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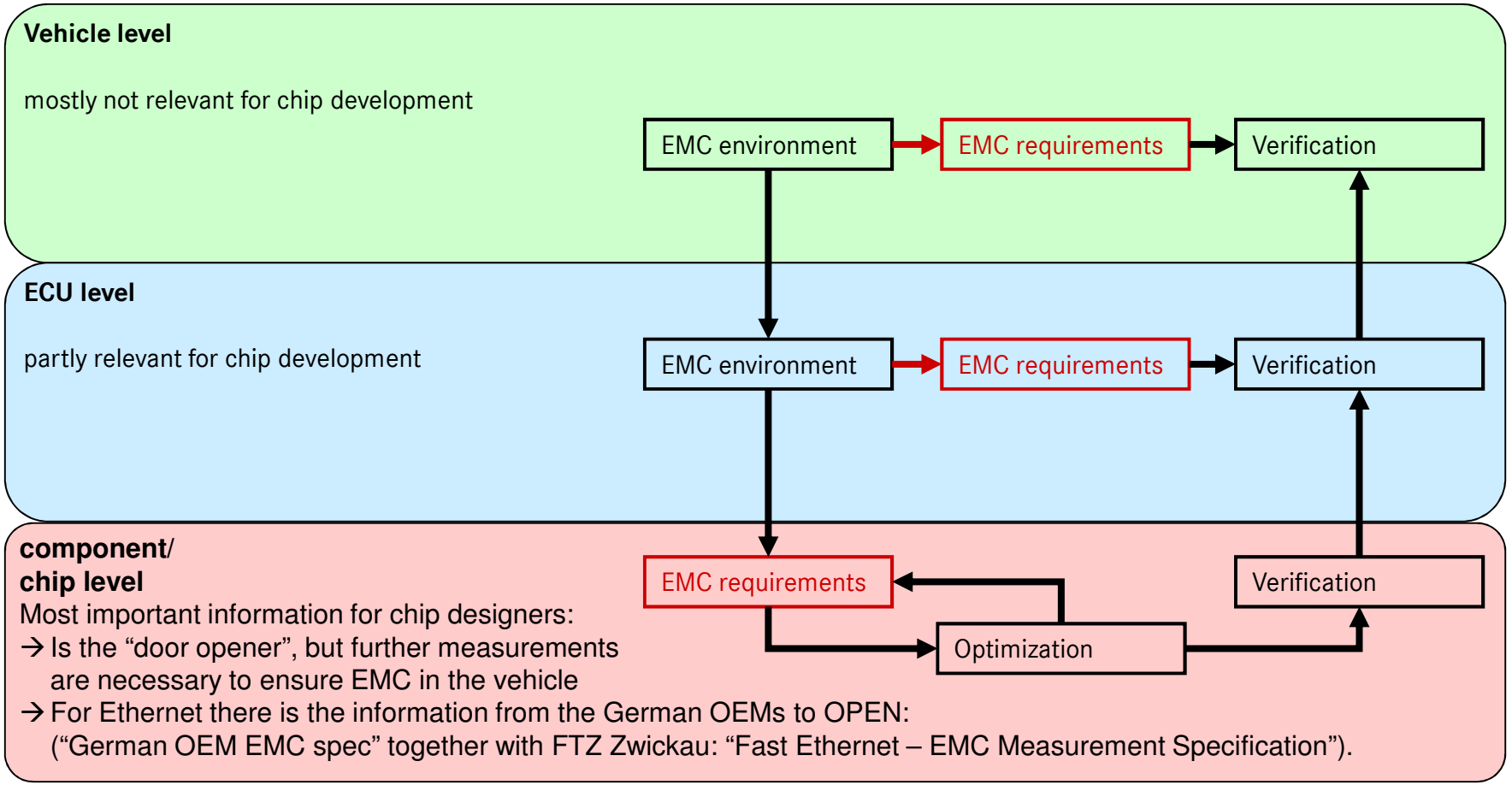
IEEE RTPGE information

Update on EMC requirements

Supported by:
Stefan Buntz (Daimler)
Kirsten Matheus (BMW)
Thomas Hogenmüller (BOSCH)
Mehmet Tazebay (Broadcom)
Jens Wülfing (TE)

EMC requirements

from Minneapolis - 3 different „levels“ of EMC:



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OEM EMC Specifications

Should be completed by the automotive OEMs, latest to the next IEEE meeting in San Diego (16th of July).

