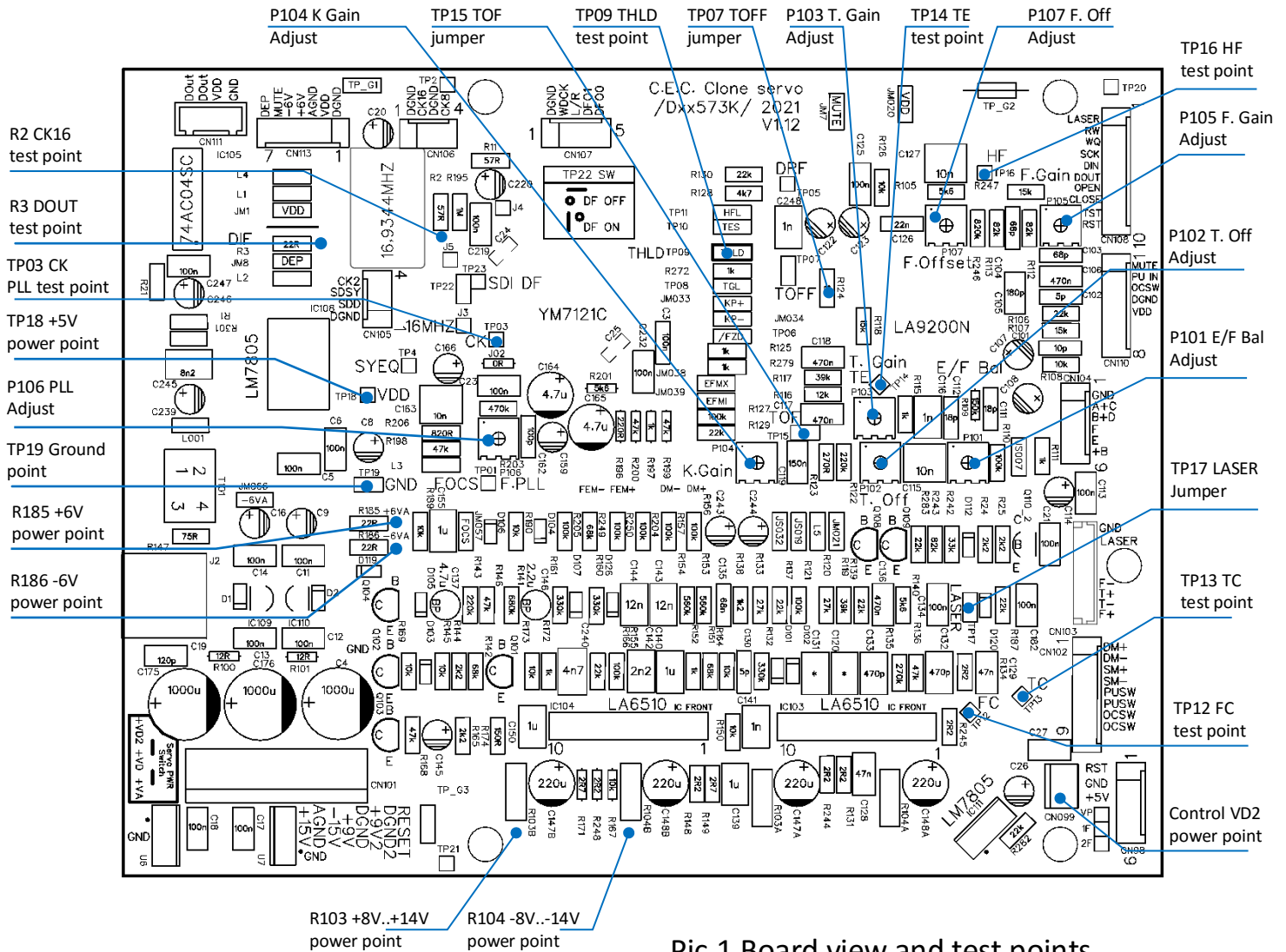


CEC Clone Servo Adjustment procedure Rev.1



Pic.1 Board view and test points

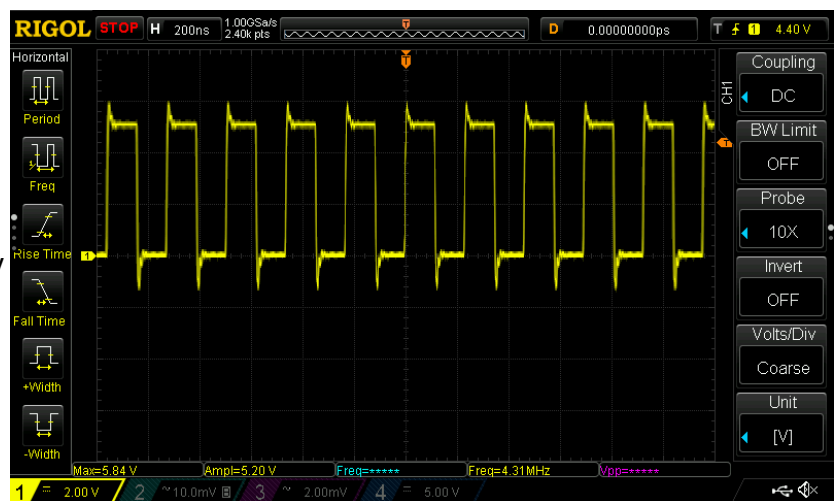
1.INITIAL CHECK

1.1. Check all power supply voltage – **VD2** for controller, **TP18** +5V for Digital servo, **R185, R186** +6V for Analog servo, **R103, R104** +10V for Drivers (its may be from +8V to +14V). Use **TP19** point as ground.

1.2. Check **R2 CK16** for system clock 16,9344 MHz

1.3. Check "all zero" **R3 DOUT** for signal present.

