

NAVRH PLL

$500 \text{ kHz} @ 3,2 \text{ V} \Rightarrow C_1 = 100 \text{ pF} / R_1 = 5 \text{ k}\Omega$   
 $\Delta f / \Delta V = 430 \text{ kHz} / 2 \text{ V} = 215 \text{ kHz} / \text{V}$   
 $K_{VCO} = 1,351 \cdot 10^6 \frac{\text{rad}}{\text{V} \cdot \text{s}}$

$K_D = \frac{V_{CC}}{4\pi} = 0,398 \frac{\text{V}}{\text{rad}}$

$\xi = 0,7$

$N = 10.000 (50 \text{ Hz} \rightarrow 500 \text{ kHz})$

$\omega_n \leq \frac{K_D \cdot K_{VCO} \cdot 2\xi}{N}$

$f_{REF} = 50 \text{ Hz}$

$f_n \leq 5 \text{ Hz} \Rightarrow \omega_n = 31,4 \frac{\text{rad}}{\text{s}}$

$T_1 = \frac{K_D \cdot K_{VCO}}{N \cdot \omega_n^2} = 0,055 \text{ sec}$

$T_2 = \frac{2\xi}{\omega_n} - \frac{N}{K_D \cdot K_{VCO}} = 0,026 \text{ sec}$

$C = 1 \mu\text{F}$   
 $R_3 = 30 \text{ k}\Omega$   
 $R_4 = 27 \text{ k}\Omega$

$R_3 = \frac{T_1 - T_2}{C}$   
 $R_4 = \frac{T_2}{C}$

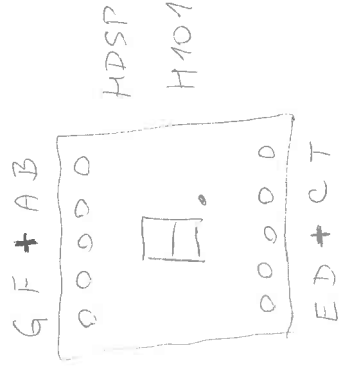
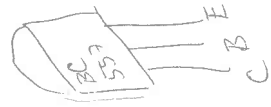
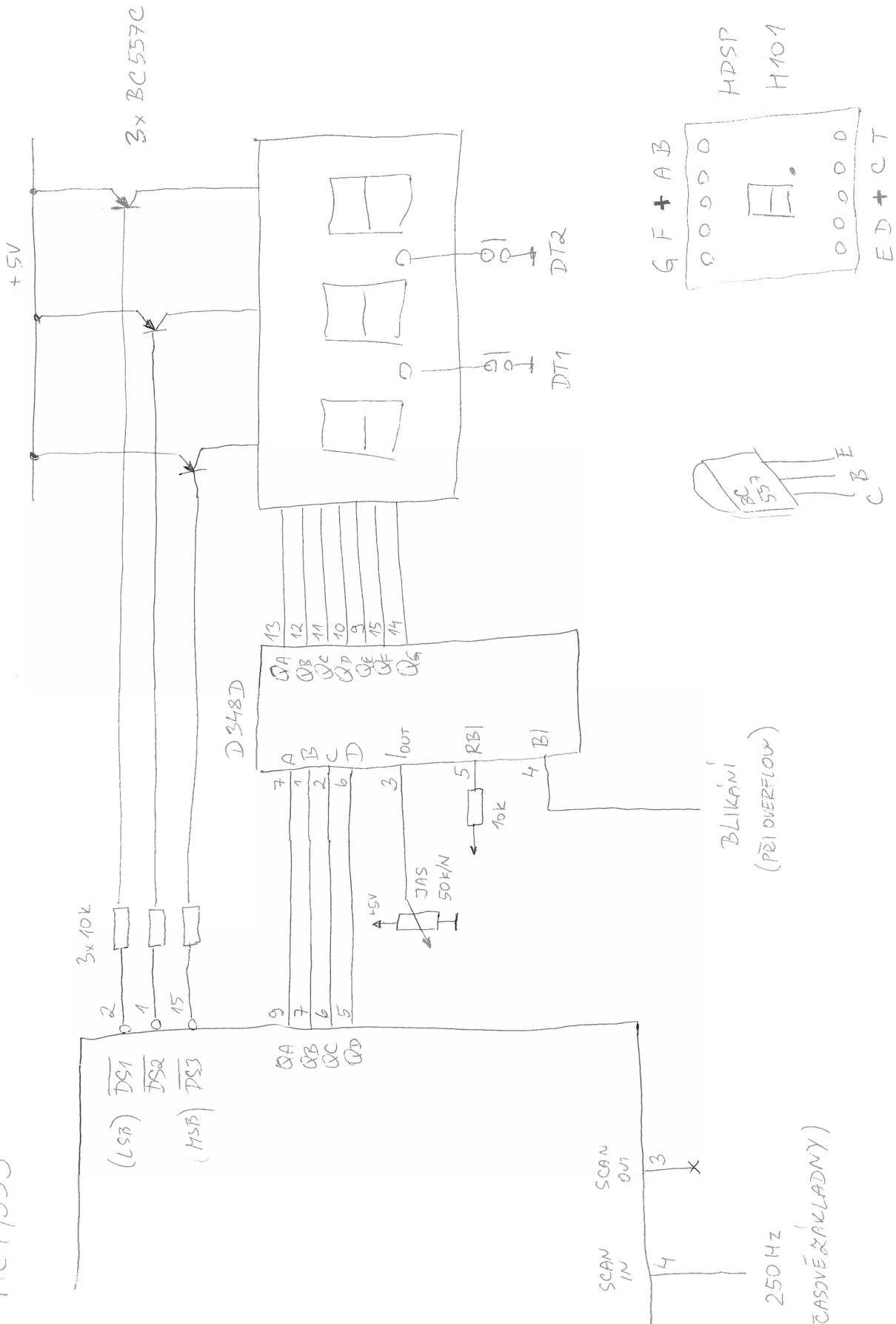
MERIC KAPACITY

