FCT Editor

Bhavna N Merh
Frank Tecker

What is FCT ?

- Fast CLIC Telegram (Bit Pattern of 16 bits)
- The different timings at CTF3 are conditioned to bits in the FCT. If a corresponding bit is set, the timing will be produced.
- 10 ms bit patterns for Production & Measurement groups. Ex: bit 2 in PROD indicates Start Klystron timing.
- The basic period of the timing cycle is 1.2 s. The telegram has 120 entries.

Telegram Bits

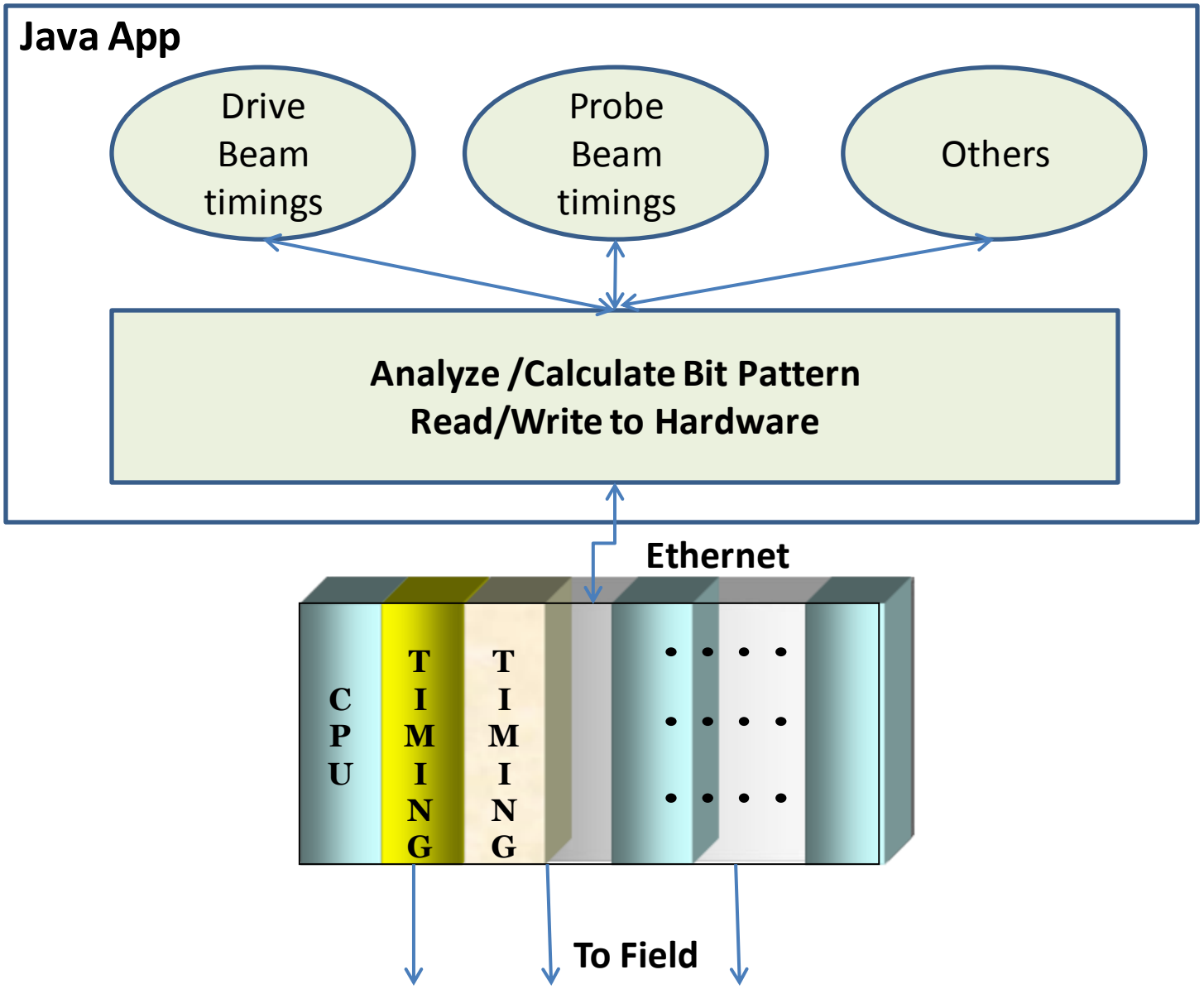
	PROD	BITPATTERN	16	0	65535	0	Production mask

