ISO 21806-13:2021-05 (E)

Road vehicles - Media Oriented Systems Transport (MOST) - Part 13: 50-Mbit/s balanced media physical layer conformance test plan

Contents

Page

Foreword ..... **v**

Introduction ..... **vi**

1 Scope **1**

2 Normative references **1**

3 Terms and definitions **1**

4 Symbols and abbreviated terms **2**
4.1 Symbols 2
4.2 Abbreviated terms 2

5 Conventions **3**

6 Operating conditions and measurement tools, requested accuracy **3**
6.1 Operating conditions 3
6.2 Apparatus — Measurement tools, requested accuracy 3

7 Electrical characteristics **4**

8 Balanced media characteristics **4**
8.1 Threshold for detection of alignment and transferred jitter 4
8.2 RMS signal amplitude 4
8.3 PSD of SP2 output signal 5
8.4 Attenuation of electrical interconnect 7
8.4.1 General 7
8.4.2 Test procedure general 8
8.4.3 Example set-up test procedure 8
8.4.4 Test procedure for data acquisition 8
8.4.5 Impact of attenuation on the data signal 9
8.5 Characteristic impedance of balanced media 10
8.6 RL of PCB interfaces 13
8.7 Receive tolerance 15
8.7.1 General 15
8.7.2 Pattern generator 15
8.7.3 Arbitrary signal generator 16
8.7.4 Cable assembly or its analogue representation 16
8.7.5 Stimulus creation for SP3 16

9 Measurement of phase variation **18**
9.1 General 18
9.2 Measuring alignment jitter 20
9.3 Measuring transferred jitter 23

10 Test set-ups **26**
10.1 General 26
10.2 Set-ups for SP2 link quality 26
10.3 Set-ups for SP3 link quality 28
10.4 Set-ups for SP3 receive tolerance 30

11 Power-on and power-off **31**
11.1 General 31
11.2 Measuring EBC parameters 32
11.2.1 Measuring EBC parameters – Test set-up 32
11.2.2 Measuring EBC parameters – Signal charts 33
11.2.3 Measuring EBC parameters – Test sequences 33

11.3 Measuring BEC parameters 35
11.3.1 Measuring BEC parameters – Test set-up 35
11.3.2 Measuring BEC parameters – Signal chart 37
11.3.3 Measuring BEC parameters – Test sequences 37
12 Detecting bit rate (frequency reference) 40
13 System performance 41
13.1 General 41
13.2 SP3 receiver tolerance 41
13.3 TimingMaster delay tolerance 41
14 Conformance test of 50-Mbit/s balanced media physical layer 44
14.1 Location of interfaces 44
14.2 Control signals 44
14.3 Limited access to specification points 45
14.4 Parameter overview 45
15 Limited physical layer conformance 45
15.1 Overview 45
15.2 Test set-up 46
15.3 Generating test signals for the IUT input section SP3 47
15.4 Analysis of test results 47
15.5 Test flow overview 47
15.6 Measurement of SP3 input signal of the IUT 48
15.7 Measurement of SP2 output signal of the IUT 49
15.8 Measurement of RL 49
15.9 Functional test of wake-up and shutdown 49
16 Direct physical measuring accuracy 50
Annex A (informative) **Limited physical layer conformance for development tools 51**
Annex B (normative) **SP3 stress conditions 52**
Annex C (informative) **Test fixture 53**
Annex D (informative) **Overview on test modes 56**
Bibliography 57