# Lnk

# SoundWire

**Protocol Analyzer Traffic Generator** 

# swimmy Release notes V1.42

LnK Tools 44, rue des Combattants B-4624 Romsée Belgium www.lnk-tools.com release notes 7 June 2017

# New items (1.42)

- Implemented clock stop (clock and data line low + restart from external device or bit set by Swimmy), init gear divider at start of TG.
- Implemented PDM and PCM monitoring.

Detected valid streams will be shown so they can be used directly. No need to know all the data port parameters.

SoundWire Analyzer Ver. 1.42 01-06-2017 - grabdata.swa				_ <b>_ x</b>
File Help				
Analyzer Configure REC CLEAR LiveView Scrip 0.000.000.000 < ACK Presets HW Confia Platform Data Cl Data Cfa Trigger GPI Config Dat Filter PXM monitor		Script RAW	/S MSG DATA	> 3.994.535.750 Frames R/W messages
History       TG         XML       Substant transfer parameters>         XML       Data Cfq         Pletform       Constant transfer parameters>         3 SPCM PT 16b       Dev1 Port 1         result trace       VDL DP Bosko         CM Data Test       TestSlave         ClockStop weit       ClockStop weit         ClockStop weit       20 1chn 1536K         14 SPCM 16K 3       10 1chn 768K 1         ZP DL At10.105       cp di devL Ink         traffecord       api         Clear       Clear	Image: Second system   Block Packing Mode   Block Group Count   1   1   2   3   4   5   6   7   8   1   1   1   2   3   4   5   6   7   8   1 <td>○ Track Port          Slave         1         Port         1</td> <td>PCM Clock configuration            <ul> <li>Reference is SoundWire Clock</li> <li>Bus Frequency</li> <li>12288000</li> <li>Hz</li> </ul>          Sample Rate       1228800       Hz         Reference is internal PLL       Sample Rate       48000       Hz         Reference is MCLK on GPID       MCLK divider       I       I</td> <td>Monitor</td>	○ Track Port          Slave         1         Port         1	PCM Clock configuration <ul> <li>Reference is SoundWire Clock</li> <li>Bus Frequency</li> <li>12288000</li> <li>Hz</li> </ul> Sample Rate       1228800       Hz         Reference is internal PLL       Sample Rate       48000       Hz         Reference is MCLK on GPID       MCLK divider       I       I	Monitor
د. ۲۵ (۱۳۳۲) آتو	Bus Freq. 12.288 MHz	[48 x 10] rows/col	s Trig 1:0 (0) 2:0 (0) Act	ivity 0x03 Gpi 0x00 SML

- Implemented GPI labels and busses via config. Preset files can be saved and loaded.

Help							
	Analyzer		Traffic Generator		Views		
Configure	REC CLEAR	LiveView Script	PLAY STOP	Script RAW			
	• •	•	▶ ■	Trace RAW	/ MSG DATA		
0.000.000.000							3.994.535.750
	• 8						Frames R/W messages
							How messages
Presets		form					
Data Cfg	Trigger GP1 C	Config					
Filter	PxM monitor						
History	Color	Enable Color	Enable Color	Enable Color	Color	Color	Enable Color
TG		GPI 2	GP13	GPI 4	GPI 5	1.50.0	GP17
XML	Comms States	GP12	GPI3	GP14	GPID	Initialisation	GP17
SWA	4 wire bus 👻	1 wire signal 👻	1 wire signal 🔹	1 wire signal 🔹	1 wire signal 🔹	1 wire signal 🔹	1 wire signal 🔹
Data Cfg							
Platform	Load Save Clear	Load Save Clear	Load Save Clear	Load Save Clear	Load Save Clear	Load Save Clear	Load Save Clear
1/1 🕞							
PCM PT 16k	0x00 idle 0x01 int	0 Off 1 On	0 Off 1 On	0 Off 1 On	0x00 0 0x01 1	0x00 false 0x01 true	0 Off 1 On
sult trace	0x01 init 2		1 00	1 01	UXUT	uxur uue	1 01
L DP Bosko	0x03 rx						
Data Test	0x04 timeout						
stSlave	0x05 tx						
kStop wait	0x06 reply 0x07 error						
ckStop	0x08 reset						
c stop	0x09 9						
pdm2	0x0a 10						
Lchn 1536K	0x0b 11 0x0c 12						
PCM 16K 3	0x0c 12 0x0d 13						
Lchn 768K 1	0x0e 14						
DL A110.105	0x0f 15						
dl dev1 lnk							
trigRecord							
qp							
Clear							

Presets Data Cfq Filter	Go to frame     1     Exploded     Detail       Image: Hide Ping     Errors     Enumeration       Image: Show GPI     Show GPI     Image: Show GPI	
History TG XML SWA Data Cfq	GPI       Comms States 4 wire(s) idle (0x00)       GPI 5 1 wire(s) 1 (0x01)         Bus Frequency 0.128 MHz       0.128 MHz         Frame 1604       Timestamp 0.617.018.988 ns       Control W 0x00 0x04 0x00 0x4	false (0x00)       Word     PREQ     Static Sync     Dynamic Sync       xb1 0x2a 0x58     0     0x0b1     11 (0xb)
Platform	NORE	Ping Bus REQ Bus REL 0 0 No
Overview	Data Cfg  v Dev1 Port0  v Dev2 Port0  v Dev3 Port0  v Dev3 Port0  Dev3 Port0	9 Port 0

Ch 1	All				SSP Bank	Config Frame Shap	GPI None	•	
Frame 1598 1653 0.128 MHz	1708 1762 181	17 1872 1926	1981 2038	2090 2145	2200 2254	2309 2364 2418	2473 2528	2582 2637	2692 2746 280
Comms States idle reset	timeout init	t 2 idle	init	idle	init 2 timeo	ut reset	idle		
GPI 5 1 0							1 0		1
Initialisation false							true	false	true f

- Implemented trigger functions.

SoundWire Analyz le Help	er Ver. 1.42 01-06-2017 - grabdata.swa	
Configure	Analyzer Traffic Generator Views       REC     CLEAR     LiveView     Script     PLAY     STOP     Script     RAW     MSG       Image: Market Structure     Image: Market Structure	44.855
ACK Presets Data Cfq Filter	Frames RWV messag HW Config Platform Trigger GPI Config PxM monitor	
History TG XML SWA Data Cfq Platform <1/1 -> 3 SPCM PT 16H result trace V DL DP Bosko CM Data Test TestSlave ClockStop wait	Device address       Register address       Trigger 1       Start Recording         0       1       2       GroupId 12       All       Opcode         3       4       5       Monitor       Value       0         6       7       8       Broadcast       Value       0         9       10       11       Clear       All       Mask       0         Value       0       AcK       NAK       No ACK       AND         Events       Errors       Lost       Lost       Lost       Lost       Lost       Lost       Lost       Sature       Call DLL function         Frame Sunst       PREQ       Lost       Lost       Lost       Sature       Clause       Glause       Glause       filename.dll         function       1       1       1       1       1       function       filename.dll	
ClockStop clk stop 8ch pdm2 10 1chn 1536K [4 SPCM 16K 3 10 1chn 768K ; CP DL A110.10.5 co dl dev1 lnk triaRecord api Clear	Device address       Register address       Trigger 2       Trig 1 out counter       Start Recording         0       1       2       GroupId 12       All       •       <	
	Pulse TRIG 2 at Start Of Fra	ime
	2 HW No Bus Clock [48 x 2] rows/cols Trig 1:0 (0) 2:0 (0) Activity 0x00 Gpi 0x00	SM

- View have now a Stopping frame and Bus Restart.