1.4. Check PLL voltage. Adjust **P106 F.PLL** to 4,32...4,33MHz on **TP03 CK** point. (pic.2)

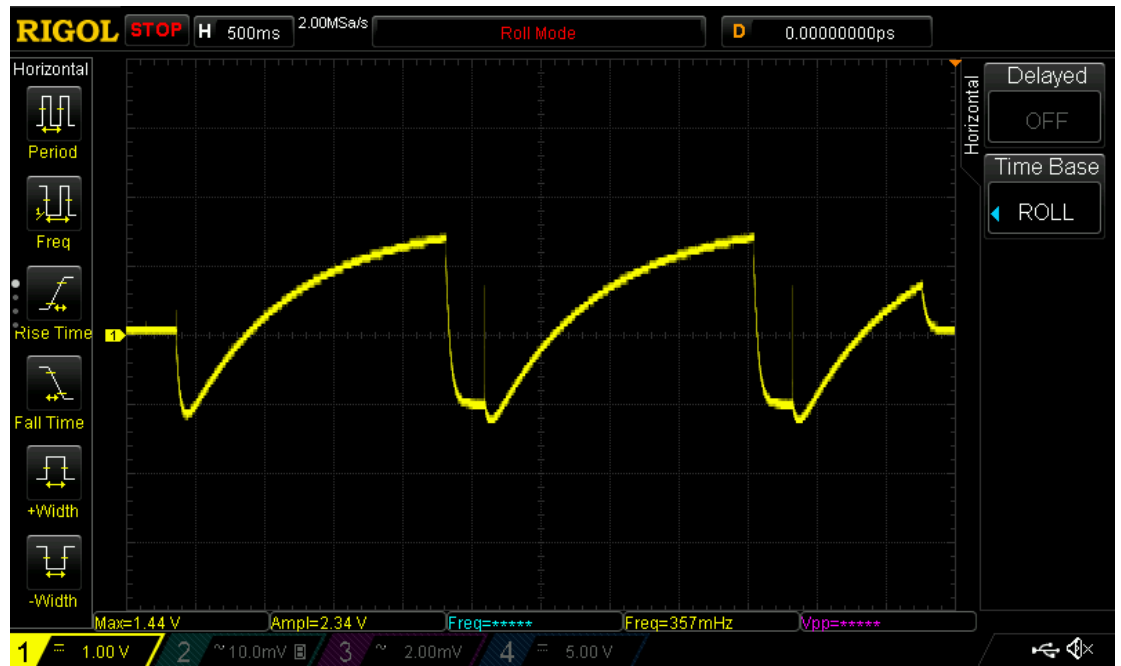


Pic.2 TP03 CK 4,32MHz test points

1.5. Check YM7121c initialization:

- Turn off the power
- press and hold keys "STOP"+"PLAY", and turn on the power. You enter to service mode
- Check a non-zero status on the display - It will mean a successful servo initialization.

1.6. Close the contact of the disk door, and look for laser head parking, and lens move up and down symmetrically. Connect a oscilloscope to **TP12** FC test point and control the curve to pic.3.