UNIVERZÁLNÍ ČASOVÁ ZÁKLADNA

250 Hz (2:3) — SEKVENČER 4022  
 12,5 Hz (1:1) —  
 ~3 Hz BLIKÁNÍ OVERFLOW

2500 Hz (1:1) — MUX DISPLEJE  
 1000 Hz (2:3)  
 500 Hz (1:4)  
 250 Hz (1:1) —  
 100 Hz (2:3)  
 50 Hz (1:4)

MC 14553



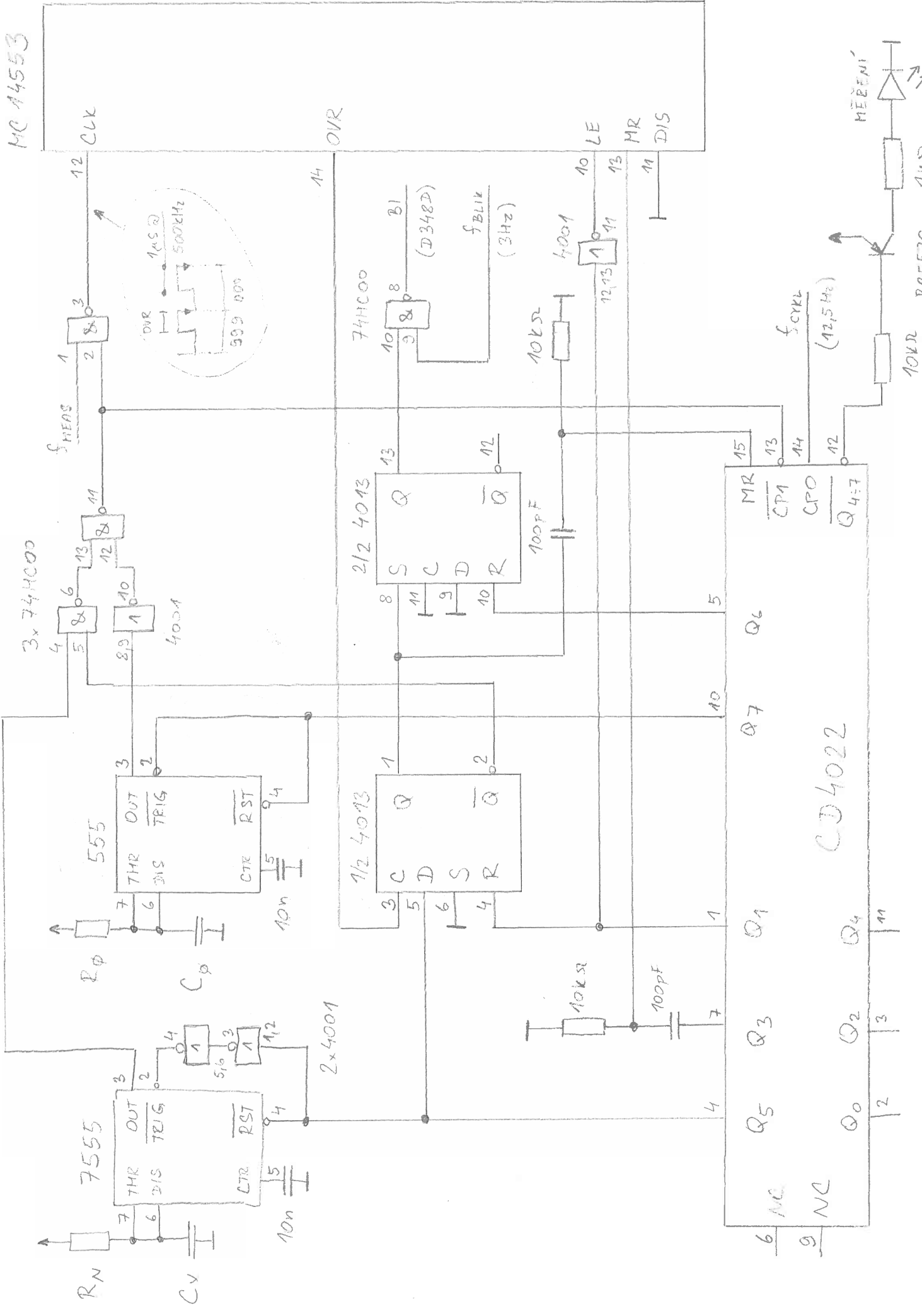
MĚŘIC KAPACITY  
OBVODY DISPLEJE

BLIKÁNÍ  
(PŘI OVERTERFOV)

(Z ČASOVĚŘÁDKOVY)

DISP

MC 14553



CLK

OVR

LE

MR

DIS

3x 74HC00

555

7555

2/2 4013

1/2 4013

CD4022

MC 14553

BC557C

10k

1k

500kHz

(12.5Hz)

100pF

10k

100pF

2x 4001

10n

10n

400k

74HC00

B1

f\_CLK

(3Hz)

10k

4001

12,13

10

13

11

Q6

Q7

Q1

Q3

Q5

6 NC

9 NC

Q4

Q2

Q0

Q1

Q7

Q6

MR

CP1

CPO

Q4:7

15

13

14

12

10

1

7

4

5

11

12

13

14

15

DISP

# DMK7555 - měřicí rozsahy

rozsah	displej	rozsah [F]	R <sub>NAB</sub>	t <sub>MEAS(MAX)</sub> [s]	f[Hz]	COUNT
1000pF	0 0 0	0,000000001	1820500	0,0020	500 000	1 000
10nF	0 . 0 0	0,00000001	182050	0,0020	500 000	1 000
100nF	0 0 . 0	0,0000001	18205	0,0020	500 000	1 000
1000nF	0 0 0	0,000001	18205	0,0200	50 000	1 000
10μF	0 . 0 0	0,00001	18205	0,2000	5 000	1 000
100μF	0 0 . 0	0,0001	18205	2,0000	500	1 000
1000μF	0 0 0	0,001	1821	2,0000	500	1 000
10mF	0 . 0 0	0,01	1821	20,0000	50	1 000