SoundWire Analyzer Ver. 1.42 01-06-2017 - grabdata swa	
File Help	
Analyzer     Traffic Generator     Views       Configure     REC     CLEAR     LiveView     Script     PLAY     STOP     Script     RAW     MSG       Image: the structure       Image: the structure     Image: the structure     Image: the structure     Image: the structure     Image: the structure       Image: the structure     Image: the structure     Image: the structure     Image: the structure     Image: the structure       Image: the structure     Image: the structure     Image: the structure     Image: the structure       Image: the structure     Image: the structure     Image: the structure     Image: the structure       Image: the structure     Image: the structure     Image: the structure     Image: the structure       Image: the structure     Image: the structure     Image: the structure     Image: the structure       Image: the structure     Image: the structure     Image: the structure     Image: the structure       Image: the structure     Image: the structure     Image: the structure     Image: the structure       Image: the structure     Image: the structure     Image: the structure       Image: the structure     Image: the structure     Image: the structure	
	► 7.759.978.934 Frames
	R/W messages
Image: Presets     Go to frame     1     Exploded     Detailed     Synthetic     Application     Search     Start       Data Cfg     If Hide Ping     Errors     Enumeration     Bank/SSP     Interrupt       Filter     Show GP1	
TG UND UNDE PING	Î
SWA Bus Frequency Data Cfg 12.288 MHz	=
Platform France Trroslamp NoRE CONTROL PORT DA SCP SVP_SystemCtrl CkStop Prep CkckStopMode WateUpEnable HPHY_Select	
<	Force Reset 0 (0x0)
V DL DP Bosko STOPFED 0.500.781.744 ns BUS CLOCK STOP EVENT	
CM Datasa CLCCK RESTART 2.625 155 580 ns BUS CLOCK RESTART	
ClockStop	

- RAW view has now a clearer view on the used bit slot in the payload.

SoundWire Analyz	er Ver. 1.42 01-06	5-2017 - C:\Ln	K\SoundWire	\clients\Cirrus	20170525	\result_trace	e.swa							
ile Help														
Configure	REC	Analyzer	iveView	Script	PLAY	tor STOP		cript [	RAW RAW	MSG MSG	) DATA			
0.000.000.000													▶ 0.052. Frames	
ACK	- <b>*</b>						т.	r					R/W messa	ges
Presets G Data Cfg Filter	to frame 1	Verview Data	Cfg 🔹	Dev 1 Port 1 Dev 1 Port 1	Dev 1     Dev	Port 3 🔻					¥			
History TG XML SWA Data Cfq Platform <	0 PREQ Opcode (ping) SSP BREQ BREL Slave Stat 11 (0) Slave Stat 10 (0) Slave Stat 2 (0) Slave Stat 5 (0) Slave Stat 5 (0) Stat Sync Phy Sync Slave Stat 2 (0) Stat Sync Phy Sync Slave Stat 1 (1) Dyn Sync Party	0.911 ns col 9 Eve BEO 5 Slave 10 ent Not Preser 0 0 0 0 0 0 0 0 0 0	Bus REL 0 Not Slave 11 nt Not_Present	Present Atta	lave 1	Slave 2	EEQ Statis Oxf Slave 3 Not. Presen	Slave				PAR MAK 1 0 ve 7 Sia Present Not F		
	ACK	0 0 1 1 0 1 1 0 188 191												
	Hide Statistic	s Memory	).		Properties	Samples	Registers	Streams						-
			( HW		No Bus C	llock				Trig 1:0	0 (0) 2:0 (0) 4	Activity 0x00	Gpi 0x00	SML

- HiDPI update.Stop recording at max size to avoid too big bin file.Added configurable size or configurable period recording.

When a recording size	or recordin	ng period is	defined, the REC b	outton will get an '*'

Preferences
Analyzer
Automatic STOP RECORDING settings:
after time 0 mins 0 secs
when file size reaches 200 MByte
OK Cancel Help

REC *
-------

- Changed the filter for LiveView (is not displaying useless Pings)
- Added frequency information the views

Bus Frequency           12.288 MHz           Timustamp           178           0.000.856.921 ns	Control Word 1 0x20 0x00 0x52 0xb1 0x00 0x2c	PREQ Static Sync 0 0x0b1	Dynamic Sync 5 (0x5)	PHY sync 0	Opcod 2 Read		NAK ACK	[
				sterAddress 0x0052	Data 0x00	SCP Generic	SCP_DevId_2 0x00	Manufacturerid Lsb 0 (0x0)
Ch 1 1x A	I None ch 1							

Frame	12.288 MHz	4	5	6	7
Bank	0	0	ø	0	u .
Frm Shape		2x48	2x48	2x48	2x48
	,				

- Added possibility to abort loading and decoding.

	Analyzer	
REC	ABORT	LiveView
٠		•

Solved bugs:

- Once PxM monitoring was enabled the SYS\_TEST\_REG is not reset again when no PxM is used
- Clear data port registers after a BUS\_RESET.
- Solved bug that had the TG button on for always even if the TG had finished.
- Data view: added more resolution in the viewing of the samples when zooming in. In some cases the lower 8 bits were lost in the drawing of the wave when having a sample size of 16 bit and more.
- Data port registers where not swapped to another bank if only a bank switch occurred.
- NextInvertBank located in the DP\_PortCtrl register became active immediately and not at the next bank switch, is now ok.

# Previous items version 1.41

This was a test release.

# Previous items version 1.40

- solved bug that sometimes caused that the analyser software was crashing after 10 to 20 times performing a record/play scenario.
- Soundwire 1.1 add port direction in analyzer memory map
- NAK cell was coloured red on the position of the ACK in the RAW view

- PDM enable was not cleared, so once a pdm/pxm script has read, the flag kept set.
- Indicating Parity error in the script view
- Bug solved that Script running at low clock frequency could have been stopped before the end.
- Added feature to change the SoundWire bus clock frequency at frame boundary. Divider 1 and 2 are operational.

# Previous items version 1.39

- solved bug about PCM/PDM interface (see 1.38)
- solved bug that sometimes generated extra data in the TG at the end of a script in case the previous script was larger than the current script.

#### **Previous items version 1.38**

 A recently introduced bug in the IP of the analyzer has the effect that some hardware boxes are failing on doing PDM/PCM I/O via the port on the connector. Therefor this release is mainly the swimmy version1.37 but the IP (bit file) of version 1.34. As soon as this issue is solved there will be another release.

# Previous items version 1.37

- solved some issues in the navigation through the views
- added more info in the script view
- added a new Scriptbuilder in the installation package

# **Previous items version 1.36**

- Solved bug with PHY\_Sync set in script



- Implemented the corruption of Dyn sync in the script so the user can choose for a 1 bit or 2 bits corruption of the Dynamic Sync.

#### Scriptbuilder:

<b>∃</b> 9	E	Frame Start	1, ROW=0, COL=0, PREQ=0, SS=0xB1, PHY=0, DS=Invalid	
		Repeat	1	
		Row Control (ROW)	0 - 48 Rows	
		Column Control (COL)	0 - 2 Columns	
		Ping Request (PREQ)	0 - No	
		Static Sync (SS)	OxB1	
		Select PHY (PHY)	0 - Basic PHY	
		Dynamic Sync (DS)	Invalid - 1 bit error	
		Parity (P)	Valid	
		Negative Acknowledgment (NAK)	1 0 - 48 Rows 0 - 2 Columns 0 - No 0xB1 0 - Basic PHY Invalid - 1 bit error Valid 0 - No 0 - No SSP=0_BREQ=0_BREI=0	
		Positive Acknowledgment (ACK)	0 - No	
10		PING	SSP=0, BREQ=0, BREL=0	Ξ
11		Frame Start	1, ROW=0, COL=0, PREQ=0, SS=0xB1, PHY=0, DS=Valid,	
± 12		PING	SSP=0, BREQ=0, BREL=0	
13	Е	Frame Start	1, ROW=0, COL=0, PREQ=0, SS=0xB1, PHY=0, DS=Invalid	
		Repeat	1	
		Row Control (ROW)	0 - 48 Rows	
		Column Control (COL)	0 - 2 Columns	
		Ping Request (PREQ)	0 - No	
		Static Sync (SS)	OxB1	
		Select PHY (PHY)	0 - Basic PHY	
		Dynamic Sync (DS)	Invalid - 2 bit errors	
		Parity (P)	Valid	
		Negative Acknowledgment (NAK)	1 0 - 48 Rows 0 - 2 Columns 0 - No 0xB1 0 - Basic PHY Invalid - 2 bit errors Valid 0 - No 0 - No 550-0 PBEC-0 PBEL-0	
		Positive Acknowledgment (ACK)	0 - No	
± 14		PING	SSP=0, BREQ=0, BREL=0	

