A PROPOSAL FOR A TIMING AND CONTROL MODULE (TCM)

FOR USE WITH THE PROTOTYPE TRIGGER PROCESSOR

TWO FUNCTIONS

DISTRIBUTE TIMING, TRIGGER AND CONTROL (TTC) SIGNALS
PROVIDE CONTROL AND MONITORING LINK TO THE DETECTOR CONTROL SYSTEM (DCS)

MUST BE IN A FORM COMPATIBLE WITH
CLUSTER PROCESSOR and
JET ENERGY PROCESSOR CRATES and
ALLOW USE WITH PRE PROCESSOR CRATE

TIMING FEATURES.

DISTRIBUTE TIMING & CONTROL SIGNALS

FOR COMPATIBILITY WITH THE TRIGGER AND JET CRATES ….
INCLUDE CIRCUITRY AND CONNECTIONS FOR OUTPUTS TO BACKPLANE.

FOR PRE PROCESSOR CRATE USE THROUGH CABLE CONNECTIONS ….
INCLUDE CIRCUITRY AND CONNECTIONS FOR OUTPUTS TO THE FRONT PANEL.

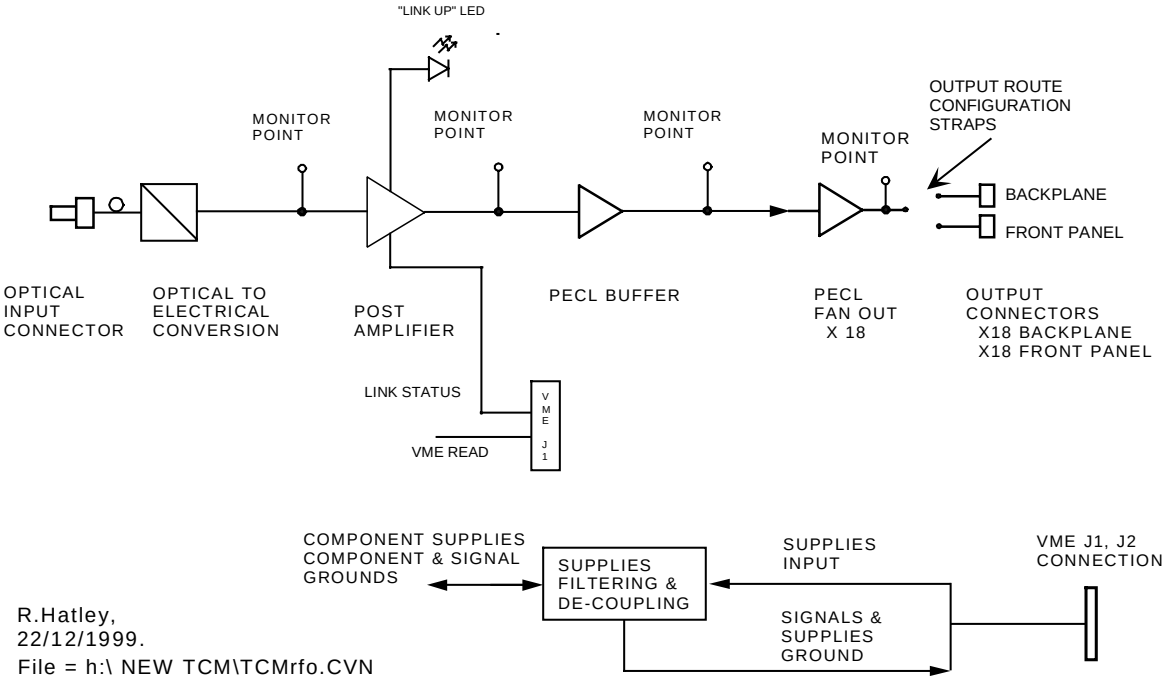
RECEIVE OPTO INPUTS.
CONVERT TO ELECTRICAL (PECL).
BUFFER ONTO 18 OUTPUTS.

MONITORING FEATURES.