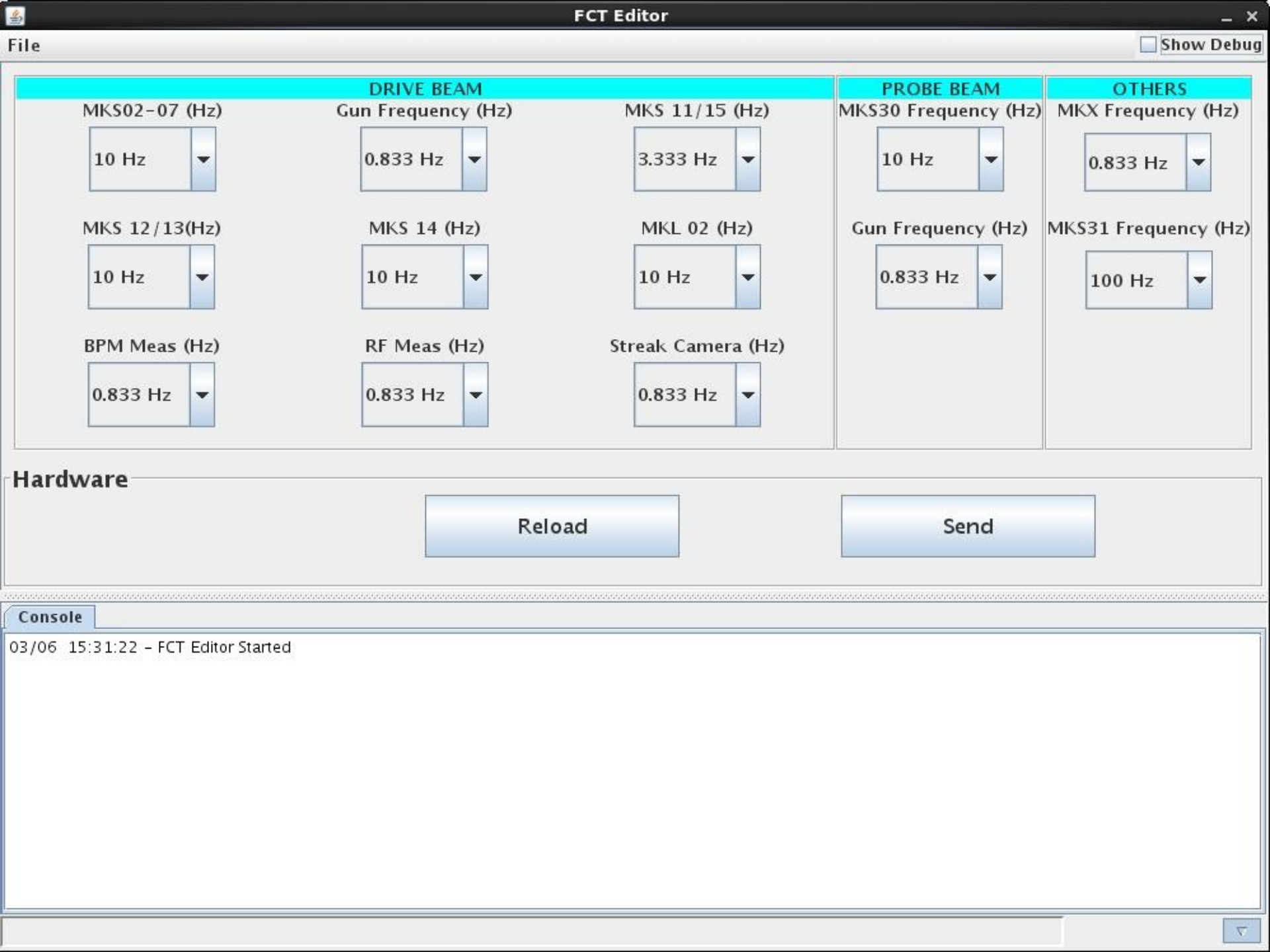
1	GUN	Gun production
2	STARTKLY	Start klystron
3	MKS02	Modulator 02
4	MKS05	Modulator 05
5	MKS06	Modulator 06
6	MKS11	Modulator 11
7	MKS12	Modulator 12
8	MKS13	Modulator 13
9	MKS14	Modulator 14
10	MKS15	Modulator 15
11	MKL02	Modulator 02
12	MKS03	Modulator 03
13	MKS07	Modulator 07
14	KICK_LIN	Start kickers for injection
15	KCK_EJ	Start kickers for ejection
16	STRK_CAM	Streak camera

FCT Editor is an application to

- Set the PROD group Bit Pattern
- Set the MEAS group Bit Pattern
- Read the PROD Bit Pattern
- Read the MEAS Bit Pattern

Design & Implementation




FCT Editor
File
Show Debug
DRIVE BEAM
MKS02-07 (Hz)
10 Hz
Gun Frequency (Hz)
0.833 Hz
MKS 11/15 (Hz)
3.333 Hz
MKS 12/13(Hz)
10 Hz
MKS 14 (Hz)
10 Hz
MKL 02 (Hz)
10 Hz
BPM Meas (Hz)
0.833 Hz
RF Meas (Hz)
0.833 Hz
Streak Camera (Hz)
0.833 Hz
PROBE BEAM
MKS30 Frequency (Hz)
10 Hz
Gun Frequency (Hz)
0.833 Hz
OTHERS
MKX Frequency (Hz)
0.833 Hz
MKS31 Frequency (Hz)
100 Hz
Hardware
Reload
Send
Console
03/06 15:31:22 - FCT Editor Started

Some consistency checks

- BPM frequency should be a fraction of GUN frequency – ***Warning***
- GUN frequency should be a fraction of DB RF frequency – ***Warning***
- PB_GUN frequency should be a fraction of MKS30 frequency – ***Warning***
- Streak Camera always < or = to GUN Frequency - ***Warning***
- Only Warnings, eventually the settings are sent to hardware.

Particularity

- The second RF measurement is always without the Beam.
- Two Cases:
  - ❖ Above 5Hz : RF measurements are regular
  - ❖ Below or equal to 5Hz : The second RF measurement is 200ms after the first.
- In both the cases beam is inhibited on the second RF measurement.

Thank You !!