



ATF2 November 2018 – Shift Plan

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Friday, 2nd Nov 2018

FONT shift request

Shift request:

- **First week:** 3 singles shifts - with nominal optics for all shifts
 - Wed (owl), Thurs (owl), Fri (owl)
- **Second week:** 1 single & 1 double shift - a nominal optics single shift and a high-beta optics double shift.
 - Wed (owl), {Fri (owl), Fri (day)}
- N.B There will be 2-bunch tuning before our first shift where the correlation will be checked, we might have to be there for this?
- N.B Pierre requested our help during the second week Thursday (owl) for intensity dependence studies.

Equipment to take to KEK

- Take to JPN:
 - Att. Controller 11713C: 'attenuator/switch driver'
 - Manual attenuator (11 dB) 8495 A (and N-type to SMA adaptors)
 - USB Ethernet server and 5 V power supply

Set Up

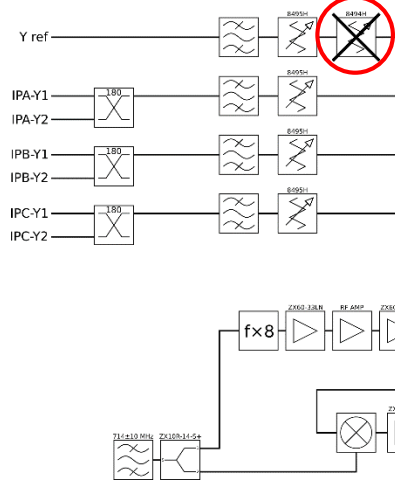
Setup: June 2018

First stage reference output amplified and split two ways with fixed attenuation added to maintain previous level of limiter input

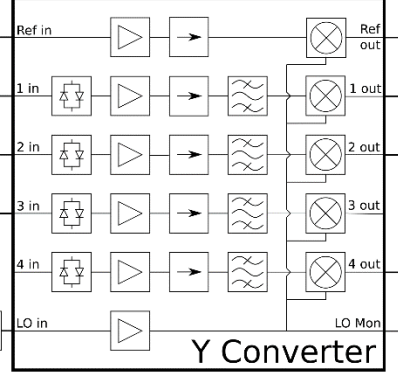
8494H Programmable Attenuator (11 dB, 1 dB steps) not available due to defective 11713C Attenuator/Switch Driver

Second-stage module previously used for horizontal axis used to compare input and output of reference processor

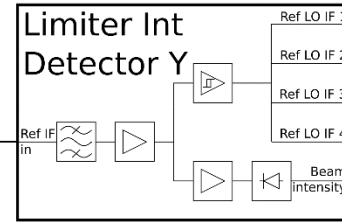
Cavity BPMs



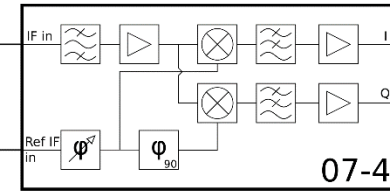
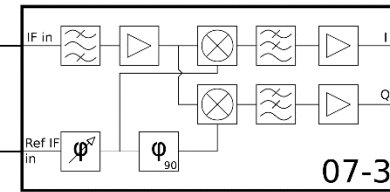
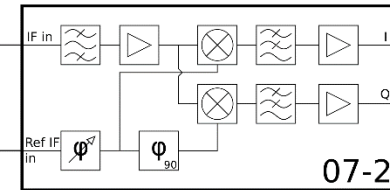
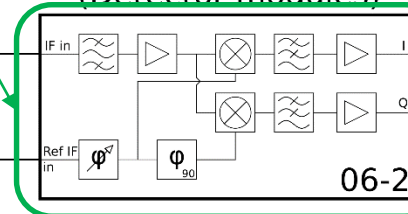
First-stage mixers



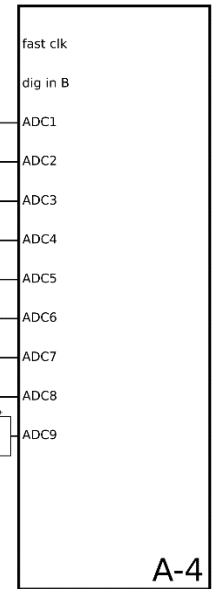
Reference processors



Second-stage mixers (Detector modules)