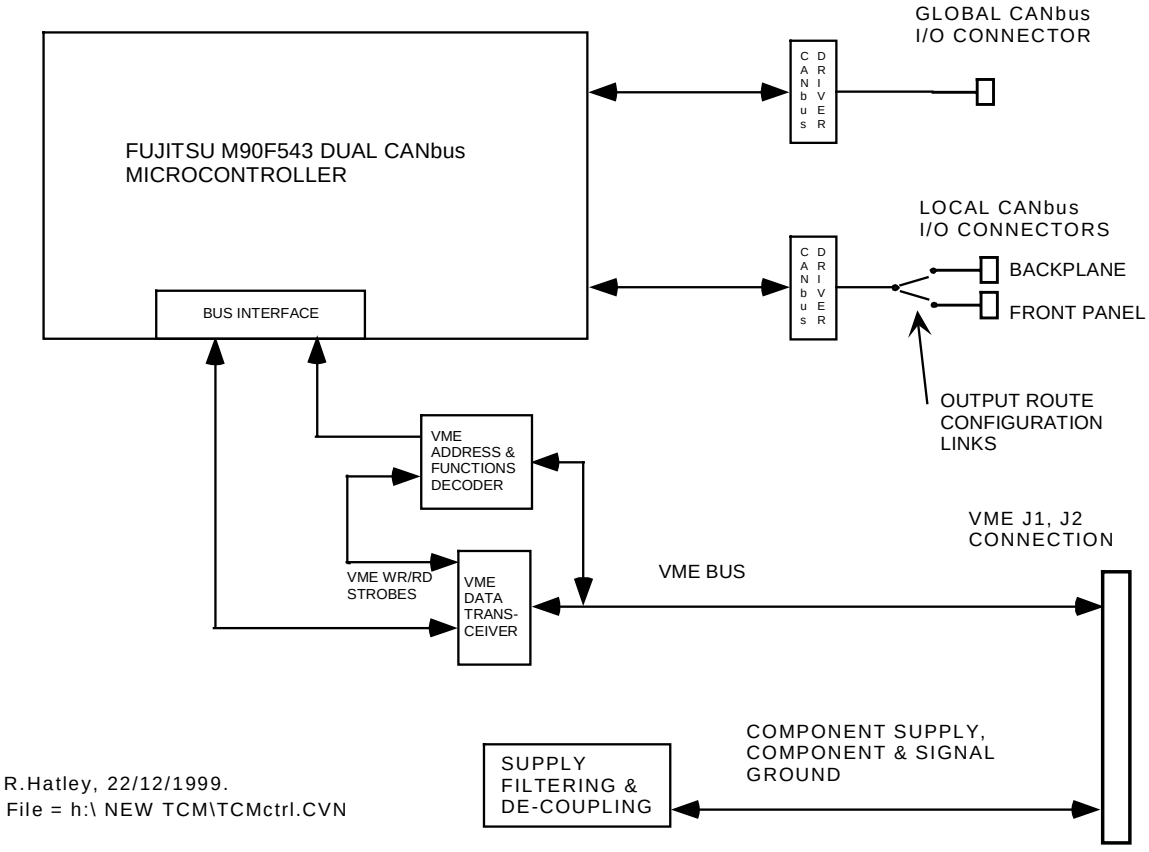
HOST CANbus NODE(S) FOR THE MONITORING AND CONTROL OF CRATE COMPONENTS (PSUS, etc. AND MODULES) VIA A 'CRATE' BUS
And
PROVIDE A CANbus LINK TO EITHER AN INTERMEDIATE OR GLOBAL CONTROL BUS.
INCLUDE BACKPLANE AND FRONT PANEL OUTPUTS - AS FOR TIMING FUNCTIONS.
MICROCONTROLLER PROGRAM LOADING, CONTROL & STATUS ACQUISITION VIA VME