#### Script view:

frame	Timestamp Finame shape	(NORS ) PINS	Dus RCQ Dus RD	E. Phy s	ync	Slave 0	Slave 1	Slave 2	Slave 3	Slave 4	Slave 5	Slave 6	Slave 7	Slave 8	Slave 9	Slave 10	Slave 11		
22	0.001.056.000 ns 48 rows x 2 cols		0 0	0		Not_Present													
frame.	Timestamp Frame shape	Dynamic Sync 1	bé error ( Nope	Hing	Bus Rt	U Bus REL	Phy sync.	Slave 0	Slave 1	Slave 2	Slave 3	Slave 4	Slave 5	Slave 6	Slave 7	Slave 8	Slave 9	Slave 10	Stave 11 Not_Present
23	0.001.104.000 ns 48 rows x 2 cols				0	0	0	Not_Present											
Frame	Timestamp Frame shape	NORE POP	Bus REQ. Bus RE	L Phy a	ync -	Slave 0	Slave 1	Slave 2	Slave 3	Stave 4	Slave 5	Slave 6	Slave 7	Slave 8	Slave 9	Slave 10	Slave 11		
24	0.001 152.000 ns 48 rows x 2 cols		0 0	0		Not_Present	Not_Present	Not_Present	Not_Present	Not_Present	Nol_Present	Nol_Present	Not_Present	Not_Present	Not_Present	Not_Present	Not_Present		
Frence	Timestemp Frame shape	Dynamic Sync 2	bia arror Lucza	Ping	Bus F	IFO Bus RFL	Phy sync	Slave 0	Since 1	Sleve 2	Sleve 3		Slave 5	Slave 6	Size 7	Slave 8	Sieve 9	Slave 10	Silve 11
25	0.001.200.000 ns 48 mws x 2 cols		hiber	)	0	0	0	Not_Present	Not Present	Not_Present	Not_Present	Not Present	Not_Present	Not Present	Not_Present				

#### Synthetic view of a capture:

Frame Timestamp	Debug status Frame shape - Control Word PREO Static Synci Dynamic Synci PHY synci Dpcode PARI NAK ACK
23 0.000.322.637 ns	Dx30         48 rows x 2 cols         0x00 0x00 0x00 0x00 0x0 0x48         0         0x0b1         9 (0x9)         0         0 Ping         0         0         0           Bus REQ         Bus REQ         Slave 0         Slave 1         Slave 3         Slave 4         Slave 5         Slave 6         Slave 7         Slave 8         Slave 9         Slave 10         Slave 11
	0 0 Not Present No
Frame         Timestamp           24         0.000.327.627 ns	Debug status         Frame shape         Control Word         PRE0         Static Sync         Dynemic Sync         DHV sync         Dpcode         PAR         NAK         ACK           0x30         48 rows x 2 cols         0x00 0x00 0x00 0x00 0x14         0         0x0b1         2 (0x2)         0         0 Prig         1         0         0
NORE Ping SSP	Dus RE0         Dus RE0         Slave 0         Slave 1         Slave 2         Slave 3         Slave 4         Slave 5         Slave 6         Slave 7         Slave 8         Slave 9         Slave 10         Slave 11           0         0         Not Present
Frame Timestamp 25 0 000.332.647 ns	Debug status         Frame shape         Control Word         PRE0         Static Syncl         Dynamic Syncl         PHY syncl         Opcode         PAR         NAK         /ACK           0x30         48 rows x 2 cols         0x00 0x00 0x00 0x34         0         0x0b1         6 (0x6)         0         0 Ping         1         0         0
NORE Ping SSP	Bus RE0         Bus RE0         Slave 0         Slave 1         Slave 2         Slave 3         Slave 4         Slave 5         Slave 6         Slave 7         Slave 8         Slave 9         Slave 10         Slave 11           0         0         Not Present
Frame Timestamp 26 0.000.337.637 ns	Debug status         Frame shape         Control Word         PREOL         Static Synd         Dynamic Sync         PHY (synd)         Dpodel         PAR         NAK         ACK           0x30         43 rows x 2 cols         0x00 0x00 0x00 0x01 0x00 0x70         0         0x0b1         14 (Cze)         0         0 Ping         0         0         0
NORE Ping SSP	Dus REQ         Dus REL         Slave 0         Slave 1         Slave 2         Slave 3         Slave 4         Slave 5         Slave 6         Slave 7         Slave 8         Slave 9         Slave 10         Slave 11           0         0         Not_Present
Frame 27 Timestamp 0.000.342.627 ns	Debug status         Frame shape         Control Word         PRE0         Static Synol         Dynamic Synol         PHY synol         Opcode         PAR         NAK         ACK           0x30         48 rows x 2 cols         0x00 0x00 0x00 0x01 0x00 0x50         0         0x0b1         10 (0xa)         0         0 Prig         0         0         0         0
NORE Ping SSP	Bus RE0         Bus RE0         Slave 0         Slave 1         Slave 2         Slave 3         Slave 4         Slave 5         Slave 6         Slave 7         Slave 8         Slave 9         Slave 10         Slave 11           0         0         Not Present Not Pr

# **Previous items version 1.35**

- solved loss of sync bug after a frame shape change message in the analyzer.

## Previous items version 1.34

- Added binary data export.
- Solved bug while looping in the TG.
- Implemented sample decoding according to SSP
- Solved problem showing sample values in the notebook pages
- Solved magnifying problem in the data view.
- Solved the fact that the history was not initialised when reading a .swa file or stopped recording. So it could be that already at the start of the trace some active data channels were shown while they were configured later in the trace.
- Added preset value in the analyzer which are entered by the device library editor in scriptbuilder. (Dev\_xxxx\_yyyy.xml)

Now it is possible to define preset values for a number of registers in data ports of a device. When a Full, Simplified or Reduced port is defined, the default values will be transferred to the analyzer registers when the device is detected at enumeration. This way the analyzer is aware of the default or preset values so it can decode the samples and show data streams.

+ -	Device list	N	1anufact	urer: LnK			
Device Name	DevID0 De	evID1 D	evID2	DevID3	DevID4	DevID5	]
LnK Amp	0x10 0x1	)1 0>	xC1	0x00	0x01	0x00	◄»
a Ports Registers							Device Icon
+ -	p,	ort list of th	ne selecto	ed device			
Port Nbr Port Na	ame or Function						
1 Speaker	out						
							Port Icon
Port 1 type Simplifi	ed 🔻				(	Reset	]
Register Name	Parameters	Impl	Preset	Value			]
	Enable Channel x BlockGroupControl SamplingIntervalLow		0x00 0x00 0x00 0x00 0x00 0x00				
DPn_SampleCtrl1 DPn_SampleCtrl2 DPn_OffsetCtrl1 DPn_OffsetCtrl2	SamplingIntervalHigh Offset1 Offset2 HStart, HStop		0x00 0x00 0x0F				

