



Cornell Laboratory for
Accelerator-based Sciences and
Education (CLASSE)

Digital Tune Tracker Guide

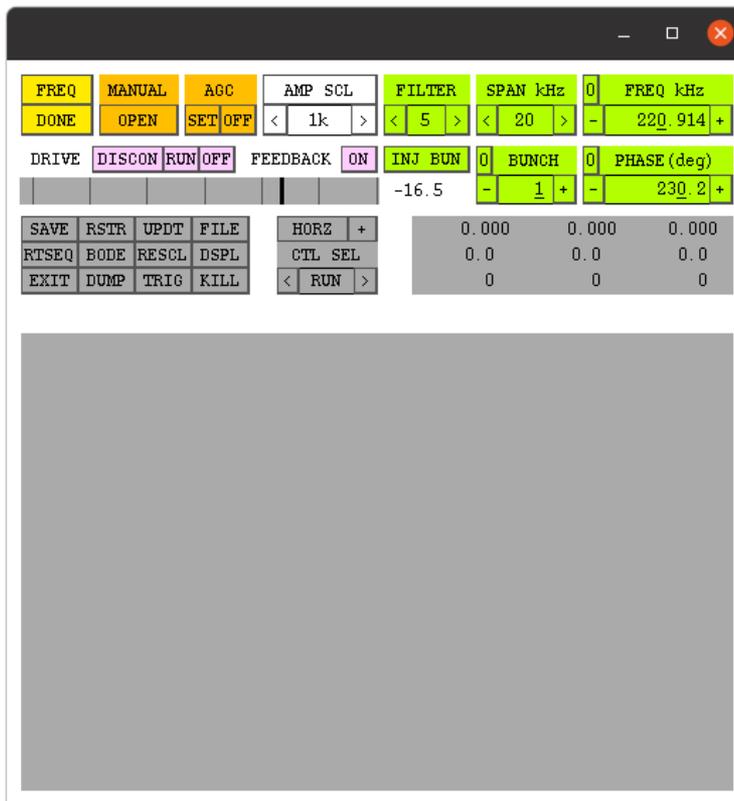
JSh 2021.02.18



- “Easy” method: On CESR node (cesr10x, cesr201), run `tt_lock_acq`
- If tune tracker lock parameters were previously saved, two plot windows will come up
- If dTTs lock successfully, everything is ready
 - When finished with tune trackers, only need to press ENTER to disconnect tune trackers and re-enable feedback



- On CESR node (cesr10x, cesr201), run `tt_test`





Shaded areas

indicate buttons you
won't need

The screenshot shows a control interface with several sections of buttons and data fields. The top section contains buttons for 'FREQ', 'MANUAL', 'ACC', 'AMP SCL', 'FILTER', 'SPAN kHz', and 'FREQ kHz'. Below these are 'DONE', 'OPEN', 'SET OFF', and a numeric field '1k'. The middle section has 'DRIVE', 'DISCON', 'RUN', 'OFF', 'FEEDBACK', 'ON', 'INJ BUN', 'BUNCH', and 'PHASE (deg)'. The bottom section contains 'SAVE', 'RSTR', 'UPDT', 'FILE', 'HORIZ +', 'RTSEQ', 'BODE', 'RESCL', 'DSPL', 'CTL SEL', 'EXIT', 'DUMP', 'TRIG', 'KILL', and '< RUN >'. A large grey shaded area is present at the bottom of the interface.

FREQ	MANUAL	ACC	AMP SCL	FILTER	SPAN kHz	0	FREQ kHz	
DONE	OPEN	SET OFF	< 1k >	< 5 >	< 20 >	-	220.914 +	
DRIVE	DISCON	RUN	OFF	FEEDBACK	ON	INJ BUN	BUNCH	PHASE (deg)
						-16.5	-	230.2 +
SAVE	RSTR	UPDT	FILE	HORIZ	+	0.000	0.000	0.000
RTSEQ	BODE	RESCL	DSPL	CTL SEL		0.0	0.0	0.0
EXIT	DUMP	TRIG	KILL	< RUN >		0	0	0



2) Cycle Drive to "FBKEXT"

1) Cycle feedback to "off"

The screenshot shows a control interface with several sections:

- Top Row (Yellow/Green buttons):** FREQ, MANUAL, AGC, AMP SCL, FILTER, SPAN kHz, 0, FREQ kHz.
- Second Row (Yellow/Green buttons):** DONE, OPEN, SET OFF, < 1k >, < 5 >, < 20 >, -, 220.914 +.
- Third Row (Buttons):** DRIVE, FBKEXT, RUN, ON, FEEDBACK, OFF, DNL RUN, 0, DUNOH, 0, DUNGE (Jog).
- Fourth Row (Values):** -16.5, -, 1 +, -, 230.2 +.
- Bottom Section (Grey buttons and values):**