TO BE AGREED

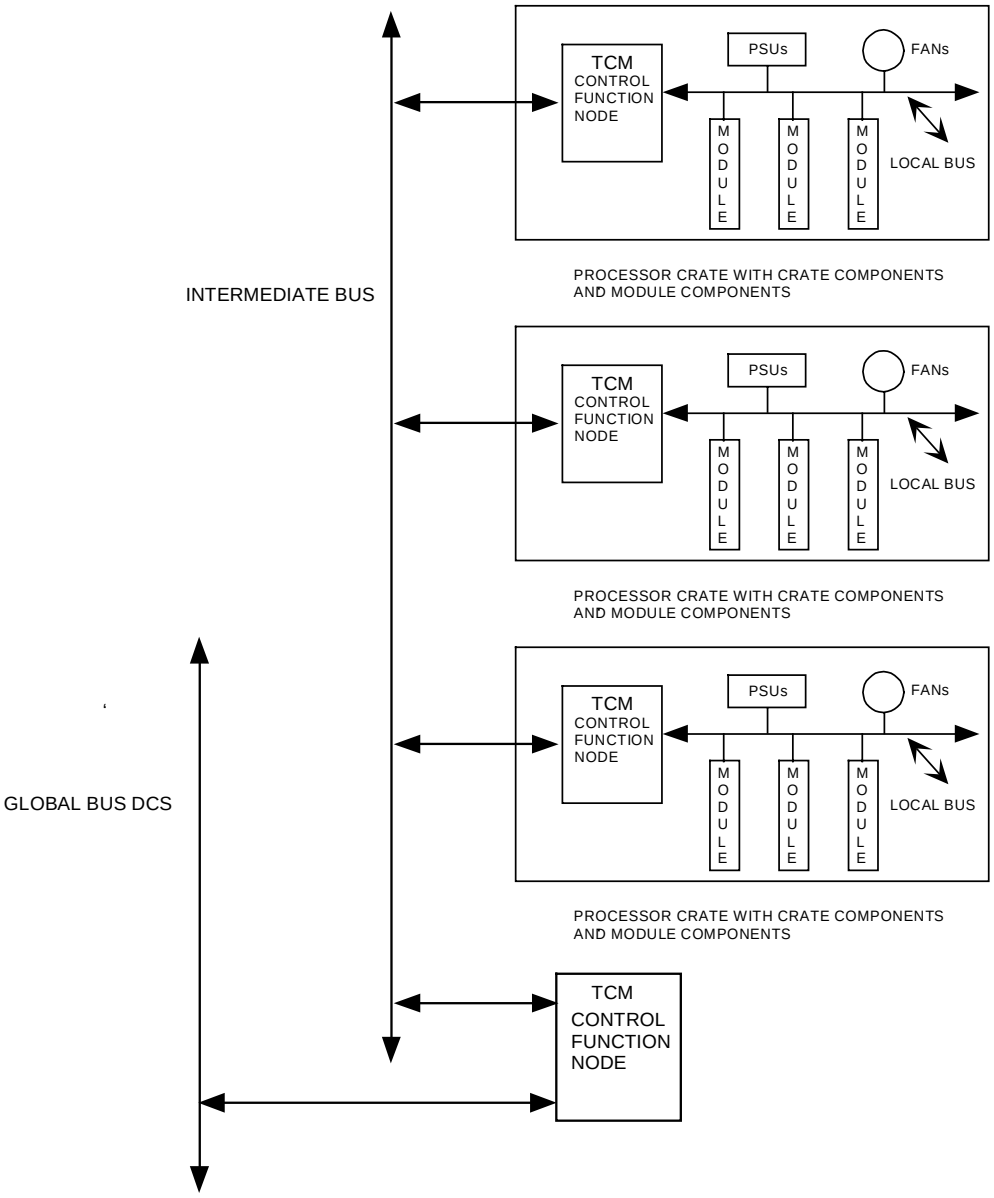
PHYSICAL FORMAT / PROFILE
ALLOCATION OF TTC, CANbus & VME PINS WITHIN BACKPLANE CONNECTOR LAYOUT.
FAN OUT TYPE FOR TTC SIGNALS i.e. DIFFERENTIAL / S.E.
VME VERSION & SIGNAL SUB-SET.



TCM 'RECEIVER & FAN OUT' (TTCrfo) SECTION BLOCK DIAGRAM



TCM DCS CONTROL SECTION BLOCK DIAGRAM



LEVEL 1 TRIGGER CRATES PLUS THE 'LOCAL', 'INTERMEDIATE' AND 'GLOBAL' BUSES

PROPOSAL FOR A TTCrx DECODER CARD (TTCdec)

