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# Adapting the Current Front-end

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DDC Recycler Ring BPM Architecture Software's Perspective
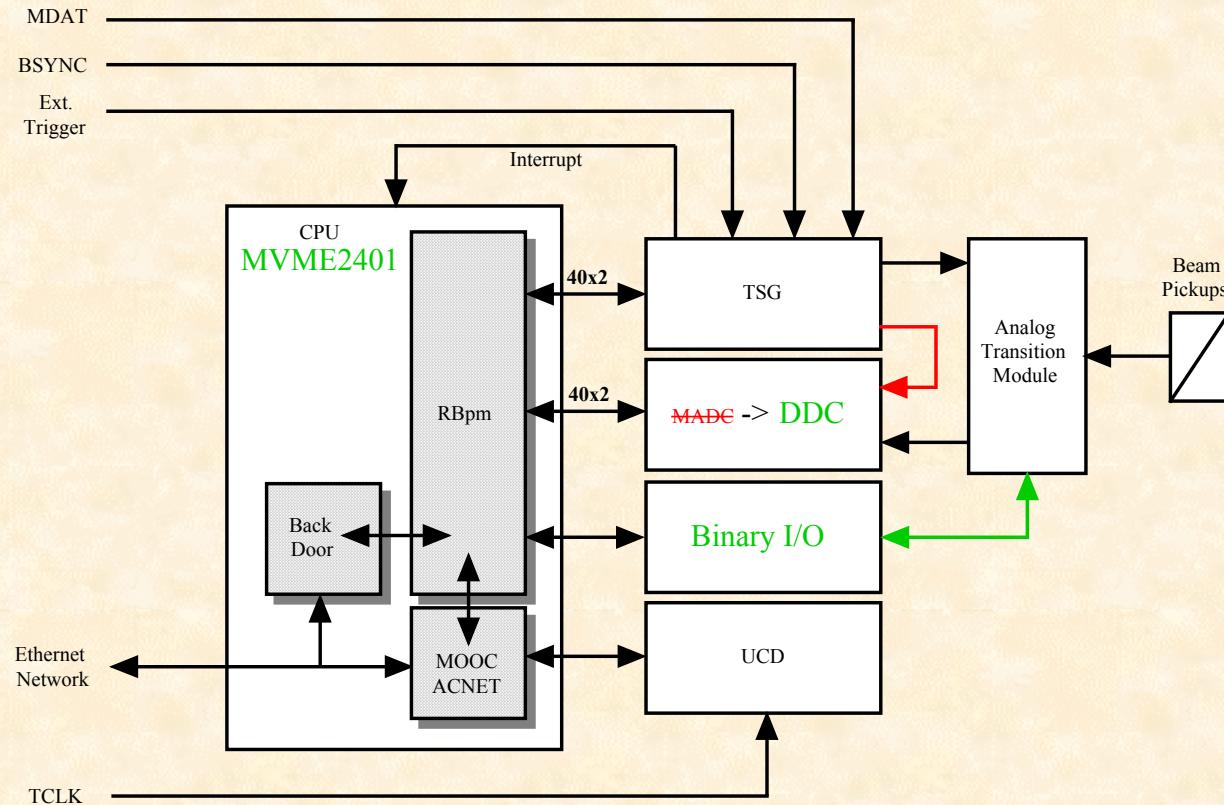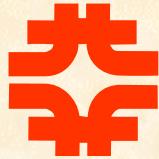
DDC Recycler Ring BPM VME Crate
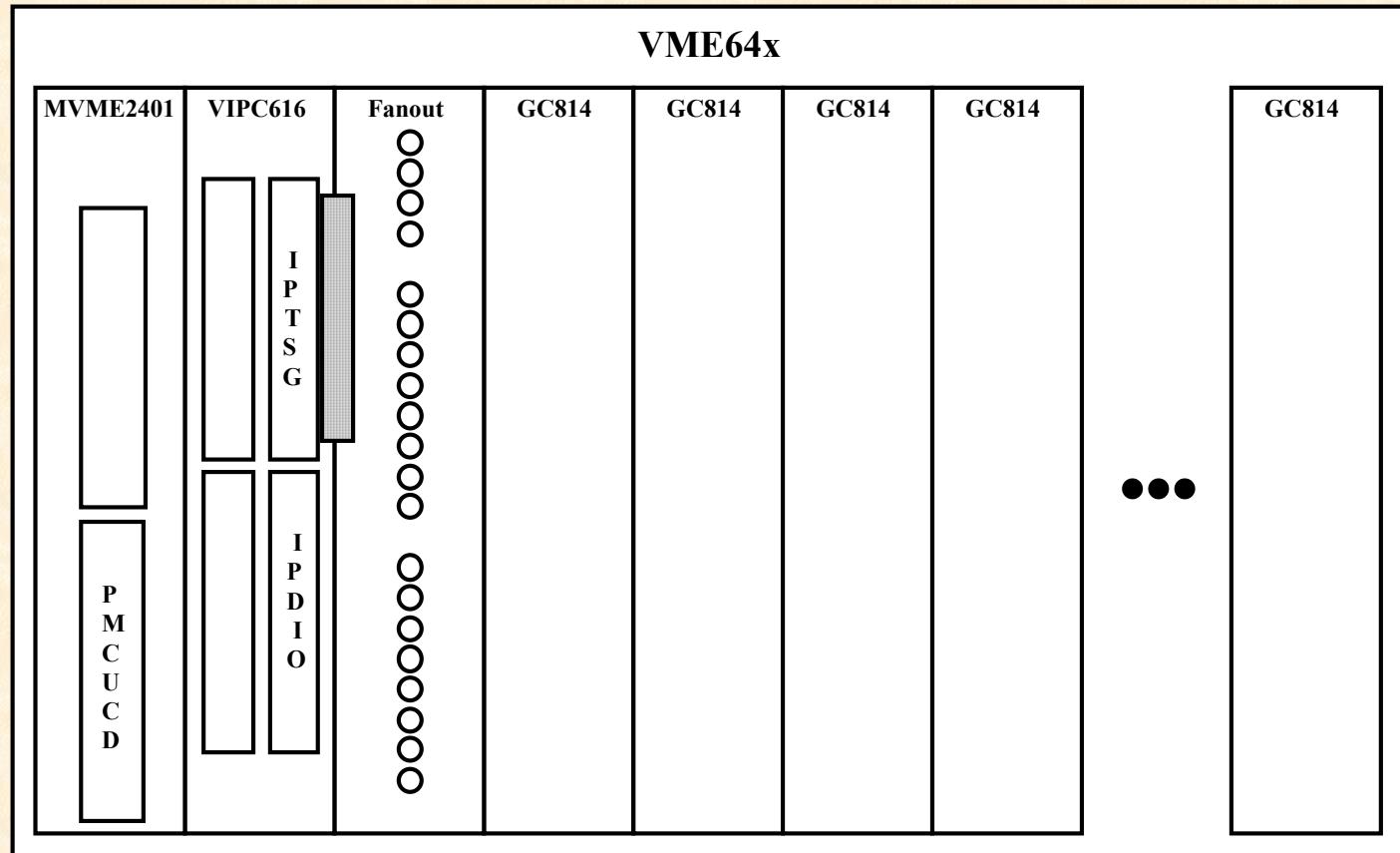
DDC Recycler Ring BPM Modes

