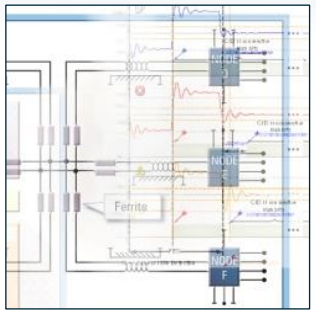


CAN-XL Evaluation Board

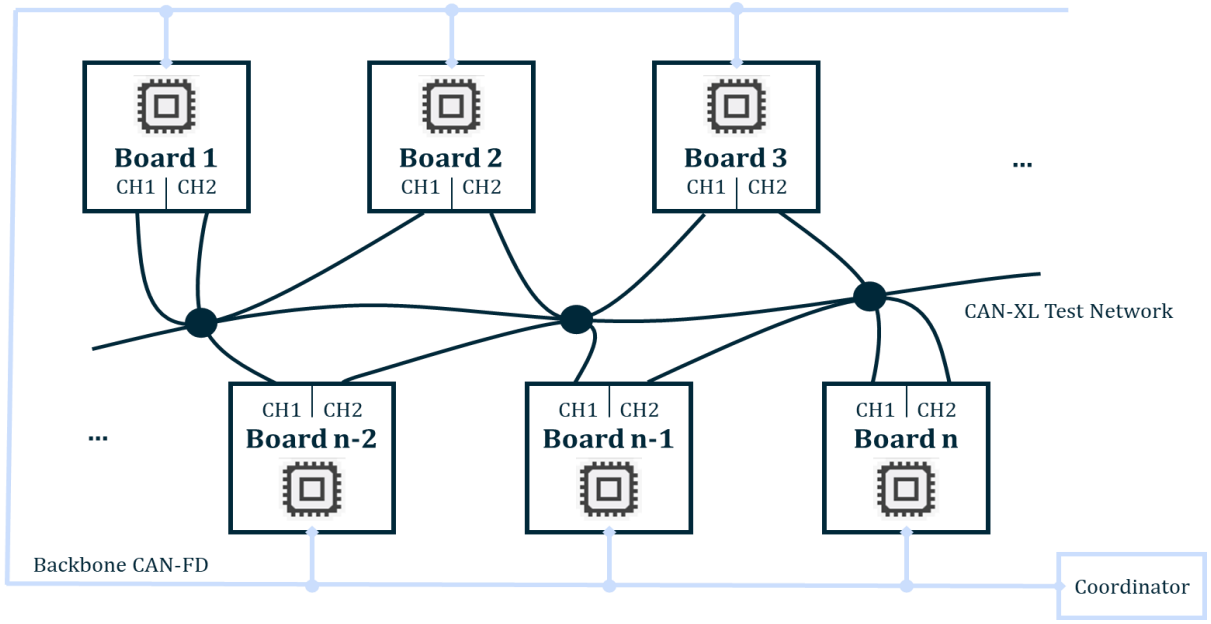
Bosch, NXP Semiconductors, Volkswagen AG, C&S group GmbH

Overview

CAN-XL Evaluation Boards

Overview and Scope

- DE1-SoC (Terasic) FPGA board includes the latest Bosch CAN-XL IP
- Every board includes two CAN-XL test interfaces and one CAN-FD interface for optional control and configuration via coordinator SW
- A total of 31 CAN-XL Evaluation Boards can be used in one network



Semiconductor Manufacturers

Integrate and test your PMA device in different environmental and configuration conditions.

OEMs

Try out the CAN-XL technology from ground up: create your requirements for series car integration up to series car network approval.

Measurement Equipment Manufacturers

Develop your products with the help of the CAN-XL Evaluation Board to fit CAN-XL analysis.

Universities and Research Groups

Use our CAN-XL Evaluation Board for research and education.