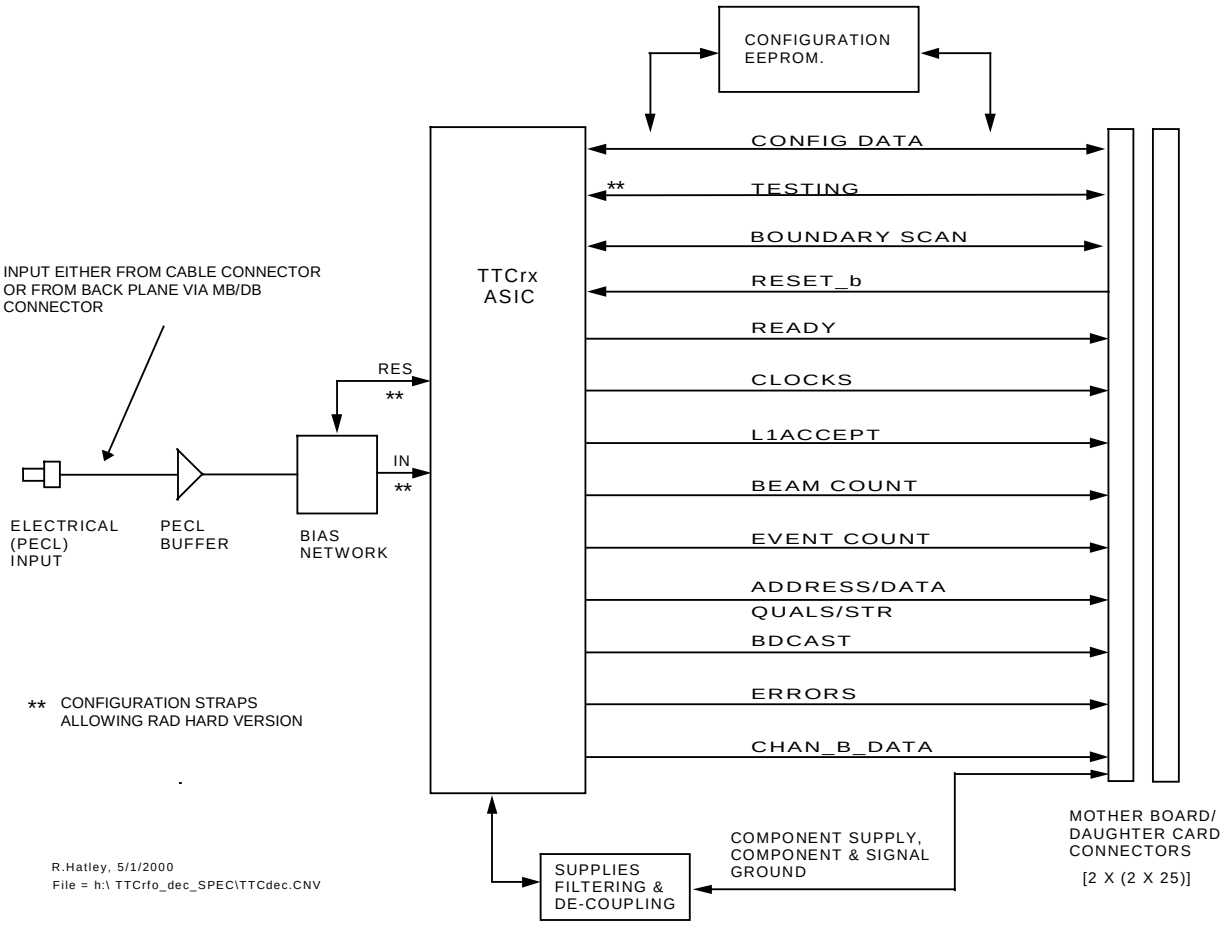
FOR USE ON ALL PROTOTYPE TRIGGER PROCESSOR MODULES

RECEIVE ELECTRICAL SIGNALS FROM TCM & DECODE STREAMS USING TTCrx ASIC
PRESENT ALL DECODED OUTPUTS TO THE HOST MODULE
FORMAT CONVENIENT FOR ALL PROCESSOR MODULES
ALLOW SWAPPING OF THE FEW AVAILABLE ASIC BETWEEN MODULES
ALLOW UPGRADE TO RAD HARD ASIC WHEN AVAILABLE
SIMPLIFY RE-WORK, ASIC IN BGA FORMAT

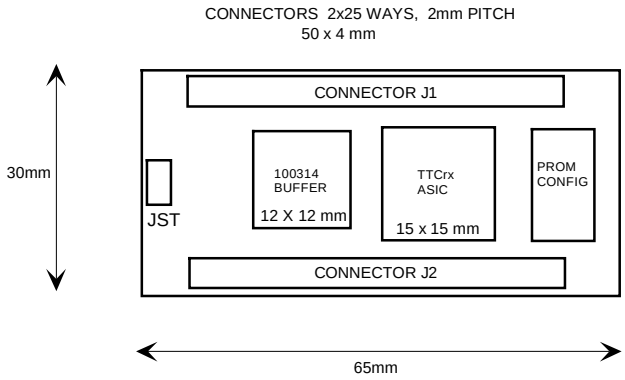
A COMMON TTCrx DECODER CARD (TTCdec)

SERIAL (TTC) INPUTS EITHER FROM
THE CRATE BACKPLANE VIA CARD PINS
OR
FROM CABLE INPUT VIA CONNECTOR.

TTCrx OUTPUTS DIRECT TO HOST - NO BUFFERS
ACCEPT BOTH VERSIONS OF ASIC
3V OR 5V OPERATION



TTCded CARDS BLOCK DIAGRAM



PROPOSED SIZE FOT TTCdec CARD.