#### example device xml file:

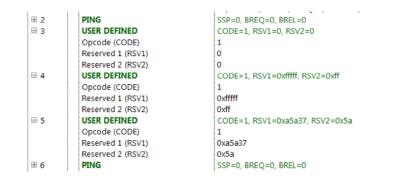
```
<!-- Device/Product Description -->
```

```
<!-- Creation date : 26-9-2016 -->
```

```
<!-- Creator : ScriptBuilder 1.2.10 -->
```

```
<!-- Manufacturer : LnK -->
<Device Name="LnK Amp" DeviceID="0x1001C1000100" IconFile="C:\LnK\SoundWire\libs\spkr1_green_60.gif">
  <Port ID="1" Type="2" Name="Speaker out" IconFile="C:\LnK\SoundWire\libs\spkr1_green_30.gif" >
    <PortReg Name="DPn ChannelEn" Implemented="1" PresetValue="0x00" />
    <PortReg Name="DPn_BlockCtrl2" Implemented="0" PresetValue="0x00" />
    <PortReg Name="DPn_SampleCtrl1" Implemented="1" PresetValue="0x00" />
    <PortReg Name="DPn_SampleCtrl2" Implemented="0" PresetValue="0x00" />
    <PortReg Name="DPn_OffsetCtrl1" Implemented="1" PresetValue="0x00" />
    <PortReg Name="DPn_OffsetCtrl2" Implemented="0" PresetValue="0x00" />
    <PortReg Name="DPn_HCtrl" Implemented="0" PresetValue="0x0F" />
    <PortReg Name="DPn_BlockCtrl3" Implemented="0" PresetValue="0x00" />
    <PortReg Name="DPn_LaneCtrl" Implemented="0" PresetValue="0x00" />
  </Port>
  <Range StartAddress="0x0007" EndAddress="0x0014" Name="Amp Registers set 1" IconFile="" />
  <Range StartAddress="0x0BB8" EndAddress="0x001E" Name="Amp Registers set 2" IconFile="" />
  <Register Address="0x2000" Attribute="RW" Name="Control" >
    <BitField Name="mute" StartBit="0" StopBit="0" />
  </Register>
  <Register Address="0x2001" Attribute="RW" Name="Gain" >
    <BitField Name="Gain" StartBit="0" StopBit="7" />
  </Register>
  <Register Address="0x2002" Attribute="RW" Name="Status" >
    <BitField Name="overheat protection" StartBit="0" StopBit="0" />
    <BitField Name="current protection" StartBit="1" />
  </Register>
</Device>
```

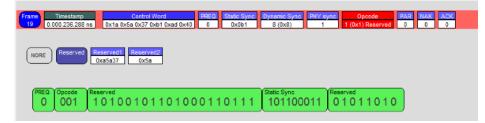
#### Added USER DEFINED opcode + parameters scriptbuilder



#### script view

Frame Timestamp Frame shape NORE Reserved Reserved1 Res	eserved2
	0x00
Frame Timestamp Frame shape NORE Reserved Reserved1 Res	eserved2
	0xff
Frame Timestamp Frame shape NORE Reserved Reserved1 Res	eserved2
	0x5a

#### detailed view



# Previous items version 1.32

- Solved bug in data sample extracting that was introduced in version 1.31
- Solved a bug that showed already a channel configuration in the RAW view at the start of the captured trace.
- Added flow control indication in RAW and DATA view

PREQ	0 00000000 0 <b>RT</b> 00000	15 00000000 00000000				Ch 1	-0-	0:0:471:38	6x A	II None	e <mark>ch 1</mark>			
Opcode (ping) SSP							Frame RxReady TxReady	79	80	81	82	83	84	85
Data sar	-	Sample Length	1. Devic	ce 1 Chan 1	(									
	nples Bit Offset	Sample Length	Flow Control	1	(	Amplitude	Ch1			*****			*****	
Frame	Bit Offset	8	Flow Control RxReady TxReady	Chan 1	(	Amplitude zoom	Ch 1 (1x)	*****	*****					
<b>Frame</b>	Bit Offset	8	Flow Control RxReady TxReady RxReady TxReady	Chan 1 0x00000006 0x0000000e	(		Ch 1 (1x)	*****	*****				****	••••
<b>Frame</b> 79 80	Bit Offset           58           58	8 8 8	Flow Control RxReady TxReady RxReady TxReady	Chan 1 0x00000008 0x0000000e 0x00000015			Ch 1 (1x)			*****	****			••••

# Previous items version 1.31

- Added dithering on sine wave in TG PCM streams
- Solved instabilities while recording in full Rec / Liveview
- Solved bugs in data view
- Solved bugs in Time stamp indication in LiveView recording
- Status information updated when recording / decoding grabbed data

# Previous items version 1.29 - 1.30

- Added support to host the remote control dll + release of DLL + test app 1.3
- Implemented Clock Stop for the TG
- Correct bug in data decoding. (was seen as a glitch in the data view)
- improved the connection phase in software when connecting the hardware

#### Previous items version 1.28

- Solved newly introduced Data decoding bug since version 1.27

#### Previous items version 1.27

- Added PRBS generation in the TG
- Fixed some items in the Block Group Count decoding

# **Previous items version 1.26**

- All views have now the extra info panel
  - Memory viewer has now Component defined registers and areas.
  - Bug solved in showing parity error
- Traffic generator
  - capable to generate a Clock Pause with auto restart
  - has now a 64 MB memory footprint compared to 8MB before
  - a definable number of bits in the source data file.
  - Solved a bug using data files. (Sample size)

- Able to include BRA data

# Previous items version 1.24

- Config:
  - updated HW config panel
  - added PDM monitor
- Traffic Generator:
  - hardware looping in script files
  - extra info in script files
- Analyzer capture: new grabber is implemented
  - time stamp
  - parity check
  - long recordings
  - Live View is available.
  - Full recording has also Live View enabled with only Read/Write messages
- Analyzer views:
  - corrected false synchronisation when swapping between views
  - corrected misalignement of SSP counters
  - added Hide Ping check box to remove uninteresting pings
  - added Go To frame functionality
  - improved Search
  - Filter is operational
  - Data Cfg for manual data stream config
- RAW view:
  - corrected the coloured area for each stream
  - added info on the different fields in the Control Word
- Data view:
  - overview of all streams detected
  - improved visualisations
    - easy zoom
    - easy channel selection
    - SSP indication in the trace
    - Bank indication in the trace
    - Config register access in the trace
    - Frame shape indication in the trace
    - Monitoring of data port registers/parameters in the trace
  - configurable data stream parameters for custom data channel monitoring
  - added extra info panels. Showing actual data at the cursor position. (except Bus)
    - Bus panel: statistics (overview of the complete trace)
    - Memory panel: viewer (soon to be functional, now it is in the Monitor view)
    - Component panel: visualisation of detected components and data connections
    - Ports panel: visualisation of detected ports and showing data connections
    - Port Properties panel: showing all actual data port parameters
    - Samples panel: showing all actual data sample values
    - Registers panel: showing all actual registers of the selected device/data port
    - Streams panel: gives an overview of used ports for all devices
    - Scope panel: has an 8 channel analog oscilloscope to show the audio data
    - FFT panel: contains an 8 channel FFT analysis

- Export:
  - Message export
    - Frame selection
    - Device selection
    - Opcode selection
    - Detailed message export to CSV file
    - Control Word export to CSV file
    - Synthetic view export to HTML file. (browser and printing)
- Data export
  - Frame selection
  - Stream selection (for all active data ports on each device)
  - Channel selection
  - Frame, bit slot offset, channel, Sample value (hex); to CSV file
  - Frame, bit slot offset, channel, Sample value (decimal); to CSV file
  - Sample value (hex); to CSV file
  - Sample value (decimal); to CSV file

# Config

# updated HW config panel

SoundWire Analyzer Ver. 1.24 08-01-2016	_		x
File Help  Configure REC CLEAR LiveView  O.000.000.000  File Presets HW Config Platform Data Cfa Triager GPI Config Filter PDM monitor	Traffic Generator	Script RAW MSG Trace RAW MSG DATA MONITOR , 0.000.000.000	]
Clock configuration - Information 3.300 (V) Clock Level 50 Ohm Bypass Bus Clock Clock Source Internal • Auxilary Clock 3.072 • MHz Clock Output Bus Clock •	Phy interface 1.800 (V) Phy Level Data Bus Hold Clock Data 0 Data 1 Data 1 Data 3 Data 3 Data 3 Data 3 Data 5 Data 5	GPI - PDM - Trigger interface 1.800 (V) GPI Level GPI - input GPI 2 - input GPI 2 - input GPI 4 - input GPI 5 - input	11 ×
Reset HW IP version: Grab	ber 6, Analyzer 1, Global version 1		•

