Proposed update Electrical Parameters of DME

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Review of DME

- Differential Manchester Encoding (DME) is used during Auto-negotiation (AN) and Training
- AN uses DME in a very low frequency manner in accordance with the electrical parameters of Table 73-1
  - A transition present in an even-numbered transition position represents a logical one
  - A transition absent in an even-numbered transition position represents a logical zero
  - Initial settings/capabilities are transferred via the DME page (48-bit)
- Selector field, echoed nonce field, transmitted nonce field, technology ability field, FEC capability, pause ability, remote fault, acknowledge, next page

Table 73–1—DME electrical characteristics

Parameter	Value	Units
Transmit differential peak-to-peak output voltage	600 to 1200	mV
Receive differential peak-to-peak input voltage	200 to 1200	mV

Review of DME used in Training

- Training uses DME differently 94.3.10.5
  - The upper value is represented by a series of PAM4 +1 symbols
  - The lower value is represented by a series of PAM4 -1 symbols
  - A mid-cell data transition is used to signal a logical one
  - The absence of a mid-cell data transition is used to signal a logical zero
- The data structure for Training is different from that of AN as well
  - PRBS13 pattern generator

Proposed change to Table 73-1

To address DME during AN

- Propose change to 73-1 to decrease max value from 1200 to 1000mV for 200G/lane links

Table 73-1 DME electrical characteristics

Parameter	Value	Units
Transmit differential peak-to-peak output voltage	600 to 1000	mV
Receive differential peak-to-peak output voltage	200 to 1000	mV

Thank You