CAN-XL Evaluation Boards

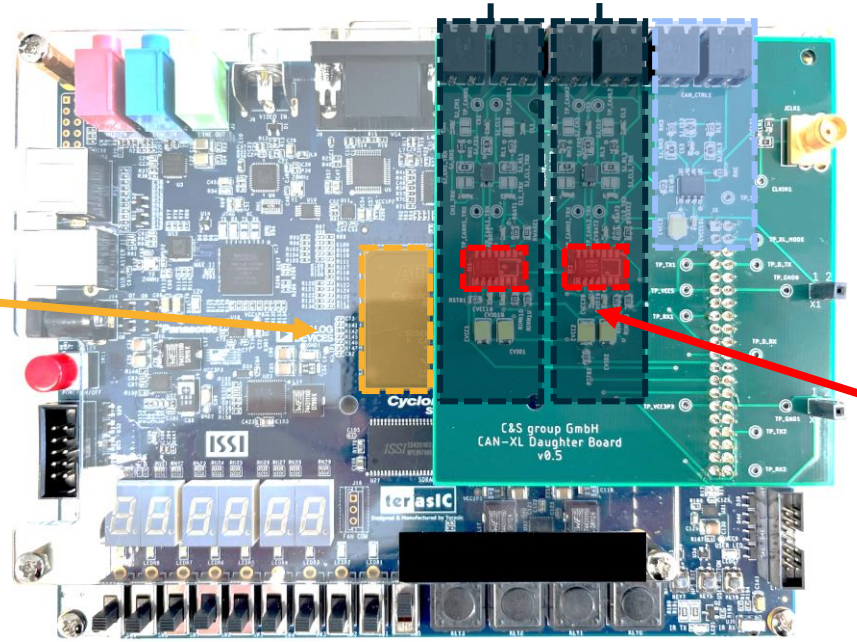
FPGA and Adapter Board

Transmitting CAN-XL messages according to free configurable scheduler or default setup after start-up

CAN-XL Channel 2
incl. loop through

CAN-XL Channel 1
incl. loop through

Coordinator is connected via CAN-FD interfaces from Vector or Peak



Changeable PMA adapter
- PMA implementation with up to 14 pin footprint
- CAN-XL hardware interface (e.g., CMC, termination, ESD)

Fully configurable CAN-XL capabilities provided by BOSCH's CAN-XL IP
- bit timing
- frame length
- data rates
- MICI (if provided by used PMAs)