# added PDM monitor

0.000.000.000         +         0.098.432.25           Frames         Frames           Presets         HW Confia         Platform           Data Cfg         •         Dev1 Port1         •           Dev3 Port1         •         Dev3 Port1         •         Dev3 Port1	SoundWire Analyzer Ver. 1.24 08-01-2016 - C:\L	nK\SoundWire\scripts\DataViewTest2.swa		
Configure       REC       CLEAR       LiveView       Script       PLAY       STOP       Script       RAW       MSG       DATA       MONTH         0.000.000.000       +       +       *       *       Trace       RAW       MSG       DATA       MONTH         0.000.000.000       +       +       * </th <th>ile Help</th> <th></th> <th></th> <th></th>	ile Help			
Biock Croup Count       Monitor       BCKO         2       •       Channels       1 2 3 4 5 5 7 8         VILLEN       4       +       Interval       4         HStop 1       •       PDM OUT 1       •         Block Offset       0       •       PDM OUT 2         Block Offset       0       •       PDM OUT 3         •       •       •       •         •       •       •       •         •       •       •       •         •       •       •       •         •       •       •       •         •       •       •       •         •       •       •       •         •       •       •       •         •       •       •       •         •       •       •       •         •       •       •       •         •       •       •       •         •       •       •       •         •       •       •       •         •       •       •       •         •       •       •       •	Configure REC CLEAR	LiveView Script PLAY	STOP Script RAW	MSG
Data Cfg       Dev 1 Port1       Dev 2 Port1       Dev 3 Port2       Dev 11 P         Filter       PDM monitor       Biock Packing Mode       Biock Group Count       Bi	0.000.000.000			
Block per Port       Monitor       BCK0         Block Group Count       Monitor       BCK0         2       Channels       1 2 3 4 5 6 7 8         Interval       4       PDM OUT 1         HStop       1 •       Import from selection         Block Offset       0       BCK0	Data Cfg Trigger GPI Con			
HStart 1 • Import from selection • PDM OUT 1 HStop 1 • Import from selection • PDM OUT 2 Block Offset 0 • BCK0	Block group Count 2 Channels 1 2 3 4 5 6 7 8	Monitor	BCKI 4 3 2 1	
	HStart 1 • HStop 1 • Block Offset 0	Import from selection	PDM OUT 2     PDM OUT 3     PDM OUT 4     BCKO	

# **Traffic Generator**

# hardware looping in script files

# Definition in Scriptbuilder

	CONTROLL CONTREES	DA-1, DI-1, DULL-0, CILL-0, CILL-0, CIU-0, CIT-0, CII
± 31	CONFIGURE CHANNELS	DA=3, DP=1, BSEL=0, Ch1=0, Ch2=0, Ch3=0, Ch4=0, C
🗏 32	Loop Begin	CNT=10
	Repeat (CNT)	10
± 33	Frame Start	1000, ROW=0, COL=0, PREQ=0, SS=0xB1, PHY=0, DS=
± 34	PING	BREQ=0, SSP=1, BREL=0
🖽 35	Loop End	
🖽 36	Comment	Stop the TG stream
± 37	Frame Start	1, ROW=0, COL=0, PREQ=0, SS=0xB1, PHY=0, DS=Vali

#### Appearance in the script view

LOOP BEGIN Loops = 11										
REPEAT 1000										
	me shape 👔 🌔	NORE Ping	SSP	BUS REQ BUS REL	Slave 0	Slave 1	Slave 2	Slave 3	Slave 4	Slave 5
122 0.000.476.532 ns 48 ro	ws x 2 cols			0 0	Not_Present	Not_Present	Not_Present	Not_Present	Not_Present	Not_Present
Slave 6 Slave 7	Slave 8	Slave 9	Slave 10	Slave 11						
Not_Present Not_Present	Not_Present	Not_Present	Not_Present	Not_Present						
LOOPEND										

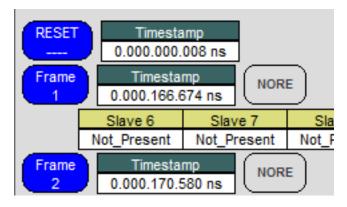
# extra info in script files

Creation date : 18/11/2015								
Modification date : 18/11/2015								
Test6. A simple test for the Message and f	rame grabber							
One Bus_reset at the start and no frame sh	ape changes.							
SyncLoss Ignore= 2								
frame shape 96x2 One Write message to test	grabber live vi	lew part						
Initialization Frequency BusLevel BusHold VCD output 12288000 Hz 1.800 V On test6.vcd								
Timestamp 0.000.000.000 ns								
Device enumeration (SlvStat not reglecting								
Begin Macro DEVICE ENUMERATION (DA=1, GID=0	, 0x11, 0x01, 0x	c1, 0x00, 0x0	L, 0x66)					
20								
Tenestama Ecomo abase	ng Bus REQ Bus	REL Slave 0	Slave 1	Slave 2	Slave 3	Slave 4	Slave 5	Slave 6
0 0.000.000.000 ns 60 rows x 2 cols	0 0		Not_Present	Not_Present	Not_Present	Not_Present	Not_Present	Not_Prese
Slave 7 Slave 8 Slave 9 Slave 10 Not_Present Not_Present Not_Present Not_Present	Slave 11 Not_Present							
Not_Present Not_Present Not_Present Not_Present LOOP BEGN cops = 50001								
	Not_Present	<pre>xba, 0x12, 0x3</pre>	4, 0xBC)					
Hot Present Not_Present Not_Present Not_Present LOOP EEGN coos = 50001 Ind of Macro DEVICE ENUMERATION Segin Macro DEVICE ENUMERATION(DA=2, GID=0	Not_Present			vas Data	SUB S	CP. DevNumber	Device Numb	er Group
Hot Present         Not_Present         Not_Present         Not_Present           LOOP EEGON         Coops = 50001         Coops = 50001         Coops = 50001           End of Macro DEVICE ENUMERATION         DEVICE ENUMERATION         Coops = 50001           Segin Macro DEVICE ENUMERATION [DA=2, GID=0         France backco         Coops = 50001           Topology         France backco         Coops = 50001         End	Not_Present	cba, 0x12, 0x3 Device Address 0 (0x0)	4, 0xBC) RegisterAddro 0x0046	ias Data 0x01	SCP St Generic	CP_DevNumber 0x01	Device Numb	er Group 0 (0x0
Not_Present         Not_Present         Not_Present           LOOP EEGN         coos = 50001         coos = 50001           Ind of Macro DEVICE ENUMERATION         eqin Macro DEVICE ENUMERATION (DA=2, GID=0)           Imposition DEVICE ENUMERATION (DA=2, GID=0)         Francisher	Not_Present	Device Address	RegisterAddre					
NotPresent NotPresent NotPresent NotPresent LOOP EGGN accoss = 50001 and of Macro DEVICE ENUMERATION degin Macro DEVICE ENUMERATION (DA=2, GID=0 Trans 10007.640 ns 6 0000 ACK EN 0 000097.640 ns 6 0000 ACK EN Device enumeration (SivStat not reglecting	Not_Present , 0x12, 0x02, 0x UMERATION Write any devices)	Device Address 0 (0x0)	RegisterAddre 0x0046					
Not_Present         Not_Present         Not_Present         Not_Present           LOOP EGGN         coops = 50001         ENLOYE	Not_Present , 0x12, 0x02, 0x UMERATION Write any devices)	Device Address 0 (0x0)	RegisterAddre 0x0046					
Not_Present         Not_Present         Not_Present         Not_Present           LOOP BEGH Coops = 50001         Coops = 50001         Coops = 50001         Coops = 50001           Ind of Macro DEVICE ENUMERATION         Emms Shadow 60 rows x2 cols         ACK         Emms Shadow 60 rows x2 cols           20         0 000.097/E40 ns         60 rows x2 cols         ACK         Emergence 1000000000000000000000000000000000000	Not_Present , Ox12, Ox02, Ox NUMERATION any devices) , Ox11, Ox01, Ox	Device Address 0 (0x0) xc1, 0x00, 0x0	RegisterAddro 0x0046	0×01	Generic	0x01	1 (0x1)	0 (0×0
Not_Present         Not_Present         Not_Present         Not_Present           LOOP EGON         Coops = 50001         Coops = 50001         Coops = 50001           Ind of Macro DEVICE ENUMERATION (DA=2, GID=0         Imposing         GON00.097.840 ns         Coops = 50001           200 0000.007.840 ns         GOTOWS X2 Coops         ACK         Provide the second seco	Not_Present , 0x12, 0x02, 0x UMERATION Write any devices)	Dovice Address 0 (0x0) xc1, 0x00, 0x0 REL Slave 0	RegisterAddre 0x0046 L, 0x66) Slave 1			0x01 Slave 4	1 (0x1) Slave 5	
Not_Present         Not_Present         Not_Present         Not_Present           LOOPEGH         Coope 50001         Ind of Macro         DEVICE         ENUMERATION           Segin         Macro         DEVICE         ENUMERATION         DEVICE         ENUMERATION           Segin         Macro         DEVICE         ENUMERATION         DEVICE         ENUMERATION           20         0.000.097.640.0         60 rows x2 cols         AcK         ENUMERATION (DA=2, GID=0)           20:00         0.000.097.640.0         60 rows x2 cols         AcK         ENUMERATION (DA=1, GID=0)           Device         ENUMERATION (DA=1, GID=0)         ENUMERATION (DA=1, GID=0)         EEEAT         14           Terme         Troostemp         Frame shape         None         P	Not_Present           , 0x12, 0x02, 0x           summarized           any devices           , 0x11, 0x01, 0x	Dovice Address 0 (0x0) xc1, 0x00, 0x0 REL Slave 0	RegisterAddre 0x0046 L, 0x66) Slave 1	0x01 Slave 2	Generic Slave 3	0x01 Slave 4	1 (0x1) Slave 5	0 (0x0 Slave 6
Not_Present         Not_Present         Not_Present         Not_Present           LOOP BEGH         COOP SCOPE         COOP SCOPE         Not_Present         Not_Present           Ind of Macro         DEVICE         ENUMERATION         Enume Shape         Not_Present           legin         Macro         DEVICE         ENUMERATION         ACK         Enume Shape           20         0.000.097.640 ns         60 rows x2 cols         ACK         Enume Shape           legin         Macro         DEVICE         ENUMERATION (DA=1, GID=0)           report         ERAT         Frame Shape         NORE           0.000.02.522 ns         60 rows x2 cols         NORE         R	Not_Present           , 0x12, 0x02, 0x           NUMERATION           any devices)           , 0x11, 0x01, 0x           no           Bus RE0           Bus RE1	Dovice Address 0 (0x0) xc1, 0x00, 0x0 REL Slave 0	RegisterAddre 0x0046 L, 0x66) Slave 1	0x01 Slave 2	Generic Slave 3	0x01 Slave 4	1 (0x1) Slave 5	0 (0x0 Slave 6
Not_Present         Not_Present         Not_Present         Not_Present         Not_Present           LOOP BEGH	Not_Present           , 0x12, 0x02, 0x           NUMERATION           any devices)           , 0x11, 0x01, 0x           no           Bus RE0           Bus RE1	Dovice Address 0 (0x0) xc1, 0x00, 0x0 REL Slave 0	RegisterAddre 0x0046 L, 0x66) Slave 1	0x01 Slave 2	Generic Slave 3	0x01 Slave 4	1 (0x1) Slave 5	0 (0×0 Slave 6

