

# ISO 21806-9:2020 (E)

## Road vehicles — Media Oriented Systems Transport (MOST) — Part 9: 150-Mbit/s optical physical layer conformance test plan

---

### Contents

	Foreword
	Introduction
1	Scope
2	Normative references
3	Terms and definitions
4	Symbols and abbreviated terms
4.1	Symbols
4.2	Abbreviated terms
5	Conventions
6	Operating conditions and measurement tools, requested accuracy
6.1	Operating conditions
6.2	Apparatus — Measurement tools, requested accuracy
7	Electrical characteristics
7.1	Test according to LVDS
7.2	Test according to LVTTTL
8	Optical characteristics
8.1	Measurement of optical output power at SP2
8.2	Measurement of optical input power at SP3
8.3	Measurement of pigtail fibre attenuation
8.3.1	General
8.3.2	Practical considerations
8.4	Spectral parameters at SP2
8.5	b0/b1 detection at SP2
8.6	Extinction ratio at SP2
8.7	Optical overshoot and undershoot at SP2
8.7.1	General
8.7.2	Overshoot measurement example
8.7.3	Undershoot (2 UI) measurement example
8.7.4	Undershoot (4UI) measurement example
8.8	Transition times at SP2
8.9	Stimulus creation for SP3
9	Measurement of phase variation
9.1	General
9.2	Measuring alignment jitter
9.3	Measuring transferred jitter
9.4	Test set-ups
9.4.1	Relevant eye mask for MOST components
9.4.2	SP4 Jitter measurement (AJ and TJ)
9.4.3	SP2 jitter measurement (AJ and TJ)
9.5	Crosstalk
9.5.1	General
9.5.2	Measurement set-up
9.5.3	Procedure

- 10           **Power-on and power-off**
  - 10.1        **General**
  - 10.2        **Measuring EOC parameters**
    - 10.2.1      **Measuring EOC parameters — Test set-up**
    - 10.2.2      **Measuring EOC parameters — Signal charts**
    - 10.2.3      **Measuring EOC parameters — Test sequences**
      - 10.2.3.1    **EOC test sequence #1 — Off-state to on-state by SP1 signal**
      - 10.2.3.2    **EOC test sequence #2 — Off-state to on-state by SP1 signal**
      - 10.2.3.3    **EOC test sequence #3 — On-state to off-state by SP1 signal**
      - 10.2.3.4    **EOC test sequence #4 — Off-state to on-state by SP1 signal**
      - 10.2.3.5    **EOC test sequence #5 — On-state to off-state by SP1 signal**
      - 10.2.3.6    **EOC test sequence #6 — Off-state to on-state by /RST signal**
      - 10.2.3.7    **EOC test sequence #7 — On-state to off-state by /RST signal**
  - 10.3        **Measuring OEC parameters**
    - 10.3.1      **Measuring OEC parameters — Test set-up**
    - 10.3.2      **Measuring OEC parameters — Signal charts**
    - 10.3.3      **Measuring OEC parameters — Test sequences**
      - 10.3.3.1    **OEC test sequence #1 — off-state to on-state**
      - 10.3.3.2    **OEC test sequence #2 — Off-state to on-state**
      - 10.3.3.3    **OEC test sequence #3 — Off-state to on-state**
      - 10.3.3.4    **OEC test sequence #4 — Off-state to on-state**
      - 10.3.3.5    **OEC test sequence #5 — On-state to off-state**
      - 10.3.3.6    **OEC test sequence #6 — Off-state to on-state**
      - 10.3.3.7    **OEC test sequence #7 — On-state to off-state**
- 11           **Detecting bit rate (frequency reference)**
- 12           **System performance**
  - 12.1        **General**
  - 12.2        **SP4 receiver tolerance**
  - 12.3        **TimingMaster delay tolerance**
- 13           **Conformance tests of 150-Mbit/s optical physical layer**
  - 13.1        **Location of interfaces**
  - 13.2        **Control signals**
  - 13.3        **Limited access to specification points**
  - 13.4        **Parameter overview**
- 14           **Physical layer verification for MOST components, MOST modules, and MOST devices**
  - 14.1        **FOT**
  - 14.2        **Pigtail**
  - 14.3        **MOST device**
  - 14.4        **Development tool**
- 15           **Full physical layer conformance**
  - 15.1        **Overview**
  - 15.2        **Consideration of FOT**
  - 15.3        **Consideration of pigtail**
  - 15.4        **Consideration of connector interfaces**
  - 15.5        **Generating test signals for the IUT**
    - 15.5.1      **General information**
    - 15.5.2      **Test set-up for jitter measurement**
- 16           **Limited physical layer conformance**
  - 16.1        **Overview**
  - 16.2        **Generating test signals for the IUT input section SP3**
  - 16.3        **Analysis of test results**
  - 16.4        **Test flow overview**
  - 16.5        **Measurement of SP3 input signal of the IUT**
  - 16.6        **Measurement of SP2 output signal of the IUT**
  - 16.7        **Functional testing of wake-up and shutdown**
- 17           **Direct physical measuring accuracy**

**18 General remarks**

- 18.1 Definition of family**
- 18.2 Supplier guideline for product changes**
- 18.3 Dependency of the network frame rate**

**Annex A (informative) Measuring optical signals at SP2 using averaging**

**Annex B (normative) SNR requirements for test equipment**

- B.1 Introduction**
  - B.1.1 Relevance of conformance**
  - B.1.2 OEC impacts to the measurement**
- B.2 Measurement of SNR**
  - B.2.1 Set-up**
    - B.2.1.1 Measurement equipment**
    - B.2.1.2 Measurement set-up**
  - B.2.2 Measurement**
  - B.2.3 SNR calculation**
- B.3 SNR minimum requirements**
  - B.3.1 General**
  - B.3.2 SNR requirement table**

**Annex C (informative) Limited physical layer conformance for development tools**

**Page count: 68**