

Table 98 defines the test cases for "Operating voltage ramp".

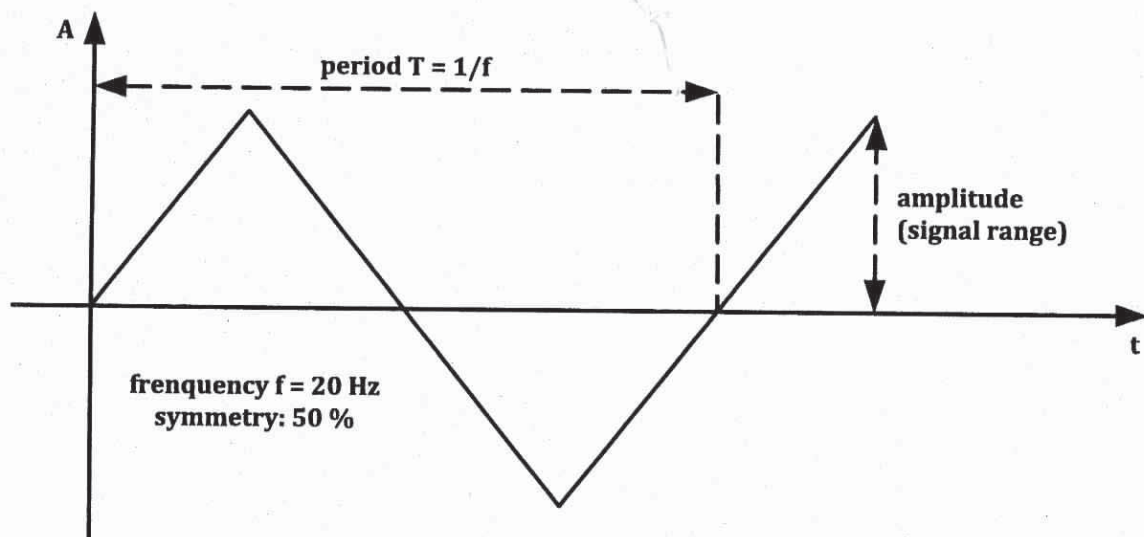
**Table 98 — Test cases: Operating voltage ramp**

EPL-CT-TC	$V_{IUT}$ range: [ $V_{SUP}$ range/ $V_{BAT}$ range]	Signal ramp	Test
[EPL-CT 51].1	[15,0 V to 36 V]/[16,0 V to 36 V]	0,1 V/s	BR_Range_20K test
[EPL-CT 51].2	[36 V to 15,0 V]/[36 V to 16,0 V]	0,1 V/s	BR_Range_20K test
[EPL-CT 51].3	[7,0 V to 36 V]/[8,0 V to 36 V]	0,1 V/s	BR_Range_10K test
[EPL-CT 51].4	[36 V to 7,0 V]/[36 V to 8,0 V]	0,1 V/s	BR_Range_10K test

### 7.2.3 Threshold voltages

#### 7.2.3.1 General

This group of tests checks whether the receiver threshold voltages of the IUT are implemented correctly within the entire specified operating supply voltage range. The LIN bus voltage is driven with a voltage ramp, checking the entire dominant and recessive signal area with respect to the applied supply voltage. In 7.2.3.2 and 7.2.3.3, the signal shall stay continuously on recessive or dominant level depending on the test case. In 7.2.3.4, the RX output transition is detected. Figure 45 shows the triangle signal on the LIN bus.



**Figure 45 — Triangle signal on the LIN bus**

#### 7.2.3.2 [EPL-CT 52] IUT as receiver: $V_{SUP}$ at $V_{BUS\_dom}$ (down)

Figure 46 shows the test configuration of the test system "IUT as receiver  $V_{SUP}$  at  $V_{BUS\_dom}$  (down)".

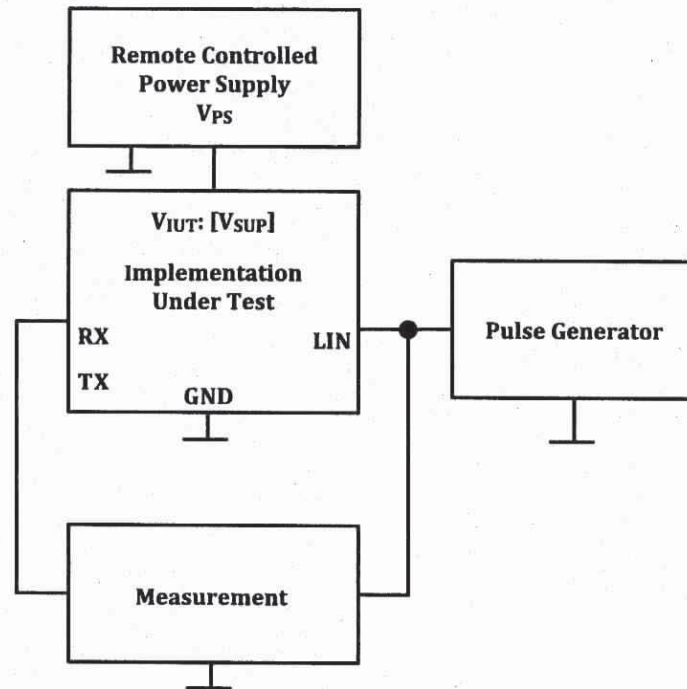


Figure 46 — Test system: IUT as receiver  $V_{SUP}$  at  $V_{BUS\_dom}$  (down)

Table 99 defines the test system “IUT as receiver  $V_{SUP}$  at  $V_{BUS\_dom}$  (down)”.

Table 99 — Test system: IUT as receiver  $V_{SUP}$  at  $V_{BUS\_dom}$  (down)

<b>IUT node as</b>	Class A device	[EPL-CT 52].1, [EPL-CT 52].2, [EPL-CT 52].3
<b>Initial state</b>	<b>Operational conditions:</b>	
	$V_{IUT}: [V_{SUP}]$	Table 100
<b>Test steps</b>	A triangle signal with $f = 20$ Hz and symmetry of 50 % is set on the LIN Bus (see Figure 45).	
<b>Response</b>	The IUT shall generate a dominant or recessive value on RX as defined on Table 100 during the falling slope of the triangle signal.	
<b>Reference</b>	ISO 17987-4:2016, Table 15, Param 62, Param 63 ISO 17987-4:2016, Figure 4	

Table 100 defines the test cases for the falling slope of the triangle signal on the LIN bus.

Table 100 — Test cases: Falling slope of the triangle signal on the LIN bus

EPL-CT-TC	$V_{IUT}: [V_{SUP}]$	Signal range	Expected RX signal	Test
[EPL-CT 52].1	7 V	[36 V to 4,2 V]	recessive	BR_Range_10K test
		[2,8 V to -1,05 V]	dominant	BR_Range_10K test
[EPL-CT 52].2	15 V	[36 V to 9,0 V]	recessive	BR_Range_20K, BR_Range_10K test
		[6,0 V to -2,25 V]	dominant	BR_Range_20K, BR_Range_10K test
[EPL-CT 52].3	36 V	[41,4 V to 21,6 V]	recessive	BR_Range_20K, BR_Range_10K test
		14,4 V to -5,4 V]	dominant	BR_Range_20K, BR_Range_10K test