

Technical Safety Requirement

Objective

The objectives of this document are:

- to specify the technical safety requirements. They are derived from the assumed functional safety requirements and the assumed system architectural design;
- to refine the hardware-software interface (HSI) specification initiated in system level;
- to verify that the technical safety requirements and the hardware-software interface (HSI) specification are consistent with the assumed functional safety requirements and the assumed system architectural design.

Safety Mechanism Summery

SPFTDTI: SPFTDTI+FRTI=FTTI

MPFTDTI: Driving Cycle

SM ID	SM Name	DC	Executed per	Available in What Mode
SM01	VTI measurement gap host crosscheck	99%	SPFTDTI	ACT
SM02	Power supply OV/UV detection	99%	SPFTDTI	ACT
SM03	Frame byte period detection	99%	SPFTDTI	ACT
SM04	Precise reference measurement	99%	SPFTDTI	ACT
SM05	Regular measurement counter host check	99%	SPFTDTI	ACT
SM06	OVUV&OTUT&OC detection	99%	SPFTDTI	ACT
SM07	TWARN detection	99%	SPFTDTI	ACT
SM08	Regular frame counter host check	99%	SPFTDTI	ACT
SM09	Response CRC host check	99%	SPFTDTI	ACT
SM10	Command CRC detection	99%	SPFTDTI	ACT
SM11	Register address host check	99%	SPFTDTI	ACT

SM ID	SM Name	DC	Executed per	Available in What Mode
SM12	Configuration register CRC detection	99%	SPFTDTI	ACT
SM13	Factory register CRC detection	99%	SPFTDTI	ACT
SM14	GND open detection	99%	SPFTDTI	ACT
SM15	Measurement path open and adjacent short host detection	99%	SPFTDTI	ACT
SM16	Multi GPIOn paths host crosscheck	99%	SPFTDTI	ACT
SM17	MOS ON detection	99%	SPFTDTI	ACT
SM18	BIST of analog comparison path	90%	MPFTDTI	ACT
SM19	Frame byte period detection host diagnosis	90%	MPFTDTI	ACT
SM20	Command CRC host diagnosis	90%	MPFTDTI	ACT
SM21	Configuration register CRC host diagnosis	90%	MPFTDTI	ACT
SM22	Factory register CRC host diagnosis	90%	MPFTDTI	ACT
SM23	OVUV&OTUT host crosscheck	99%	MPFTDTI	ACT
SM24	TWARN host crosscheck	99%	MPFTDTI	ACT
SM25	Redundant fault flag	99%	MPFTDTI	ACT