

# 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

---

<b>Contents</b>		<b>Page</b>
	Foreword.....	v
	Introduction.....	vi
<b>1</b>	<b>Scope</b> .....	<b>1</b>
<b>2</b>	<b>Normative references</b> .....	<b>1</b>
<b>3</b>	<b>Terms and definitions</b> .....	<b>1</b>
<b>4</b>	<b>Symbols and abbreviated terms</b> .....	<b>2</b>
	4.1 Symbols.....	2
	4.2 Abbreviated terms.....	2
<b>5</b>	<b>Conventions</b> .....	<b>3</b>
<b>6</b>	<b>Operating conditions and measurement tools, requested accuracy</b> .....	<b>3</b>
	6.1 Operating conditions.....	3
	6.2 Apparatus — Measurement tools, requested accuracy.....	3
<b>7</b>	<b>Electrical characteristics</b> .....	<b>4</b>
<b>8</b>	<b>Balanced media characteristics</b> .....	<b>4</b>
	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
<b>9</b>	<b>Measurement of phase variation</b> .....	<b>18</b>
	9.1 General.....	18
	9.2 Measuring alignment jitter.....	20
	9.3 Measuring transferred jitter.....	23
<b>10</b>	<b>Test set-ups</b> .....	<b>26</b>
	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
<b>11</b>	<b>Power-on and power-off</b> .....	<b>31</b>
	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
<b>12</b>	<b>Detecting bit rate (frequency reference) .....</b>	<b>40</b>
<b>13</b>	<b>System performance .....</b>	<b>41</b>
13.1	General .....	41
13.2	SP3 receiver tolerance .....	41
13.3	TimingMaster delay tolerance .....	41
<b>14</b>	<b>Conformance test of 50-Mbit/s balanced media physical layer .....</b>	<b>44</b>
14.1	Location of interfaces .....	44
14.2	Control signals .....	44
14.3	Limited access to specification points .....	45
14.4	Parameter overview .....	45
<b>15</b>	<b>Limited physical layer conformance .....</b>	<b>45</b>
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
<b>16</b>	<b>Direct physical measuring accuracy .....</b>	<b>50</b>
<b>Annex A (informative) Limited physical layer conformance for development tools .....</b>		<b>51</b>
<b>Annex B (normative) SP3 stress conditions .....</b>		<b>52</b>
<b>Annex C (informative) Test fixture .....</b>		<b>53</b>
<b>Annex D (informative) Overview on test modes .....</b>		<b>56</b>
<b>Bibliography .....</b>		<b>57</b>