2020/06/22

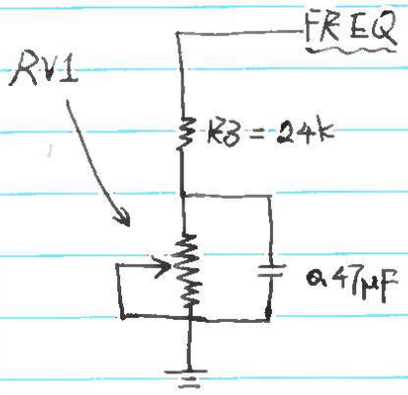
Components that need replacement:

RV1 RV2 RV3 RV4

RV1 → freq
RV2 → ITH
RV3 RV4 → Setpoint

3362P-1-503TLF
50kΩ

3362R-1-222
2.22kΩ



If RV1 = 0Ω (0~50kΩ)

FREQ voltage ~0.3V to INTVcc
↓
5~5.2V

Input Voltage 5V → ~5V
or INTVcc = 0V

$I = \frac{5}{24k} = 0.2083\ mA$

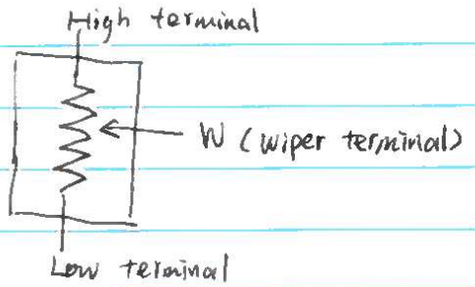
Oscilloscope check INTVcc ≒ 5V

I = 0.2083 mA
↓
MAX53P5 → max current to any input
50mA

~~ITH~~ ITH pin

~~480m~~ 480mV { 520 mV / 440 mV } depends on gain (Feedback 0.5Ω / 2k)

Operating voltage 0~5.25V



Control pin { ADDR0 / SDA → serial data line / SCL → serial clock line }

I²C INTERFACE

Clock ~~400kHz~~ → generated by master

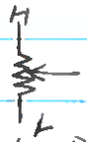
SDA → byte the data word for address

pull up resistor 4.7~~Ω~~kΩ

Start .... Stop

SCL ↑

Single 8 bits

Voltage divider mode →  ⇒ Code Hex : FF ~ 00 (256 Tap)

Variable Resistor mode → 5, 10, 50 kΩ

$R_{wiper} = R_W = (V_W - V_H)/I_W$ → 25 ~ 1 kΩ

Charge pump disabled → Terminal voltage rang 0 ~ V_{DD}

SCL freq-max = 400kHz (clock)

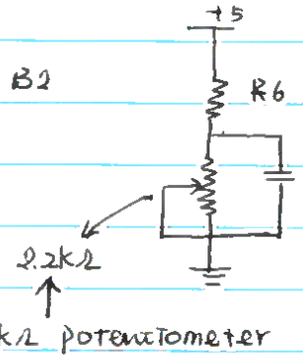
setup time for START = 0.6 μs

MCP413X / 415X / 423X / 425X

→ Single Potentiometer or Dual Potentiometer

Setpoint RV3, RV4

Sn74LVC1G3157 → B1 & B2



$I_{max} = \frac{5V}{10k} = 0.5\ mA$

> 2.5 mA maximum

A/W/B

B1 & B2 with I/O, Set High to enable B2 — Connect A

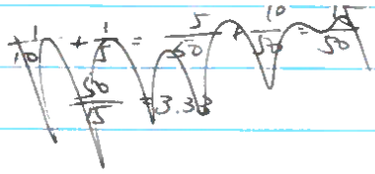
Set Slow to enable B1

S signal controlled by IOT 33 (Switch)

SyncBack → High voltage switching

Capselect → High V high I

LC_MODE → 000 / 000



Sn74LVC1G3157 Freq

replaced by Single pole triple-throw analog switch with enable input

NX3L4357 $\overline{E}$ S1 S0 Control Y0 / Y1 / Y2 = Z

BG = 0 ~ 5V / 5.2V

$\frac{1}{700ns}$ → freq. mμns 1.38MHz

320 ~ 1300 kHz

$\frac{1}{1.45\mu s} = 0.6897\ MHz$

$\frac{1}{708ns} \approx 1.4MHz$

-30.4ns +3.18μs

3180 ns / 30 = 210ns → 311kHz