

Bill of Materials PCB MCU NCM107 v1.1
For Nixie Clock IN-12 (Tubes Board NCT412 v1.0)

	Creation Date: 21.12.2016				
#	Designator	Quantity	Value	Package	Comment
1	B1	1	Buzzer HCS0903G	SMD 8,5x8,5mm	Passive Buzzer
2	BT1	1	Battery Holder CR1220	SMD CR1220	Battery Holder
3	C2, C3, C26, C27, 'C12, C16, C18, C20, C21, C22, C23, C29	12	100nF 50V	0805	Capacitor Ceramic
4	C4	1	220uF 16V	SMD 6,3x7,7mm (or TH Capacitor)	Capacitor Aluminium
5	C5, C9, C11, C14	4	10uF 16V	0805	Capacitor Ceramic
6	C6	1	10uF 250V	10x10,5mm UUX2E100MNL1GS (or TH Capacitor)	Capacitor Aluminium
7	C7, C28	2	100nF 250V	1206	Capacitor Ceramic
8	C10	1	10nF 50V	0805	Capacitor Ceramic
9	C13	1	1000uF 16V	10x10,5mm (or TH Capacitor)	Capacitor Aluminium
10	C15, C17, C19	3	10uF 16V	Size-A (SMD3216)	Capacitor Tantal
11	C24, C25	2	22pF 50V	0805	Capacitor Ceramic
12	D1, D2, D3, D4, D5, D6, D7, D8, D9, D10, D11, D21, D22, D23, D24, D25, D26, D27, D28, D29	20	BAV103	SOD80/MLL34	Diode
13	D12	1	ZM4764A	DO-213AB	Diode zener
14	D13	1	LED	LED RED 1206	Diode LED
15	D14	1	ES2J	DO-214AA (SMB)	Diode Fast
16	D15, D19	2	SS26	DO-214AA (SMB)	Diode schottky
17	D16	4	SMAJ18CA	DO-213AC (SMA)	Diode TVS
18	D17	1	SMBJ220CA	DO-214AA (SMB)	Diode TVS
19	D20	4	DL4148	SOD80/MLL34	Diode
20	DOWN, MODE, UP	3	Button SWT-3	SWT-3 6mm	Button
21	ExDOWN, ExMODE, ExUp, ExPow	4	PH2.0-2p	PH2-2p	Header connector
22	ExUSB	4	PH2.0-4p	PH2-4p	Header connector
23	F1	1	0 ohm	1206 (or Fuse 3A 36V)	Resistor
24	J1	1	PWR_DJK-02A	KLD-0202_NOM	Power connector
25	J2	1	MUSB	UX60-MB	Mini USB
26	L1	1	220uH 1,7A	SMD 12x8mm	Shielded inductor
27	L2	1	15-22uH 2A	CDRH104R 10x10mm	Shielded inductor
28	MAIN	1	PBD-38	PBD-38 (KLS1-208-2-38-S)	Header connectors
29	Q1	1	STD18N55M5 (IRFR320TRPBF, AOD458)	DPAK	Transistor
30	R1, R2, R3, R4, R5, R8, R29, R31, R33, R34, R35	11	1k	0805	Resistor
31	R6, R7, R19, R20	4	300k 0805	0805	Resistor
32	R9	1	1.5 MOhm 0805	0805	Resistor
33	R10	1	1 Ohm	1206	Resistor
34	R11	1	150k 0805	0805	Resistor
35	R12, R14, R15, R16, R18, R26, R27, R30	8	10k 0805	0805	Resistor
36	R13	4	10K Opt 0805	R_0805	Resistor
37	R17	1	10k	3296W	Resistor adjust
38	R21	1	0.1 Ohm	R2512	Resistor
39	R22	1	95.3k 0805	0805	Resistor
40	R23	1	18.2k 0805	0805	Resistor
41	R24, R25	2	27 Ohm 0805	0805	Resistor
42	T1, T3, T5	3	PMBTA92	SOT23-3N	Transistor PNP
43	T2, T4, T6, T7, T8	5	PMBTA42	SOT23-3N	Transistor NPN

44	TLH	4	PH2.0 3p	PH2 3p	Header connectors
45	U1	1	HV5812WG	SOIC-28W	IC Driver
46	U4	1	MAX1771CSA	SOIC-8	IC DC-DC
47	U5	1	RT8258GE (Replace see schem)	SOT23-6	IC DC-DC
48	U6	1	DS3231S	SOIC-16W	IC RTC
49	U7	1	FT230XS	SSOP-16	IC USB-UART
50	U8	1	ATmega328P-PU	DIP-28	IC MCU
51	U9	1	ULN2003D	SOIC-16	IC Driver
52	Z1	1	16Mhz	SMD 6x3,5mm	Quartz
53	not market on PCB	1	SIP DIP-28	SIP DIP-28	Install to U8
54	not market on PCB	1	Battery Li-ion CR1220	CR1220	Install to BT1
55	PCB MCU NCM107 v1.1 (Manufacture)	1			

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#	Designator	Quantity	Value	Package	Comment
1	MAIN1	1	PLD-38	PLD-38	Header connectors
2	D1, D2, D3, D4, D5, D6	6	LED RGB 3528	3528	LED RGB
3	R5, R6, R7, R8, R9, R10, R11, R12, R13, R14, R15, R16	12	100 Ohm	0805	Resistor
4	R17, R18, R19, R20, R21, R22	6	150 Ohm	0805	Resistor
5	R1, R2, R3, R4	4	150k	0805	Resistor
6	R23, R24, R25, R26, R27, R28	6	1k	0805	Resistor
7	NX0, NX1, NX2, NX3, NX4, NX5	6	IN-12	NIXIE Tubes	NIXIE Tubes
8	DS1, DS2, DS3, DS4	4	INS-1	Neon Lamps	Neon Lamps
9	not market on PCB	4	M3x5mm	IN-OUT	Hex pillar
10	not market on PCB	4	M3x18mm	IN-IN	Hex pillar
11	not market on PCB	2	M3x25mm	IN-IN	Hex pillar
12	not market on PCB	6	M3x6mm L=6mm		Screw
13	PCB TUBES NCT412 Manufacture	1			PCB 50x180mm

3	Wooden Case (Victor)	4			
4	Assembled NIXIE Clock (Ivan)	4			
5	PG2-1	4		Power connector 5.5x2.1mm	
6	MTS 123	2		Button (ON) OFF (ON)	
7	USB-B	4	USB-B Vertical	KIT for USB-B	
		2	Hex pillar 12mm		
		4	PCB NCU 701		
		2	Screw M3x6mm		
		2	Screw M3x6mm		
		4	PH2.0 4 plug with wire		
8	Top cover	4			
9	Back Panel	4			
10	Logo (Divergence Meter)	4			
11	Screw countersunk head M3x6mm	6			
12	screw nail countersunk head d2,5x8mm	4			
13	screw nail d2,5x8mm	4			
15	PN2.0 2 plug with wire	4			
16	Пайка MCU	4			
17	Пайка Tube	4			