A Quick Look at a simple Shunt Cable Comp for the CMD OUT Line implemented on the (TRT) Barrel PP for the Final Input and Output Cables

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Tests on TTC PP at Penn
CMD OUT RCVR/Drive chain

- Tests Summarized here are using 15m mini twin-ax as PP input connected to an AR2BS and "Newly chosen 100m cable to the TTC02.
- Threshold R/W comparison sequence works with 100% success rate for all values of threshold.
- No extra triggers are observed on CMD Out comparator output either "in time" with control signals or "out of time" when a 50 ohm series and 10pF shunt filter are used at the comparator input.
- DAC Read/Write Sequences are used for Scope Studies.
Patch Panel CMD OUT
Readout Chain as (finally) Tested

This leg was not used, but is here to suggest a possible stuffing option.

Comparator input Filter

From 2FS 15m cable

To TTC02 100M Cable
CMD Out "In time" noise

Before adding 50ohm/10pF Filter
Noise on CMD Out eliminated

After adding 50ohm/10pF Filter

CMD Out Comparator Output.
CMD OUT at Input to PP
3 component Cable Comp

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LeCroy

.1 μs
100 mV
-0.9 mV

.1 μs

1 trig only
.1 V AC
50 mV AC
4 trig only

Δt 25.5 ns 1/Δt 33.2 MHz
1 GS/s

STOPPED
CMD OUT at Input to TTC02
Before Implementing Precomp on PP
CMD OUT at Input to TTC02

AFTER Implementing 3 component Precomp

Preliminary Optimization (fourth attempt at component choice)