# **Analyzer capture**

new grabber is implemented

#### time stamp



# parity check

long recordings

Live View is available.

#### **Full recording**

has also Live View enabled with only Read/Write messages

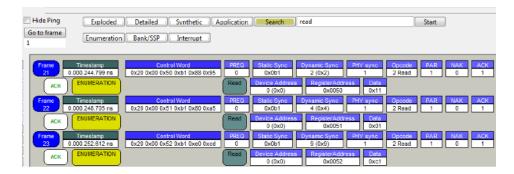
# **Analyzer views**

corrected false synchronisation when swapping between views corrected misalignment of SSP counters

added Hide Ping check box to remove uninteresting pings added Go To frame functionality



#### Improved Search



# Filter is operational

	Hide Ping Explode	Application Search	read	Start
Ping SSP Status Change	Frame 26 Timestamp 0.000.264.330 ns	Read Device Addres 0 (0x0)	0x0055 0x66	
Write Read V	Frame Timestamp 28 0.000.272.143 ns Frame Timestamp	Read Device Addres 0 (0x0) Read Device Addres	0x0050 0x12 s RegisterAddress Data	
Devices	29 0.000.276.049 ns Frame Timestamp 30 0.000.279.955 ns	0 (0x0)           Read           0 (0x0)           0 (0x0)	0x0051         0x02           s         RegisterAddress         Data           0x0052         0xba	
3 4 5	Frame Timestamp 31 0.000.283.862 ns Frame Timestamp	Read Device Addres 0 (0x0) Read Device Addres	0x0053 0x12	
6     7     8       9     10     11	32 0.000.287.768 ns Frame 33 0.000.291.674 ns	0 (0x0)           Read           0 (0x0)           0 (0x0)	0x0054 0x34	
GroupId 12 GroupId 13	Frame Timestamp 35 0.000.299.487 ns Frame Timestamp	Read Device Addres 0 (0x0) Read Device Addres	0x0050 0xab	
Monitor Broadcast	36 Frame 37 0.000.303.393 ns Timestamp 0.000.307.299 ns	Read 0 (0x0) Read 0 (0x0)	0x0051 0xcd	
Register Area	Frame 38 0.000.311.205 ns	Read Device Addres 0 (0x0)	RegisterAddress Data 0x0053 0x98	
Data 0 -	Frame Timestamp 39 0.000.315.112 ns Frame Timestamp	Read Device Addres 0 (0x0) Read Device Addres	0x0054 0x76 s RegisterAddress Data	
NAK	40 0.000.319.018 ns Frame 42 0.000.326.830 ns	0 (0x0)           Read           0 (0x0)           0 (0x0)	0x0055         0x54           s         RegisterAddress         Data           0x0050         0xa1	
PREQ	Frame Timestamp 43 0.000.330.737 ns Frame Timestamp	Read Device Addres 0 (0x0) Read Device Addres	0x0051 0xb2 s RegisterAddress Data	
Exclude Off	44 0.000.334.643 ns Frame 45 0.000.338.549 ns	0 (0x0)           Read           0 (0x0)           0 (0x0)	0x0052         0xc3           s         RegisterAddress         Data           0x0053         0xd4	
	Frame Timestamp 46 0.000.342.455 ns Frame Timestamp	Read Device Addres 0 (0x0) Read Device Addres	0x0054 0xe5	
	47 0.000.346.362 ns	0 (0x0)	0x0055 0xf6	

# Data Cfg for manual data stream config

Presets Data Cfq Go to frame Over Filter 1	Data Cfg         Dev1 Port1         Dev2 Port1         Dev3 Port1         Dev3 Port1         Port1         Port1           rview         Data Cfg         Dev1 Port1         Dev3 Port1         Dev3 Port2         Dev11 Port1         Port1
Block per Port  Block Group Count  Slav  Slav  NoRE  Slav  NorE  Provide Slav  Slav  Not Provide Slav  Slav	

# **RAW view**

corrected the coloured area for each stream added info on the different fields in the Control Word

