR, European symbol	11
C21, C23	0.68/10	CPOL-EUE2-5	E2-5	POLARIZED CAPACITOR, European symbol	2
C135, C153, C154	1.0/50	CPOL-EUE2-5	E2-5	POLARIZED CAPACITOR, European symbol	3
C46	4.7/50	CPOL-EUE2-5	E2-5	POLARIZED CAPACITOR, European symbol	1
C10, C26, C27, C28, C29, C40, C41, C44, C45, C60, C72, C74, C86, C87, C104, C105, C107, C108, C109, C110, C123, C124, C127, C128, C129, C132, C133, C142, C152, C155, C157, C158	10./16	CPOL-EUE2-5	E2-5	POLARIZED CAPACITOR, European symbol	32
C143	47/35	CPOL-EUE2.5-6	E2,5-6	POLARIZED CAPACITOR, European symbol	1
C520, C515	100/10	CPOL-EUE2-5	E2-5	POLARIZED CAPACITOR, European symbol	2
C114, C141	100/35	CPOL-EUE3.5-8	E3,5-8	POLARIZED CAPACITOR, European symbol	2
C94	220/35	CPOL-EUE3.5-8	E3,5-8	POLARIZED CAPACITOR, European symbol	1
C162	680/35	CPOL-EUE5-13	E5-13	POLARIZED CAPACITOR, European symbol	1
C90, C91	2200/35	CPOL-EUE7.5-16	E7,5-16	POLARIZED CAPACITOR, European symbol	2
POTENTIOMETERS TRIMMERS					
VR5, VR23	1MA	EVUF3A	EVUF	9 mm Square Rotary Potentiometers	2
VR6, VR9, VR10, VR13, VR16, VR25, VR27	10KB	EVUF3A	EVUF	9 mm Square Rotary Potentiometers	7
VR8, VR12, VR15, VR18, VR20, VR22, VR24, VR26	50KB	EVUF3A	EVUF	9 mm Square Rotary Potentiometers	8
VR2	100KA	EVUF3A	EVUF	9 mm Square Rotary Potentiometers	1
VR4, VR21, VR19	100KB	EVUF3A	EVUF	9 mm Square Rotary Potentiometers	3
VR11, VR14, VR17, VR7	500KB	EVUF3A	EVUF	9 mm Square Rotary Potentiometers	4
VR3	500RB	EVUF3A	EVUF	9 mm Square Rotary Potentiometers	1
VR28	50KB	POT_DUAL	PTV112-4	12mm dual Rotary potentiometer	1
VR29	PEC16_ENCODER	PEC16_ENCODER	PEC16_ENCODE R	BOURNS Rotary encoder with switch serie PEC16	1
TM2	100K	S64W	TRIM_US-S64W	Trimm resistor	1
TM3	10K	TRIM_EU-B25P	B25P	POTENTIOMETER	1
TM1	10K	S64W	TRIM_US-S64W	Trimm resistor	1
RESISTORS					
RP1, RP2, RP3, RP4, RP5, RP6, RP7, RP8, RP9, RP10, RP11, RP12, RP13, RP14, RP15, RP16, RP17, RP18, RP19, RP20	0R	R-US_0207/7	0207/7	RESISTOR, American symbol	20
R12A, R65, R68, R102, R126, R163, R195, R201, R204, R236, R250, R253, R333, R338, R359, R473, R474, R500, R503, R506, R509, R512, R515, R518, R521, R524, R527, R552, R699	1K	R-US_0207/7	0207/7	RESISTOR, American symbol	29
R33, R39, R72, R74, R76, R101, R133, R135, R137, R162, R225, R229, R256, R258, R267, R329, R360, R363, R377, R402, R403	1M	R-US_0207/7	0207/7	RESISTOR, American symbol	21
R616, R617, R618, R619, R620, R621, R622, R623, R624, R625, R626, R627, R628, R629, R630, R631, R640, R641, R642, R643, R644, R645, R646, R647, R672, R673, R674, R675, R676, R677, R678, R679, R680, R681, R682, R683, R684, R685, R686, R687, R365	1.2K	R-US_0207/7	0207/7	RESISTOR, American symbol	41
R288	1.5K	R-US_0207/7	0207/7	RESISTOR, American symbol	1
R27	1.5M	R-US_0207/7	0207/7	RESISTOR, American symbol	1
R35	1.8K	R-US_0207/7	0207/7	RESISTOR, American symbol	1