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- **1 - BackgroundFlash(azimuthalDelay)**

- **2 - Flash(azimuthalDelay, startEvent, turnNumber)**
  - provide 100 element history buffer

- **3 - ClosedOrbit(azimuthalDelay, numSamples)**
  - provide 100 element history buffer

- **4 - TurnByTurn(azimuthalDelay, startEvent, beginTurn, numTurns, horizChannel, vertChannel)**
  - provide 100 element history buffer

- **5 - TurnByTurnScan(azimuthalDelay, pingEvent, pingSpacing, beginTurn, numTurns)**
  - acquire 1 channel pair on each ping -- sequentially scan 40 pairs
  - start each acquisition on RRBS trigger event pingEvent
  - acquire on RRBS 0xC0 revolution markers (plus azimuthalDelay)
  - store numTurns consecutive turns starting at turn beginTurn for each channel pair
  - no history buffer

- **5 - Diagnostic(azimuthalDelay, startEvent, beginTurn, numTurns, channel)**
  - acquire 1 channel -- **channel**
  - start on RRBS trigger event **startEvent**
  - acquire on RRBS 0xC0 revolution markers (plus **azimuthalDelay**)
  - store **numTurns** consecutive turns starting at turn **beginTurn**
  - store all internal BPM data (e.g., Ai, Aq, Bi, Bq...)

DDC Recycler Ring BPM Software Modifications

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- **Modify existing RBpm front-end software - D. Voy**
  - later add intensity data
  - later add multiple channel turn-by-turn
- **Write new Diagnostic Measurement Mode 5 - D. Voy**
- **Write MADC class implementation for DDC hardware - T. Meyer**
- **Modify DAQ user lib for new houses - B. Hendricks**
  - later add intensity data
  - later add multiple channel turn-by-turn
- **Modify Flash Display/Control application for new houses - L. Winterowd**
  - later add intensity display
- **Modify Turn-by-turn Analysis application for new houses - M. Yang**
  - later add multiple channel turn-by-turn
- **Use existing MOOC 2.6**
  - later upgrade to 3.x
- **Use existing VxWorks 5.4 for PPC**
- **Use existing GNU development tools for PPC**