		8 rows 48 (	Control Word 0x00 0x00 0xb1		0 Static Sy 0x0b1	nc Dynamic 14 (0				0 0
			ave 0 Slave 1	Slave 2	Slave 3	Slave 4	Slave 5	Slave 6	Slave 7	Slave 8
NORE	0		Present Not_Prese		Not_Present	Not_Present	Not_Present	Not_Present	Not_Present	Not_Present
Slav	ve 9 Slave 10	Slave 11								
Not_P		Not_Present								
PREQ	0 7									
PHEQ	00000000									
Opcode (ping)	000000000									
	00000000									
SSP BREQ	000000000000000000000000000000000000000									
BREL	00010000									
Slave Stat 11 (0)	000000000									
Slave Stat 10	00000000									
(0) Slave Stat 9	000000000									
(0)	00000000									
Slave Stat 8 (0)	000000000000000000000000000000000000000									
Slave Stat 7 (0)	01110000									
Slave Stat 6	00100000									
(0) Slave Stat 5	01000000									
(0)	00000000									
Slave Stat 4 (0)	00000000									
(0)	10000000									
	000000000000000000000000000000000000000									
Stat Sync	10000000									
,	000000000									
	10000000									
Phy Sync	10000000									
Slave Stat 3 (0)	000000000									
Slave Stat 2	00000000									
(0) Slave Stat 1	000000000000000000000000000000000000000									
(0)	00000000									
Slave Stat 0 (0)	0000000									
	10000000									
Dyn Sync	10000000									
Parity	000000000000000000000000000000000000000									
NAK	00001000									
ACK	00000000									
	376 383									

# Data view

# overview of all streams detected

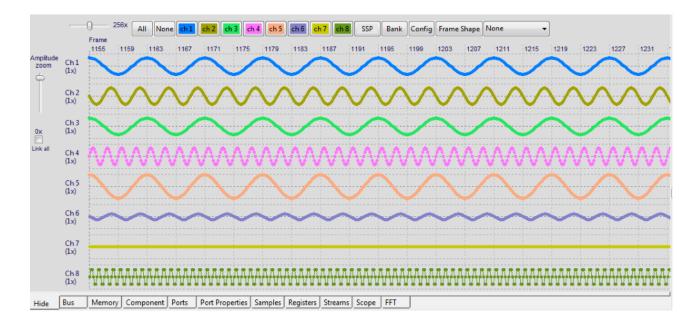
	Overview	Data	Cfg Data Cfg		ev 1 Port Dev 1 P		Dev 2 Port 1 Dev 2 Por		ev 3 Port 3 Dev 3 Po		Dev 3 Po Dev 3			1 Port 1 11 Port						<b>▼</b>	
	_0_		2048	¢																	
ata Cfg	Frame 161	1036	1150	1177	1205	1233 1	261 128	9 1317	1345	1373	1401	1429	1457	1485	1513	1541	1569	1597	1625	1653	1681
ev 1 Port 1	_	-	_	1					<b>.</b>		-	-									
ev 2 Port 1 ev 3 Port 1		1	-				-														
v 3 Port 2																					
ev 11 Port 1																					
de Bus	Memo		ompone	nt Por	ts Po	rt Properti	es Samp	es Regi	ters Str	eams S	cope	FFT			_	_					_

# improved visualisations

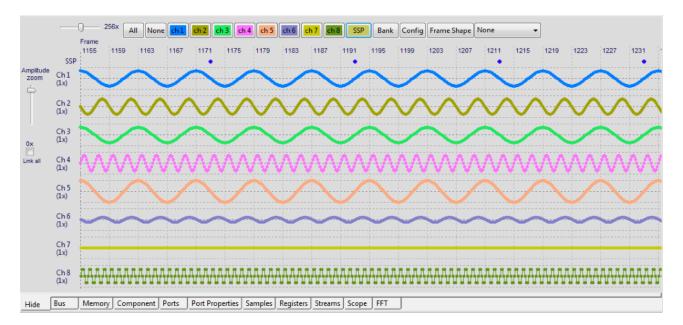
#### easy zoom

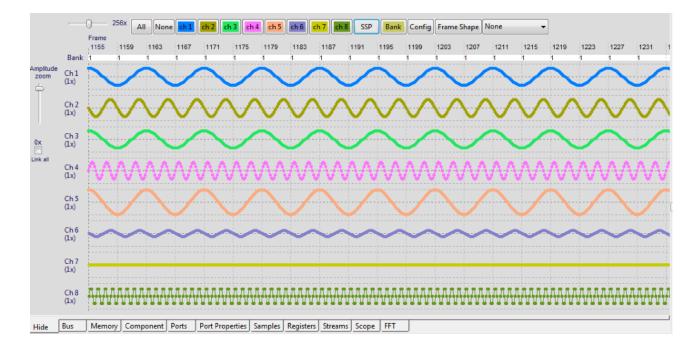
		0-	512x	AIL	None 🕻	h1 ch2	ch 3	ch4
Amplitude		Frame 161	380	599	817	1036	1130	1137
zoom	Ch 1 (Lx)							
T	Ch 2 (Lx)							
	Ch 3 (1x)							
0x	Ch 4 (1x)							
Link all	Ch 5							

# easy channel selection



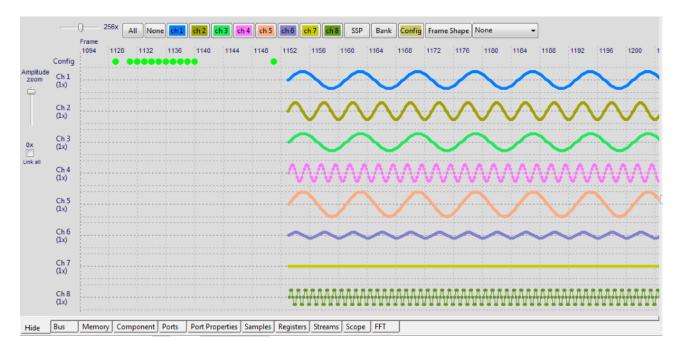
#### SSP indication in the trace





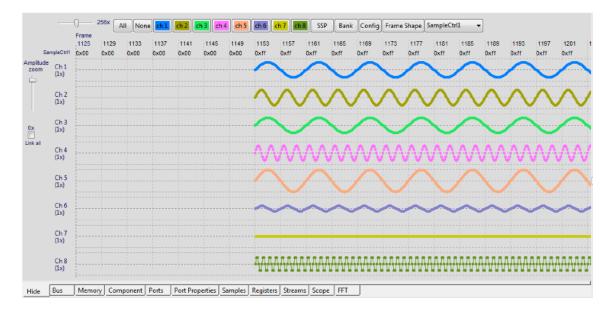
#### Bank indication in the trace

# Config register access in the trace



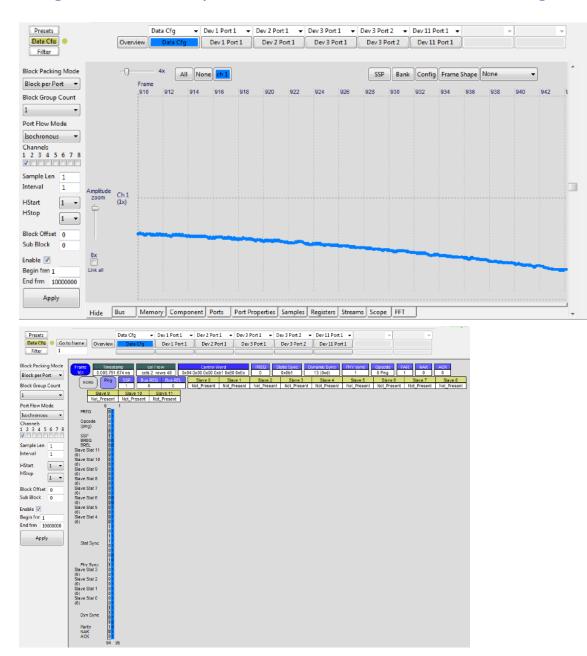
#### Frame shape indication in the trace





#### Monitoring of data port registers/parameters in the trace

#### configurable data stream parameters for custom data channel monitoring



# Added extra info panels.

Showing actual data at the cursor position. (except Bus)

Bus panel: statistics (overview of the complete trace)

