

Design and Status of the MicroTCA.4 Based LLRF System fo TARLA.

- The Turkish Accelerator and Radiation Laboratory in Ankara (TARLA) is constructing a 40 MeV Free Electron Laser with CW RF operation.
- 4 Superconducting Cavities + 2 Normal conducting buncher cavities. Design similar to ELBE Accelerator in HZDR
- LLRF Control using MicroTCA.4 Standart
- Mechanical tuning with Piezo + Stepper Motor Control

Parameter	Unit	Base Value	Upgrade Value
Beam Energy	MeV	0 - 40	0 - 40
Max Bunch Charge (@13 MHz)	pC	77	115
Max Average Beam Current	mA	1	1.5
Horizontal Emittance	mm mrad	<15	<15
Vertical Emittance	mm mrad	<12	<12
Longitudinal Emittance	keV ps	<85	<85
Bunch Length	ps	0.4 - 6	0.3 - 6
Bunch Repetition	MHz	13	0.001-104
Macro pulse Duration	μ s	10 - CW	10 - CW
Macro pulse Repetition	Hz	1 - CW	1 - CW



Design and Status of the MicroTCA.4 Based LLRF System for TARLA.

Poster shows:

- Hardware Setup with rack and crate layout
- LLRF Regulation Requirements
- Integration tests and current status
- Facility Information