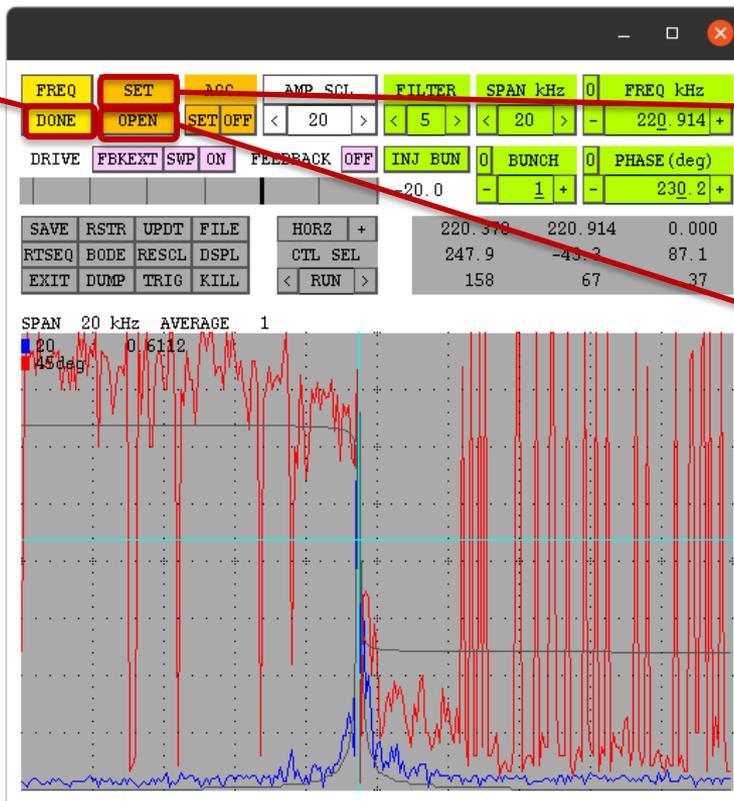
SAVE	RSTR	UPDT	FILE	HORZ	+	0.000	220.914	0.000	
RTSEQ	BODE	RESCL	DSPL	CTL	SEL	0.0	-87.7	42.6	
EXIT	DUMP	TRIG	KILL	<	RUN	>	0	85	44

3) Cycle Drive to "on"



4) This button may say “sweep” or “done”.

Cycle button until it says “sweep”, then press once more to locate the tune peak.



5) If tune peak is found, this button will change to “set”. Press once.

6) Click once. Should cycle from “open” → “closed” → “locked”



7) This button now controls phase. Click “center” once.

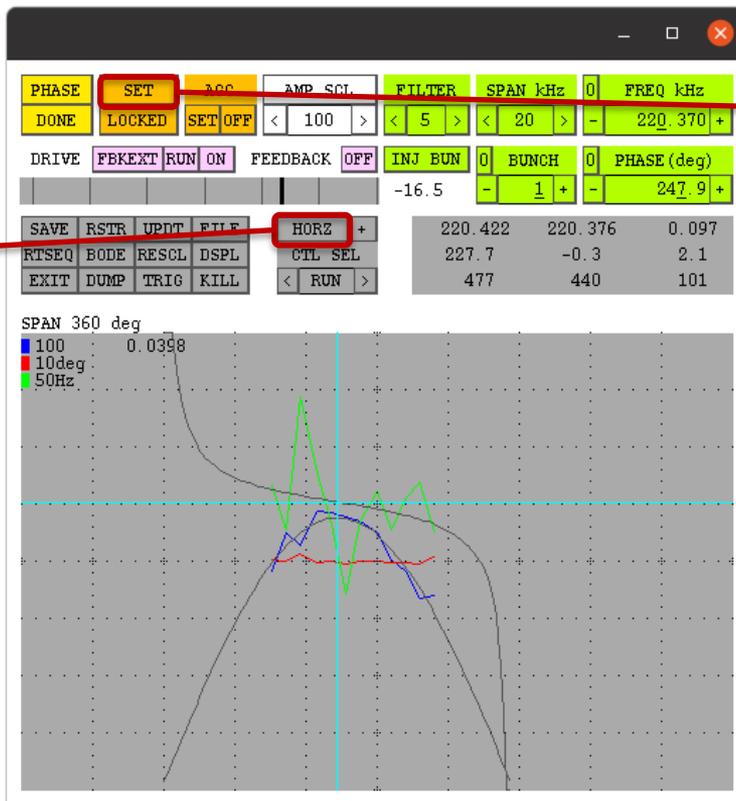


The screenshot shows a control interface with several sections:

- Control Buttons:** PHASE, MANUAL, AGC, AMP SCL, FILTER, SPAN kHz, PREQ kHz, CENTER, LOCKED, SET OFF, DRIVE, FBKEXT, RUN ON, FEEDBACK OFF, INJ BUN, BUNCH, PHASE (deg).
- Parameter Values:** AMP SCL: 20; FILTER: 5; SPAN kHz: 20; PREQ kHz: 220.370; INJ BUN: 0; BUNCH: 0; PHASE (deg): 247.9.
- Navigation/Action Buttons:** SAVE, RSTR, UPDT, FILE, HORIZ +, RTSEQ, BODE, RESCL, DSPL, CTL SEL, EXIT, DUMP, TRIG, KILL, < RUN >.
- Plot Area:** A grid plot with three traces: 20 (blue), 10deg (red), and 100Hz (green). The traces show a signal that is initially noisy and then stabilizes around a horizontal line.



9) Cycles H/V/L
(only H/V functional)



8) If phase sweep works, this button will change to "set". Press once.

At this point, horizontal tune tracker is locked.



When finished, for both H and V:

- Cycle “drive” from “FBKEXT” → “DISCON”
- Cycle “FEEDBACK” from “OFF” → “ON”
- Close using either “EXIT” button in bottom-left or “x” on top-right