Pic.3 TP12 FC disk search

2. TRACKING OFFSET

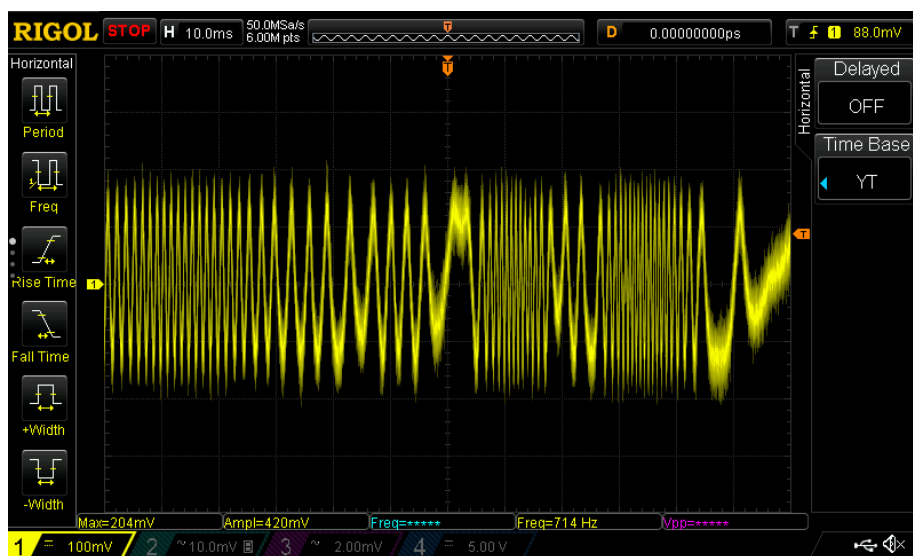
- 2.1. Turn on the power, push the STOP button
- 2.2. Connect a DC voltmeter to **TP13** TC.
- 2.3. Short the jumpers **TP17** LASER and **TP07** TOFF.
- 2.4. Adjust **P102** T. OFF to 100mV=+-10mV

3. FOCUS OFFSET

- 3.1. Turn on the power, push the STOP button
- 3.2. Connect a DC voltmeter to **TP12** FC.
- 3.3. Short the jumpers **TP17** LASER.
- 3.4. Adjust **P107** F. OFF to -500mV+-100mV

4. E/F BALANCE ADJUSTMENT

- 4.1. Press and hold keys "STOP"+"PLAY", and turn on the power. You enter to service mode
- 4.2. Connect a oscilloscope to **TP14** TE
- 4.3. Place the disk and start play.
- 4.4. Short the **TP15** TOF and adjust **P101** so that the waveform is symmetric about zero level $\pm 20\text{mV}$. (pic.4)



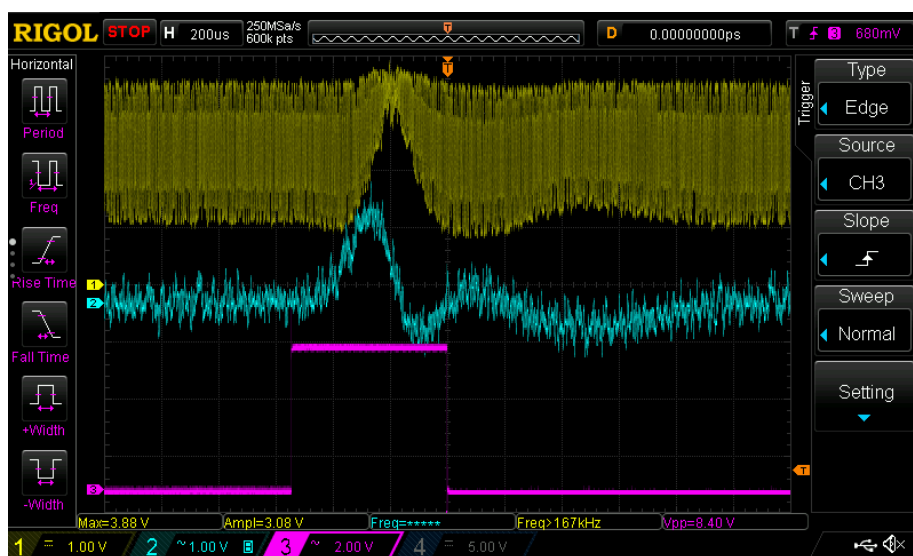
Pic.4 TP14 TE test point

5. FOCUS AND TRACKING GAIN ADJUSTMENT

- 5.1. Increase **P103** T.Gain to 10-15 degrees from mechanically center
- 5.2. Decrease **P105** F.Gain to 30 degrees from mechanically center

6. KICK GAIN ADJUSTMENT

- 6.1. Connect oscilloscope channel 1 to **TP15** HF, channel 2 to **TP14** TE, and channel 3 (or external trigger) to **THLD**
- 6.2. Play the track 1 from disk, and press the "PAUSE". Adjust **P104** K.Gain for a waveform is as showing at pic.5,
For rude adjusting, set the K.Gain near the border of "click" sound from laser head in silence.



Pic.5 K.Gain Adjustment