manufacturer	document #	titel	level	last update	available?
German OEMs	-	Fast Ethernet Physical Layer - EMC Measurements Specification for Transceivers V1.0	chip	2011-6	
BMW	BMW 600 13.0	Electric- / Electronic components in cars	vehicle		
BMW	BMW GS 95002	Electromagnetic Compatibility (EMC) Requirements and Tests	vehicle/component		
Daimler	MBN 10284-1	EMC performance requirements - vehicle tests	vehicle	2011-4	Daimler Supplier Portal : https://daimler.portal.covisint.com
Daimler	MBN 10284-2	EMC performance requirements - component tests (cars and vans)	component	2011-4	Daimler Supplier Portal : https://daimler.portal.covisint.com
Daimler	MBN 10284-4	EMC performance requirements - component tests (trucks and busses)	component	2011-4	Daimler Supplier Portal : https://daimler.portal.covisint.com
Volkswagen	VW TL 801 01	Electric and electronic components in cars			
Volkswagen	VW TL 820 66	Conducted Interference			
Volkswagen	VW TL 821 66	EMC requirements of electronic components - bulk current injection (BCI)			
Volkswagen	VW TL 823 66	Coupled Interference on Sensor Cables			
Volkswagen	VW TL 824 66	Immunity Against Electrostatic Discharge			
Volkswagen	VW TL 965	Short-Distance Interference Suppression			
Renaul/Nissan	Renault 36.00.400	Physical environment of electrical and electronic equipments			
Renaul/Nissan	Renault 36.00.808	EMC requirements (cars and electrical / electronic components)			
Renaul/Nissan	Nissan 28400 NDS03	Low frequency surge resistance of electronic parts			
Renaul/Nissan	Nissan 28400 NDS07	Immunity against low frequency surge (induction surge) of electronic parts			
Renaul/Nissan	Nissan 28401 NDS02	EMC requirements (instruction concerning vehicle and electrical ...)			
PSA	PSA B21 7090	EMC requirements (electric and electronics equipment)			
PSA	PSA B21 7110	EMC requirements (electric and electronics equipment)			
GM	GM 3091 Rev. 4	GMW3091 – Vehicle: Requirements and Verification	vehicle		
GM	GM 3097 Rev. 4	GMW3097 – component: Requirements and Verification	component		
Hyundai	Hyundai ES 39110-00	EMC requirements			
Toyota	TSC7001G	Engineering standard (electric noise of electronic devices)			
Toyota	TSC7006G	Wide Band-Width Antenna Nearby Test (0.4 to 2 GHz), Radio Equipment Antenna nearby Test (28 MHz ...), Mobile Phone Antenna Nearby Test (835 MHz...)			
Toyota	TSC7025G	TEM Cell Test (1 to 400 MHz), Free Field Immunity Test (20 MHz to 1 GHz AM, 0.8 to 2 GHz PM), Strip Line Test (20 - 400 MHz)			
Toyota	TSC7026	Narrow Band Emissions			
Toyota	TSC7508	Conductive Noise in FM, TV Bands, LW, AM and SW Bands, Radiated Noise in FM, TV Bands, AM, SW, and LW Bands			
Toyota	TXC7315G	Electrostatic Discharge (Gap Method)			
Ford	EMC-CS-2009.1	EMC Specification for E/E Components and Subsystems	component	2010-02	www.fordemc.com
Fiat/Chrysler	FIAT 9.90110	Electric and electronic devices for motor vehicles			
Fiat/Chrysler	Chrysler PF 9326	Electrical electronic modules and motors			
Jaguar/LandRover	EMC-CS-2010jlr	EMC Specification for E/E Components and Subsystems	component	2010-06	http://www.jaguarlandrover.com/emc/docs/download/emc-cs-2010jlr_rel.pdf
Volvo					
Porsche	Porsche AV EMC EN	EMC requirements			
Mazda	MES PW 67600	Automobile parts standard (electronic devices)			
Mitsubishi	ES-X82010	General specification of environment tests on automotive electronic equipment			
Mack Trucks	606GS15	EMC requirements			
MAN	MAN 3285	EMC requirements			
Freightliner	Freightliner 49-00085	EMC requirements			
Iveco	IVECO 16-2103	EMC requirements			
Scania	TB1400	EMC requirements			

Conclusion

- The above automotive EMC requirements on component level must be fullfilled with ECUs equipped with RTPGE connections.
- All measurements in the lab are good indications. Nevertheless the final approval is done with vehicle measurements, as the complexity in the vehicle can not be fully simulated in the lab.