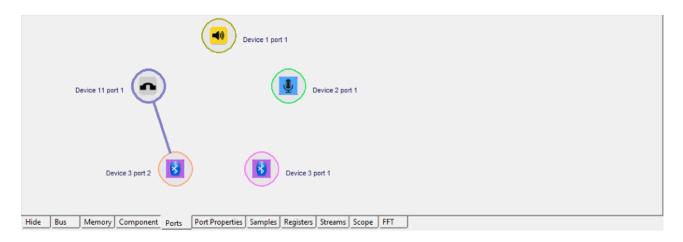
	Lost Frames	Frames	Sync lost	Paritiy error	NAK	ACK	No Response	Ping	Write	Read	Invalid Opcode
Total	0	1876			0	153	1723	1728	126	24	0
Device 0					0	28	28		4	24	
Device 1					0	28	28		28	0	
Device 2					0	22	22		22	0	
Device 3					0	47	47		47	0	
Device 4					0	0	0		0	0	
Device 5					0	0	0		0	0	
Device 6					0	0	0		0	0	
Device 7					0	0	0		0	0	
Device 8					0	0	0		0	0	
Device 9					0	0	0		0	0	
Device 10					0	0	0		0	0	
Device 11					0	23	23		23	0	
Group ID 12					0	0	0		0	0	
Group ID 13					0	0	0		0	0	
Monitor					0	0	0		0	0	
Broadcast					0	7	7		4	0	

# Memory panel: viewer (soon to be functional, now it is in the Monitor view) Component panel: visualisation of detected components and data connections



MASTER	Link Amp 0 1 2 3 4 5 6 7 8 9 1011 12 13 14	Ozba         2           Manufact:         02ba         2           Vingue id:         1234         124           Dirigue id:         0         1         2	Cdef         3           Manufact:         cdef           Monufact:         s876           Onique id:         00           Bluetooth IF         0           0 1 2 3 4 5 6 7 8 9 1011 12 13 14	4 Not Touched	5 Not Touched
Not Touched	Not Touched	Not Touched	Not Touched	Not Touched	0 1 2 3 4 5 6 7 8 9 1011121314 Audio Codec Manufact : b2c3 Product : d4e5 Unique 16:00 b2c3 11

# Ports panel: visualisation of detected ports and showing data connections



#### **Port Properties panel: showing all actual data port parameters**

		Comm	on	Bank 0	Bar	nk 1			Comm	ient
l	Used Bank	1					Indicated Ba	ank (1) ^ Ir	verted Ba	ank (0) = Used Bank (1)
Inv	verted Bank	0								
Por	rt Data Mode	0					Normal ope	ration		
Por	rt Flow Mode	0					Normal			
BPT	Payload Type						Only availal	ole on data	port 0	
w	ord Length	24 bit(s)								
Block	Packing Mod	e	0		0		Block per P	ort		
Block @	Grouping Cont	trol	1		1		Used Block	GroupCou	nt = 1	
Sam	pling Interval		1	(0x0001)	512 (0x020	00)				
	Offset		0>	(0000	0x0000		Offset = 0 (	(0000x0)		
	HStart		0		3					
	HStop		0		10					
	HWidth		1		8					
Si	ample Rate	-	-		-		info not ava	ilable		
Cha	annel Enable				87654321		Chan 8>	Chan 1		
Cha	nnel Prepare	87654321					Chan 8>	Chan 1		
Ch	annel Ready						Chan 8>	Chan 1		
	Lane		0		0					
Hide	Bus Men	nory Compone	nt Ports	Port Properties	Samples	Registers	Streams	Scope	FFT	

# Samples panel: showing all actual data sample values

F	rame	Cha	nnel	Bit Offs	et Sample L	ength	Sample Val	ue		
1292		1	4	2	24	0	x00401370			
1292		2	9	0	24	0	x00a56209			
1292		3	1	38	24	0	x00401370			
1292		4	1	86	24	0	×00000000			
1292		5	2	34	24	0	x005a8279			
1292		6	2	82	24	0	x00dfd90e			
1292		7	3	30	24	0	×00000000			
1292		8	3	78	24	0	x00000000			
1292		1	5	54	24	0	x00372a06			
1292		2	6	02	24	0	x00a8787d			
1292		3	6	50	24	0	x00372a06			
1292		4	6	98	24	0	x00d2b105			
1292		5	7	46	24	0	x004debe4			
1292		6	7	94	24	0	x00e0f184			
1292		7	8	42	24	0	x00fe6474			
1292		8	8	90	24	0	x004e7a06			
1292		1	1	066	24	0	x002d4efb			
1292		2	1	114	24	0	x00b185fa			
Hide	Bus	Memory	Compone	nt Ports	Port Properties	Sample	Registers	Streams	Scope	FFT

# Registers panel: showing all actual registers of the selected device/data port

	Common	Bank 0	Bank 1	Comment
IntStat 0	) - 0x00 - 0b00000000			
IntClear 0	0 - 0x00 - 0b0000000			
IntLastAccessed 0	) - 0x00 - 0b00000000			
IntMask 0	) - 0x00 - 0b0000000			
PortCtrl 0	) - 0x00 - 0b0000000			
BlockCtrl1 2	23 - 0x17 - 0b00010111			
Prepare_Status 0	) - 0x00 - 0b00000000			
Prepare_Ctrl 2	255 - 0xff - 0b11111111			
ChannelEn		0 - 0x00 - 0b0000000	255 - 0xff - 0b11111111	
BlockCtrl2		0 - 0x00 - 0b0000000	0 - 0x00 - 0b0000000	
SampleCtrl1		0 - 0x00 - 0b0000000	255 - 0xff - 0b11111111	
SampleCtrl2		0 - 0x00 - 0b00000000	1 - 0x01 - 0b00000001	
OffsetCtrl1		0 - 0x00 - 0b0000000	0 - 0x00 - 0b0000000	
OffsetCtrl2		0 - 0x00 - 0b0000000	0 - 0x00 - 0b0000000	
HCtrl		0 - 0x00 - 0b0000000	58 - 0x3a - 0b00111010	
BlockCtrl3		0 - 0x00 - 0b0000000	0 - 0x00 - 0b0000000	
LaneCtrl		0 - 0x00 - 0b00000000	0 - 0x00 - 0b0000000	

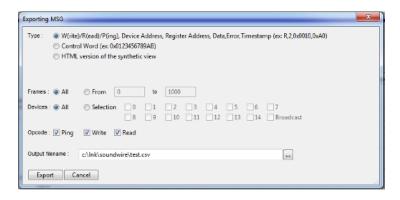
 Hide
 Bus
 Memory
 Component
 Ports
 Port Properties
 Samples
 Registers
 Streams
 Scope
 FFT

# Streams panel: gives an overview of used ports for all devices

	Devic	e Alias		DP 0	DP 1	DP 2	DP 3	DP 4	DP 5	DP 6	DP 7	DP 8	DP 9	DP 10	DP 11	DP 12	DP 13	DP 14
1					1													
2	LnK Amp																	
3	Test Micropho	ne			3	4												
4	Bluetooth IF																	
5																		
6																		
7																		
8																		
9																		
10																		
11					4													
Hide	Bus M	emory	Con	nponent	Ports	Port	Propert	ies Sa	mples	Registe	rs Stre	ams S	cope	FFT				

# **Export**

Message export



Frame selection Device selection Opcode selection

Detailed message export to CSV file

**Control Word export to CSV file** 

Synthetic view export to HTML file. (browser and printing)

#### Data export

Exportin	g Data	-								-		x
Type :	© C ⊙ C	SV out SV out	tput: frame, tput: frame, tput: value(l tput: value(d	bit slot ( nex);								
Frames	: 🖲 A	Ш	From		to							
Stream	[	Dev 1	Port 1	•								
Channe	el	all		-								
Output	filename	e: [	c:\lnk\soun	dwire\te	st.csv							
	ort	Car										

Frame selection Stream selection (for all active data ports on each device) Channel selection

Frame, bit slot offset, channel, Sample value (hex); to CSV file Frame, bit slot offset, channel, Sample value (decimal); to CSV file Sample value (hex); to CSV file Sample value (decimal); to CSV file