Proposal for receiver "bandwidth" specifications

Specifications are required on the dynamic response of SPI-4 receivers to protect against very "fast" receivers being implemented to meet the very tight timing budgets. SPI-4 receivers need to have a minimum level of protection against detecting small noise spikes.

Traditional frequency domain bandwidth specifications are not suitable for use with SCSI receivers because the receivers intrinsically do not operate in a linear region

A time and amplitude scheme is required to verify that the receiver is not too "fast". Another way to state the requirement is that the receiver shall not detect pulses of certain amplitude and duration.

The remainder of this document is aimed at specifying the details of the pulses
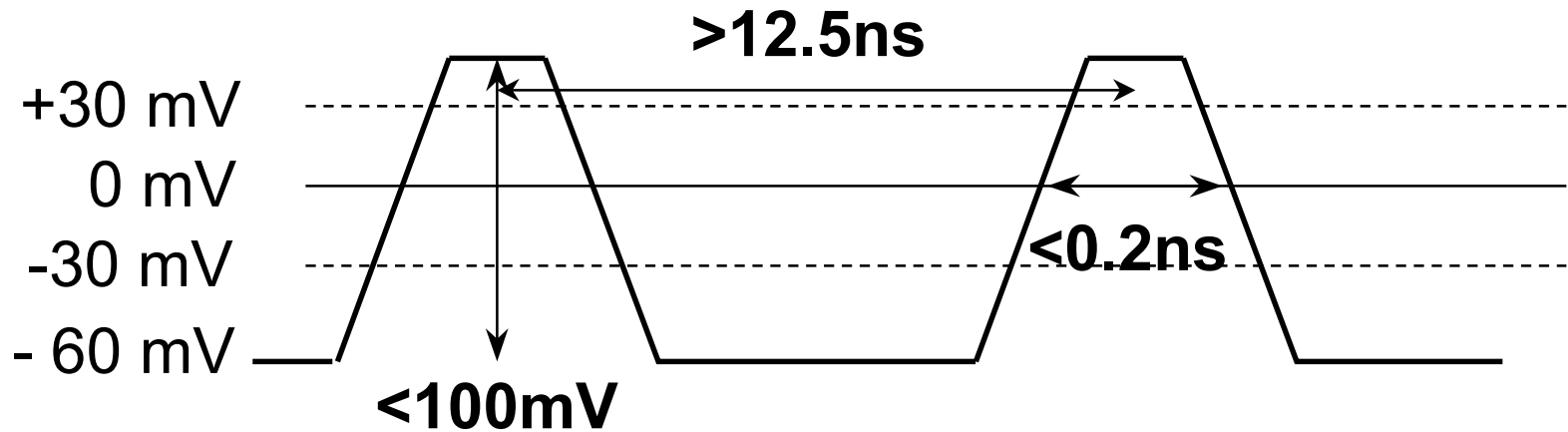
REQUIREMENTS:
Receiving devices capable of operation at Fast-160
shall not respond to the positive going or the negative going
pulse train shown on the next slide when presented with the
pulse train at the device connector for any signal.

The pulse trains shall have the following properties:
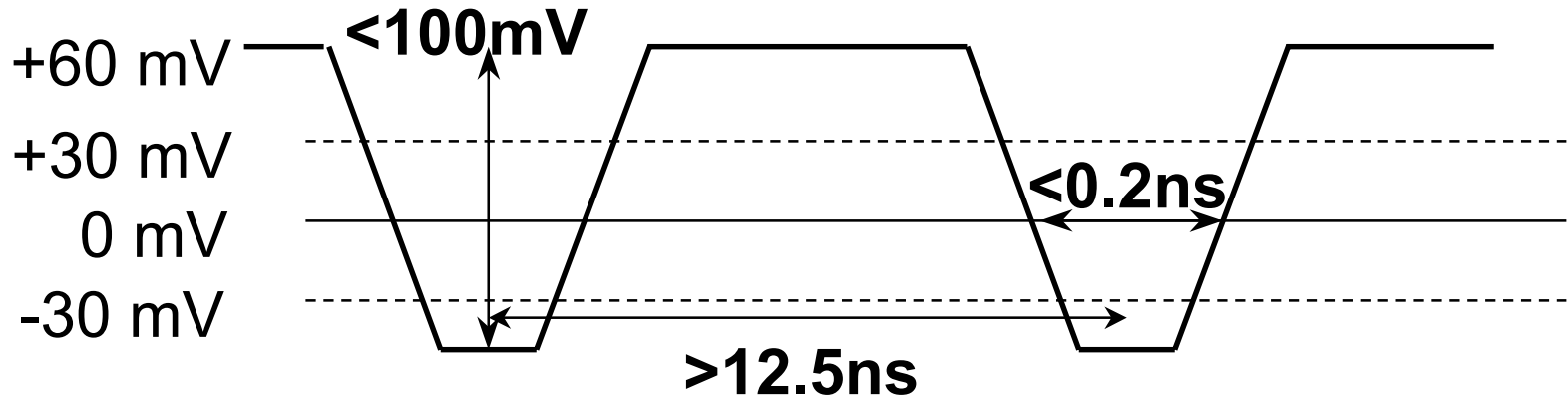
Pulse amplitude: any 0 to 100 mV
Pulse width (@0):   any 0 to 0.2 ns
Repetition time: any >12.5 ns
Starting level: 60 mV above or below 0
Slew rate :   400 to 1000 mV/ns

a.c. common mode = 0
d.c. common mode = 1.25 v

>12.5ns

+30 mV
0 mV
-30 mV
- 60 mV

<0.2ns

<100mV

Positive going differential pulse train based at -60 mV

<100mV

+60 mV
+30 mV
0 mV
-30 mV

<0.2ns

>12.5ns

Negative going differential pulse train based at +60 mV