Special Test Request Form	STR Number _3 R03

Part 1 – Test Definition Section

Test Requestor: Elliott Bloom

Test Purpose and Justification:
Run ½ hour of the hour scheduled for the Am 241 test with a software filter to reduce the data rate recorded. This is a simulation of test as we will fly. The 4 kHz data rate with no software filter will cause the online system to introduce deadtime that is not associated with the instrument under test, or the SBC Vx works "flight" software. This deadtime will likely dominate the frequency domain structure of the timing analysis to be done offline. Introducing a software filter, already implemented in LATTE 4.7.3, into the data flow at the Vx crate should reduce the random tracker triggers caused by the source by at least an order of magnitude and likely even more.

Test Description:

1. Take a test run without software filter of 2 minutes, or one 100 Mb file, which ever is shorter; put the data on a memory stick for rapid SVAC review.
2. Take a test run of 2 minutes with the software filter; put the data on a memory stick for rapid SVAC review.
3. Take 3/4 hour of Am241 tracker triggers with the software filter
4. Take 1/4 hour of Am241 tracker triggers no filter.
5. While data taking is proceeding, SVAC will attempt to get rapid response to check for quality of data.

EGSE Configuration:

Enable existing software filter code and require > =16 tracker hits to pass an event to LATTE.

LAT Configuration:
Unchanged from original Am241 tracker trigger test.

Expected Results/Acceptance Criteria:

Data collection completes with no errors. See dramatic drop in events to disk for filtered as compared to unfiltered Am241 run. Offline analysis of FFT for time series of cosmic ray triggers culled from filtered run should show Poisson expectation with LAT hardware and software trigger dead time. Use standard baseline cosmic ray run with online filter applied to Merit tuple offline analysis to normalize expectations. Do the same offline for 1/4 hour of Am 241 data to compare.

Expected Duration:

No increase in scheduled total time for test.

Expected Offline Analysis Duration:

2 Weeks after test completion

Test Procedure:

1. Another run will be needed to be added to Gary's run matrix specifying the filter. This will key configuration for the new test to include software filter inline with data taking.
2. There should be only very minor impact to operations.

Test Script:

Same as for no filter Am 241 test.

Part 2 – Impact Assessment Section

Procedure development:
The procedure is the same as existing trigger tests, only some configuration parameters need to be altered for each test.

Script development and checkout:

Scripts are already in place. Validation for the intended parameter settings will be done be Martin Kocian.

Impact to schedule:

The total testing time is 2.5 shifts. If scheduled well, it should only delay the tower moving to the grid by not much more than 24 hours.

Risk Assessment:

Procedure does not have additional risks beyond the standard trigger tests.

Required Resources:

GASU based teststand and muon telescope at building 33. Muon telescope is only needed for tests 1) & 2). Needs Martin Kocian to be present for parameter changes. Needs presence of an operator for equipment power on/off at start and end of each test period.

Other Affected Parties:

Part 3: Signature Approval:

Required Authorizations	Printed Name	Signature	Date
Quality	Darren Marsh	(Signature on file)	3/30/05
I&T	Elliott Bloom	(Signature on file)	3/30/05
Program Office	Lowell Klaisner	(Signature on file)	3/30/05
Systems Engineering	Pat Hascall	(Signature on file)	3/30/05
Affected S/S managers	N/A		
Instrument Scientist	Steve Ritz or Eduardo do Couto e Silva	(Steve Ritz signature on file)	3/30/05
Martin Nordby	N/A		
Other	N/A		
Other	N/A		
Other	N/A		