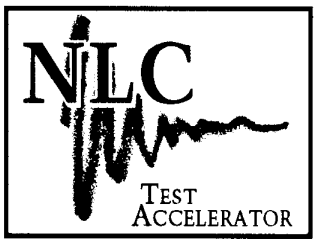

NLCTA-Note #44

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Subject: RF Phase Shifter Specifications

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1.0 Introduction

1.1 Purpose

This document describes the specification for the special-purpose RF phase-shifter. The phase shifter proposed for this application incorporates a matched pair of trombone delay lines that are folded to fit into a small open frame box with dimensions of 5"x5"x12". The device uses 0.25" semirigid coaxial lines to minimize losses. The RF phase-shifter will be used to adjust the RF station phase of the Low-Level RF (LLRF) subsystem. The phase shifter will be controlled using a SLAC designed stepper motor controller. Using this approach the phase shifter shall have 0.25° of phase resolution using full step. This resolution meets the present RF specifications. The vendor will supply the trombone delay line phase shifter with stepper motor shaft coupler.

2.0 RF Attenuator General specifications

Specification	Value
Phase-shifter type	Linearized, stepper motor controlled matched pair of trombone delay lines (312.5 ps).
Linear range	0 -1285°
Operating Frequency	11.424 ± 0.5 GHz
Operating Temperature range	10-40°C
Insertion Loss	1dB max. per pair of matched lines
Characteristic Impedance	50Ω
Size	5"x5"x12" open frame box.
Operating Power	100mW average and 60 W peak (max.)
VSWR	1.7 (max.) per pair of matched lines
Connectors	SMA