PMA implementation provided by NXP

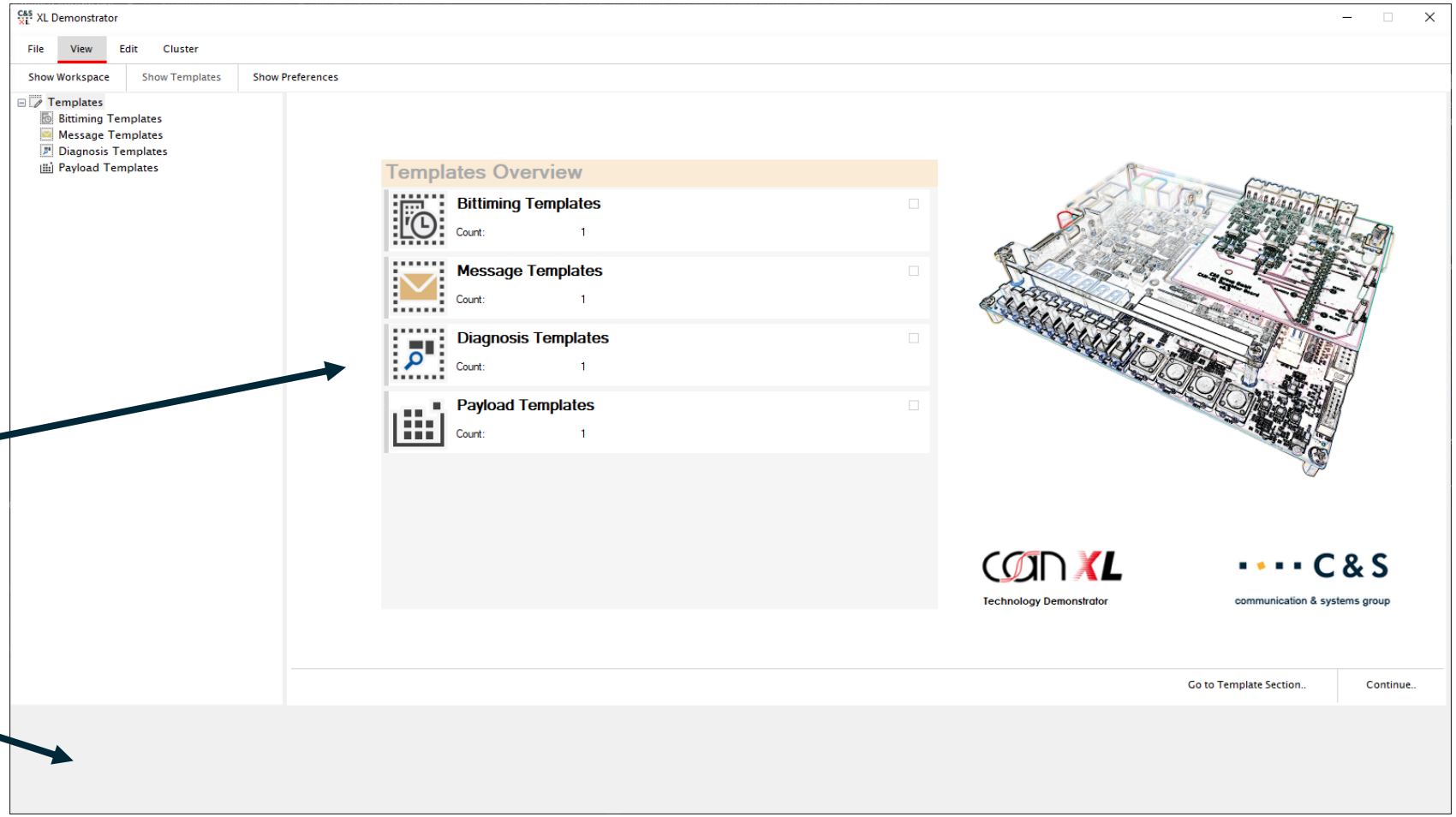
CAN-XL Evaluation Boards

Coordinator Software - General

Easy to use GUI with full control over attached interfaces

CAN-XL raw system diagnosis
- Evaluation Board
- PMA diagnosis

Software Log

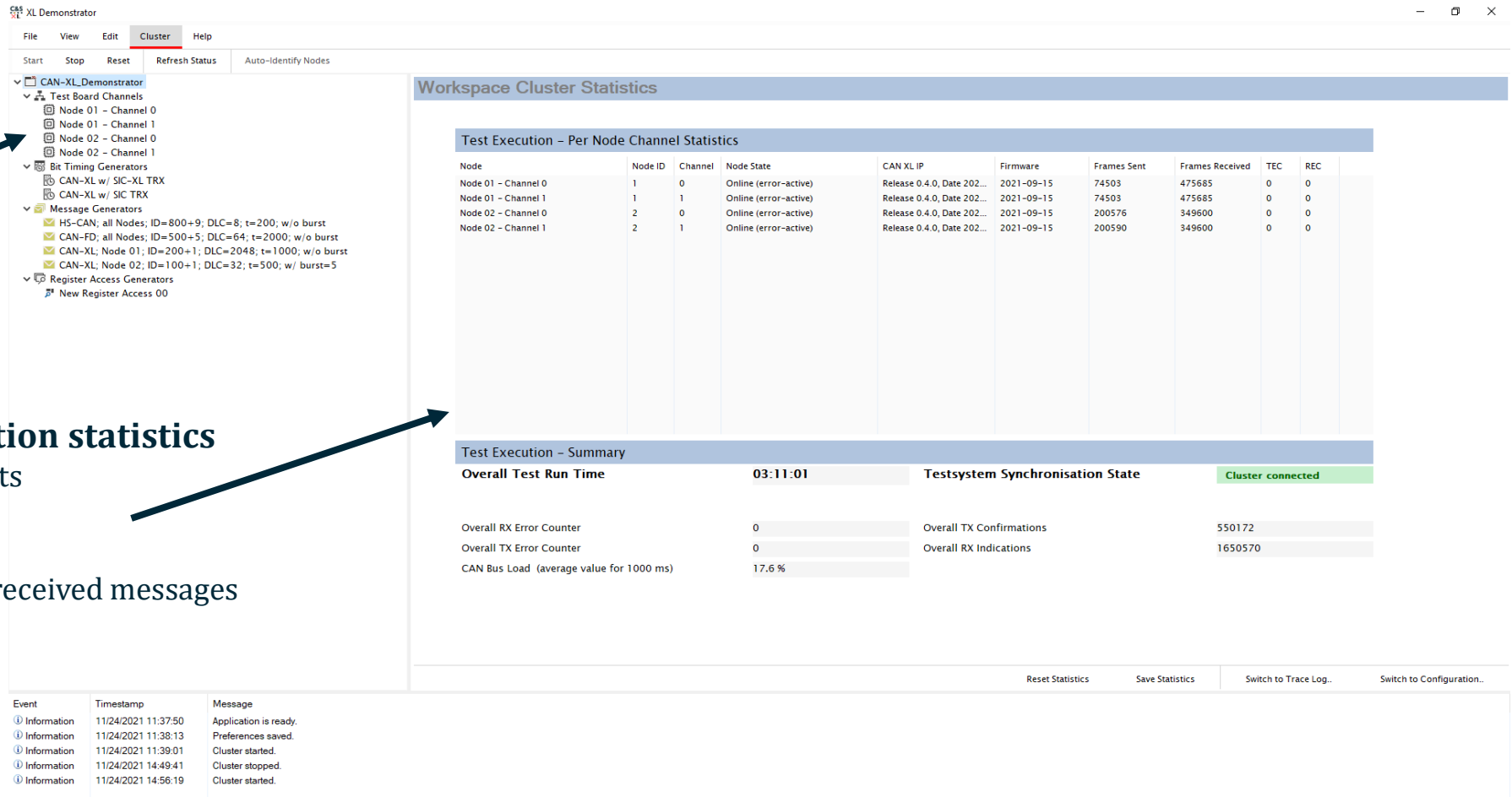


CAN-XL Evaluation Boards

Coordinator Software – Status and Statistics

Exchange of workspaces
- topology setups
- CAN-XL configurations

Communication statistics
- protocol events
- error counter
- bus load
- transmitted/received messages



CAN-XL Evaluation Boards

Coordinator Software – Bit Timing and Messages

Message Generator Instance Configuration

Message Structure

Frame Format	CAN XL
Message Base ID [hex]	200
Message ID Offset (incremental per attached Node)	1
Identifier Extension (IDE)	No
Bit Rate Switch (BRS)	Yes
Data Length Code (DLC)	2047
SDU Type (SDT)	0
Virtual CAN Network ID (VCID)	0
Acceptance Field (AF)	0
Simple Extended Content (SEC)	No

Payload Data

Length resulting from DLC [bytes]	2048
Bit Pattern in Data Field	All Bits 0
Custom Byte Pattern Placement	Begin of Data
Custom Byte Pattern [hex] (could be 0 up to 32 bytes)	

Message Transmission

Enable Transmit	Yes
Cycle Time [ms]	1000
Number of Burst Repetitions (set to zero if no burst requested)	0

Individual Message IDs (combined from Base ID and Offset)