R19, R21, R51, R53, R104, R106, R116, R165, R167, R176, R230, R278, R304, R326, R327, R355, R357, R380, R394, R404, R411, R427, R430, R436, R437, R484, R485, R488, R530, R532	2.2K	R-US_0207/7	0207/7	RESISTOR, American symbol	30
R60, R121, R331	2.2M	R-US_0207/7	0207/7	RESISTOR, American symbol	3
R227, R401	2.7K	R-US_0207/7	0207/7	RESISTOR, American symbol	2
R205, R285, R417	3.3K	R-US_0207/7	0207/7	RESISTOR, American symbol	3
R9, R11, R38, R45, R46, R120, R180, R206, R214, R217, R219, R240, R299, R383, R397, R419, R421, R426, R435, R471, R481, R689, R690	4.7K	R-US_0207/7	0207/7	RESISTOR, American symbol	23
R228, R314, R456, R457, R459, R461, R462, R463, R465, R467, R475, R477, R479, R480	5.6K	R-US_0207/7	0207/7	RESISTOR, American symbol	14
RA9A, RA10A, RA11A, RA12A, RA13A	5K	R-US_0207/7	0207/7	RESISTOR, American symbol	5
R20, R276, R441, R443	6.8K	R-US_0207/7	0207/7	RESISTOR, American symbol	4
R507, R514, R523, R528	8.2K	R-US_0207/7	0207/7	RESISTOR, American symbol	4
R2, R8, R22, R37, R52, R62, R71, R77, R84, R88, R89, R90, R94, R103, R105, R112, R117, R119, R123, R124, R132, R138, R145, R149, R150, R151, R155, R164, R166, R173, R179, R181, R182, R183, R184, R191, R197, R209, R211, R212, R216, R222, R241, R242, R243, R244, R263, R268, R274, R275, R283, R284, R286, R305, R340, R342, R346, R356, R358, R361, R367, R376, R382, R384, R388, R390, R391, R398, R406, R440, R442, R448, R450, R451, R455, R458, R460, R464, R466, R468, R476, R478, R486, R487, R526, R531, R533, R600, R601, R602, R603, R604, R605, R606, R607, R608, R609, R610, R611, R612, R613, R614, R615, R632, R633, R634, R635, R636, R637, R638, R639, R655, R656, R657, R658, R659, R660, R661, R662, R663, R664, R665, R667, R668, R669, R670, R671, R688, R691, R692, R693, R700, RA9B, RA10B, RA11B, RA12B, RA13B	10K	R-US_0207/7	0207/7	RESISTOR, American symbol	137
R10, R408, R415, R423, R492, R501, R502, R504, R505, R510, R511, R516, R517, R519, R520, R525	12K	R-US_0207/7	0207/7	RESISTOR, American symbol	16
R235, R238, R508, R513, R522, R529	15K	R-US_0207/7	0207/7	RESISTOR, American symbol	6
R221	18K	R-US_0207/7	0207/7	RESISTOR, American symbol	1
RA9C, RA10C, RA11C, RA12C, RA13C	20K	R-US_0207/7	0207/7	RESISTOR, American symbol	5
R1, R6, R14, R24, R41, R44, R48, R57, R92, R93, R114, R153, R154, R177, R190, R193, R196, R210, R213, R215, R218, R239, R246, R265, R282, R290, R296, R300, R301, R344, R345, R387, R395, R396, R399, R422, R444, R445, R446, R447, R449, R454, R469, R470, R551	22K	R-US_0207/7	0207/7	RESISTOR, American symbol	45
R431, R438, R482	22R	R-US_0207/7	0207/7	RESISTOR, American symbol	3
R185, R493, R695	33K	R-US_0207/7	0207/7	RESISTOR, American symbol	3
R16, R202	39K	R-US_0207/7	0207/7	RESISTOR, American symbol	2
RA9D, RA10D, RA11D, RA12D, RA13D	40K	R-US_0207/7	0207/7	RESISTOR, American symbol	5