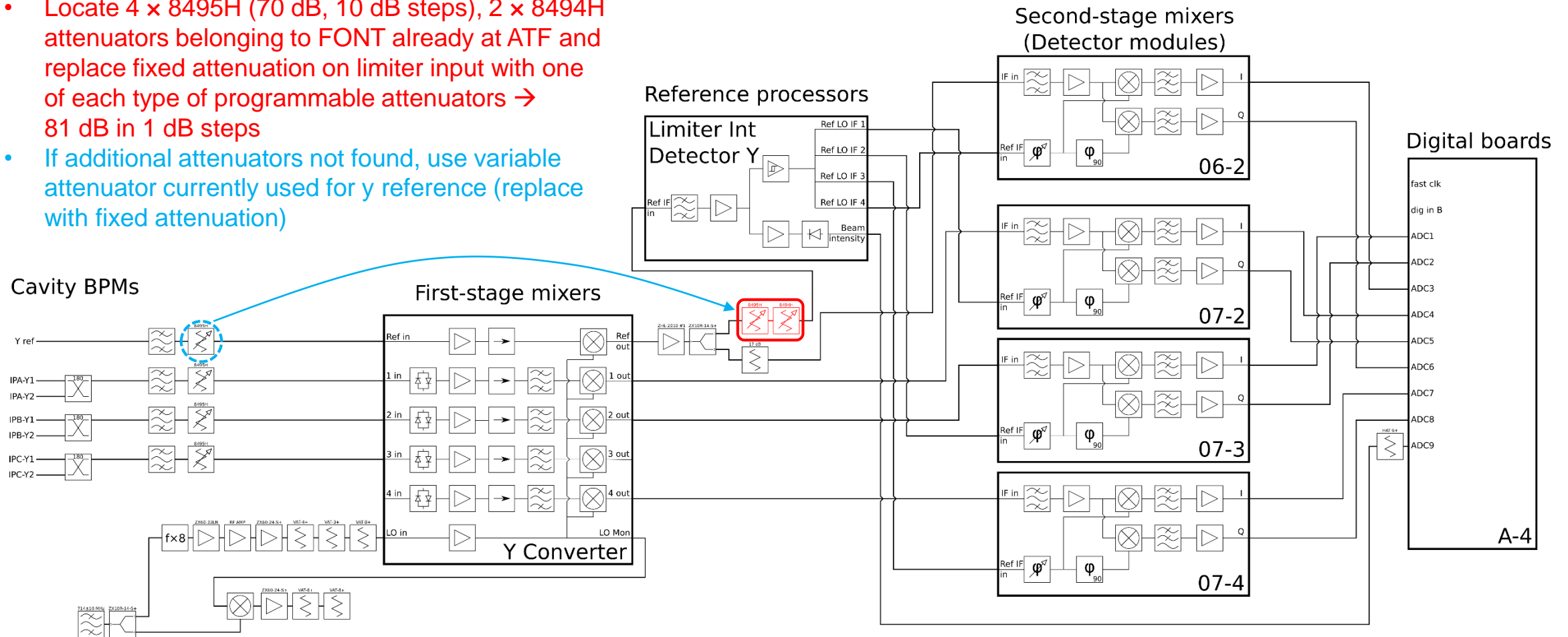


Digital boards



Setup: Proposed

- Take spare attenuator driver to ATF
- Locate 4 x 8495H (70 dB, 10 dB steps), 2 x 8494H attenuators belonging to FONT already at ATF and replace fixed attenuation on limiter input with one of each type of programmable attenuators → 81 dB in 1 dB steps
- If additional attenuators not found, use variable attenuator currently used for y reference (replace with fixed attenuation)



Shift Plan

FONT ATF Plans – week one

- **Three single shifts – nominal optics**

RESOLUTION WHILE RUNNING UPSTREAM FEEDBACK SHIFT

- Configure and operate upstream FB.
- Coarse alignment of IP BPMs with bunch-2 and check resolution.
- Waist scan, (as function of beam jitter) and also in terms of bunch-to-bunch position correlation
- Fine alignment of IP BPMs focussing on optimising tilt to improve resolution estimate, with calibrations at different tilt settings.

CALIBRATION STUDIES – ideally with resolution measurements

- Wide and fine calibration to test variation of calibration constant with position offset.
- Calibration for different BPM tilts, as suggestion from Fitting method calibration constant depends on Q' offset

FONT ATF Plans – week two

- **High beta optics double shift (Fri - owl and day)**

LIMITER PHASE AS FUNCTION OF SIGNAL INPUT

- Limiter phase as a function of input signal level (if done in high beta optics could get resolution measurements)
- Determine correlation of limiter phase delay between sample numbers

RESOLUTION AS A FUNCTION OF BPM TILT – If not possible previously in nominal optics

- Resolution vs. tilt scan - so as to minimise tilt not just Q'/q and improve resolution