Node	Node State	Message ID
Node 01 – Channel 0		200h
Node 01 – Channel 1		201h

Message Configuration

Bit Timing Configuration

Bit Timing Configuration / Read Overview

Target Configuration to set

Global

Frame Format	CAN XL		
CAN Clock Source	Internal Clock 100 MHz		
External Clock [MHz]	40	Retransmissions	unlimited
BRP	1	Enable TDC	Yes

Arbitration Phase

Prop Segment [TQ]	119	Bit Rate [Mbit/s]	0.5
Phase Segment 1 [TQ]	40	Bit Time [ns]	2000
Phase Segment 2 [TQ]	40	NTQ	200
SJW [TQ]	40	TQ [ns]	10
		Sampling Point [%]	80

CAN FD Data Phase

Prop Segment [TQ]	25	Bit Rate [Mbit/s]	2
Phase Segment 1 [TQ]	12	Bit Time [ns]	500
Phase Segment 2 [TQ]	12	NTQ	50
SJW [TQ]	12	TQ [ns]	10
		Sampling Point [%]	76
TDC Offset [mTQ]	38		

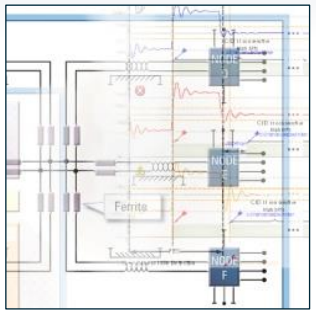
CAN XL Data Phase

Prop Segment [TQ]	5	Bit Rate [Mbit/s]	10
Phase Segment 1 [TQ]	2	Bit Time [ns]	100
Phase Segment 2 [TQ]	2	NTQ	10
SJW [TQ]	1	TQ [ns]	10
		Sampling Point [%]	80
TDC Offset [mTQ]	0		
TRX Mode Switching	Yes	Error Signaling	No
PWME Offset [mTQ]	0	PWME Short Phase [TQ]	3
		PWME Long Phase [TQ]	7

CAN-XL Evaluation Boards

Pricing and Shipment

- Boards in stock needs 1 week + shipment and customs for the delivery
- Boards out of stock needs further up to 4 weeks
- List price can be requested via support@cs-group.de



Our Tests, your Safety!

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