

ATF May plan

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Items to take to Japan

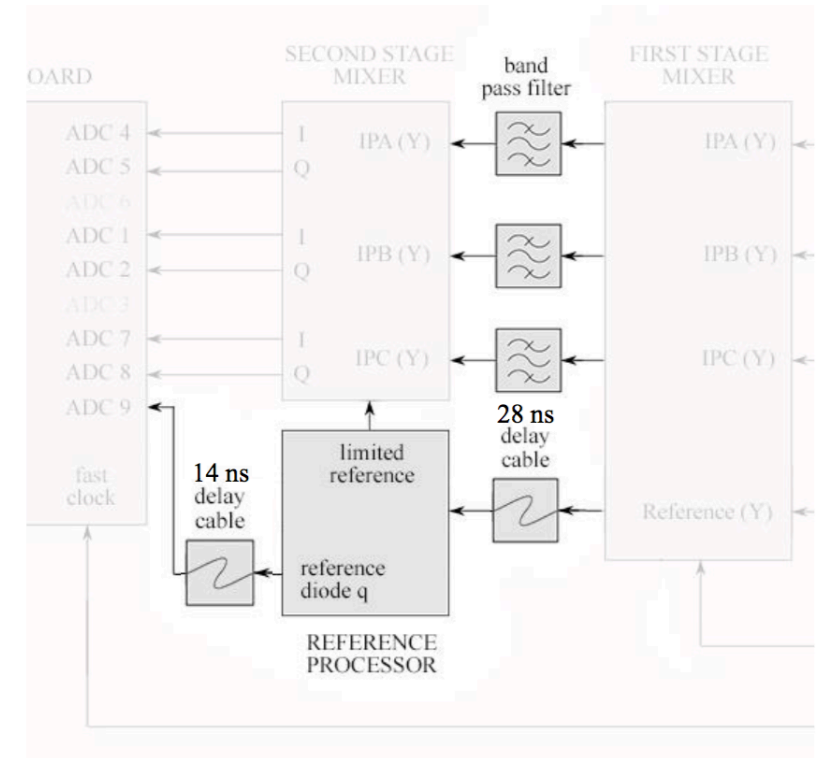
- FONT5A #4 - AUX Out C patched to the front panel.
- FONT5A # 3 - Filters installed.
- Kicker Amplifier + Power Supply
- Standard UK uninterruptible power supply & transformer (if they arrive in time)

New equipment already at KEK

- IP reference delay cables (provided by Terunuma-san)

Pre-beam installations

- Install new IP cables on the reference processor:
 - 28 ns delay cable (10 samples) – before the limiter.
 - 14 ns delay cable (5 samples) – after the limiter.
- Install FONT5A #4 at the IP:
 - Instrument IPA, IPB and IPC **Y information + Y Reference**.
 - Receiving synchronisation signal from FONT5A #5 upstream.
 - Sending synchronisation signal from Aux Out C to the FONT5A #3.
- Install FONT5A #3 at the IP:
 - Instrument IPA, IPB and IPC **X information + X Reference**.
 - Receiving synchronisation signal from FONT5A #4.
- Check the power levels of the IP LO and functionality of the IP power box and SDS.
- Install 6dB attenuation on the intensity monitor into the FONT boards.
- Install FONT variable attenuators before the first stage mixer in addition to existing 10dB-increment variable attenuators.



Pre-beam installations

If time (no feedback planned for 1st week of operation):

- Return the kicker amplifier TMD #1 from the IP back to upstream (they were switched in February).
- Reinstall the kicker amplifier TMD #3 at the IP and check functionality.
- Check the power levels of upstream stripline BPMs, and operation of upstream board FONT5A #5.

Shift plan

FONT SHIFTS

BEAM SIZE-TUNING SHIFT + FONT TEAM

Week 1	<ul style="list-style-type: none">• Check electronics timing (30 mins).• Internal alignment of the IP BPMs relative to each other. Centre the beam in all 3 BPMs using the IP mover system.• <i>High-beta optics.</i>• Collaboration with Sandry /Araki-san.• May require re-alignment of the BPMs inside the IP chamber.	<ul style="list-style-type: none">• Global alignment to find a common orbit for IP BSM and IP BPM operation.• <i>Nominal optics.</i>• Given larger jitters and possible position offset, work with ~40 dB attenuation (~450 nm res).• Collaborate with beam-size tuning team.• May require repositioning of the IP chamber.	1-2 shifts	1.5 shifts
Week 2	<ul style="list-style-type: none">• <i>Nominal optics.</i>• Single-loop 1 BPM IP feedback.• New firmware trials.• Minimum jitter studies.	<ul style="list-style-type: none">• <i>High-beta optics.</i>• Resolution studies.• Two BPM IP feedback.	1 shift	1.5 shift

Internal alignment check

- High-beta optics.
- Move the beam using AQD0FF to minimise the signal in all BPMs with BPM movers at mid-range.
- Scan IPA mover settings to find where I and Q = 0 at IPA.
- Repeat for IPB.
- If no mover position sets I and Q to zero for IPA and IPB, then re-steer the beam.