R4, R13, R32, R36, R50, R58, R59, R73, R75, R78, R134, R136, R139, R187, R208, R247, R261, R264, R277, R294, R364, R366, R368, R400, R424, R425, R483, R494, R550	47K	R-US_0207/7	0207/7	RESISTOR, American symbol	29
R43, R55, R98, R99, R115, R159, R160, R175, R199, R203, R279, R289, R298, R303, R350, R351, R379	47R	R-US_0207/7	0207/7	RESISTOR, American symbol	17
R111, R171, R385	56K	R-US_0207/7	0207/7	RESISTOR, American symbol	3
R113, R172, R226, R386,	68K	R-US_0207/7	0207/7	RESISTOR, American symbol	4
RA9E, RA10E, RA11E, RA12E, RA13E	80K	R-US_0207/7	0207/7	RESISTOR, American symbol	5
R220, R237	82K	R-US_0207/7	0207/7	RESISTOR, American symbol	2

R3, R5, R7, R12, R15, R23, R25, R29, R30, R31, R34, R49, R63, R64, R66, R67, R69, R70, R79, R80, R81, R82, R83, R85, R86, R87, R95, R97, R100, R125, R127, R128, R130, R131, R140, R141, R142, R143, R144, R146, R147, R148, R156, R158, R161, R186, R188, R189, R194, R198, R200, R249, R251, R252, R254, R255, R257, R259, R260, R262, R266, R269, R270, R271, R272, R273, R281, R287, R292, R328, R330, R334, R335, R336, R337, R339, R341, R347, R349, R362, R369, R370, R371, R372, R373, R374, R375, R389, R452, R491, R496	100K	R-US_0207/7	0207/7	RESISTOR, American symbol	91
R91, R96, R152, R157, R245, R343, R348, R429, R434, R490, R696	100R	R-US_0207/7	0207/7	RESISTOR, American symbol	11
R28, R207, R495	150K	R-US_0207/7	0207/7	RESISTOR, American symbol	3
R489	150R	R-US_0207/7	0207/7	RESISTOR, American symbol	1
RA9F, RA10F, RA11F, RA12F, RA13F	160K	R-US_0207/7	0207/7	RESISTOR, American symbol	5
R108, R109, R118, R169, R170, R178, R192, R280, R291, R293, R295, R297, R302, R352, R353, R381, R420, R453	220K	R-US_0207/7	0207/7	RESISTOR, American symbol	18
R428, R433, R315, R316, R317, R318, R319, R694	220R	R-US_0207/7	0207/7	RESISTOR, American symbol	8
R432	270K	R-US_0207/7	0207/7	RESISTOR, American symbol	1
R26, R47, R414	330K	R-US_0207/7	0207/7	RESISTOR, American symbol	3
R56, R223	330R	R-US_0207/7	0207/7	RESISTOR, American symbol	2
R17, R18, R42, R54, R61, R107, R110, R122, R129, R168, R224, R233, R234, R248, R332, R354, R378, R407, R416, R439, R472	470K	R-US_0207/7	0207/7	RESISTOR, American symbol	21
R697	470R	R-US_0207/7	0207/7	RESISTOR, American symbol	1
R418	680R	R-US_0207/7	0207/7	RESISTOR, American symbol	1
MISCELLANEOUS					
DIS1	TUXGR_16X2_R2	TUXGR_16X2_R2	TUXGR_16X2_R2	Tuxgraphics LCD display 16x2 characters reflective,	1
X1	16MHz	XTAL/S	QS	CRYSTAL	1
L1	33u	BS11	BS11	INDUCTOR	1
S20, S21, S22, S23, S24, S25, S26, S27, S28, S29, S30, S31, S32, S33, S34, S35, S36	ZTSN_SW_LED	ZTSN_SW_LED	SPH_SW		17
S1, S2, S3, S4, S5, S6, S7, S8, S9, S10, S11, S12, S13, S14, S15, S16, S17, S18, S19	MX1A_CHERRY_SW _LED	MX1A_CHERRY_SW_LED	MX1A-SW		19
POWER ROCKER SWITCH				POWER ROCKER SWITCH	1
SCREW M3	M3 x 6mm				15
RUBBER FOOT				RUBBER FOOT WITH SCREW SET	4
HEAT SINK	TO-220			HEAT SINK TO-220 VERTICAL	2
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