If no beam steering can achieve this, access will be required to adjust the pitch of the AB block.

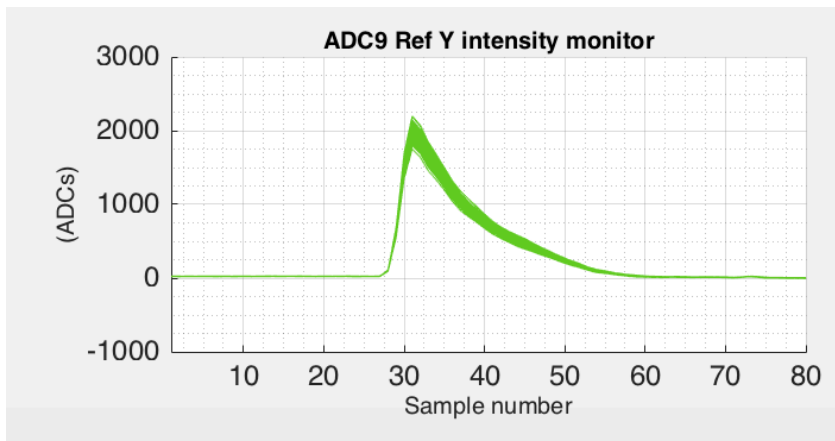
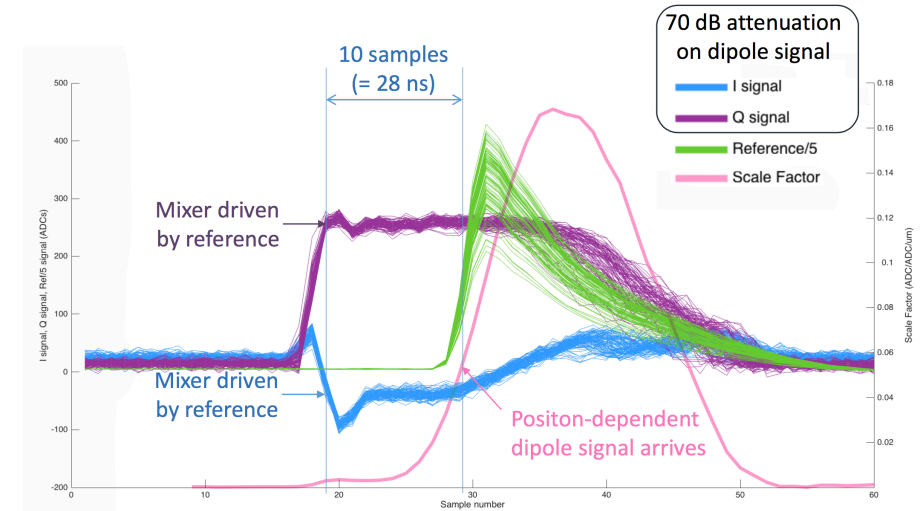
- Change the pitch of the IPAB block until I and Q = 0 for both IPA and IPB at the same mover setting.
- Scan IPC mover setting to find where I and Q = 0 at IPA.
- If no IPC mover setting sets I and Q = 0 at IPC, then move the beam using AQF7FF and repeat the whole process.

If AQF7FF setting becomes too extreme, take an access to adjust IPC relative to the AB block.

Once BPMs are aligned, if settings are still at the extremes of the mover ranges, determine the necessary adjustments and access to realign the BPMs.

Other operational notes

- Before doing anything else, check the **signal timing** set-up using a 70dB-dipole-attenuation data run and a 0/10dB calibration run.
- **Take 70dB-dipole-attenuation data sets** at the beginning of every shift for mixer baseline subtraction in analysis.



- Make sure **power levels into the mixer** are high enough:
 - Reference should ALWAYS be as close as possible to **2000 ADCs** (with 6dB on intensity monitor).
 - Use smaller-increment variable attenuators to maintain this.

Summary

Take to Japan

- 2 FONT5A boards, kicker amplifier + power supply, and UPS and transformer.

Pre-beam on Monday

- At IP: install cables on reference, 6dB attenuation on the intensity monitor, FONT variable attenuators & FONT boards.
- If time: reinstall kicker amplifiers upstream and at IP, test functionality. Otherwise do this early week 2.

Week 1

- Check signal timing as soon as possible and adjust delay cables if necessary.
- FONT shift with Sandry/Araki for internal alignment study.
- Joint beam tuning shift for global alignment study.

Other operational stuff

- Remember to take 70dB-dipole-attenuation each shift for mixer baseline subtraction.
- Maintain reference as close as possible to **2000 ADCs** (with 6dB on intensity monitor) using FONT variable attenuators.