

[LAP-321000U-A] PC Based Logic Analyzer



**200 MHz & I2C/SPI/UART/CAN/Miler/7-Segment LED/
1-Wire/HDQ/SSI/Microwire/Manchester
32 Channels PC Based Logic Analyzer with 1M Bit Memory per Channel**

Feature:

- 200 MHz 32 Channels
- Decode bus of I2C Bus protocols
- Decode bus of UART (RS232 & RS485) protocols
- Decode bus of SPI protocols
- Decode bus of CAN protocols
- Decode bus of Miler protocols
- Decode bus of 7-Segment protocols
- Decode bus of 1-Wire protocols
- Decode bus of HDQ protocols
- Decode bus of Microwire protocols
- Decode bus of SSI protocols
- Decode bus of Manchester protocols
- USB 2.0 (1.1) Power Connection
- 1M Bit Memory per Channel
- Data Compression *255 depending on data format
- Advance Signal qualifier function
- Advance package of protocols listing function
- Advance trigger out pin to hook up other instruments such as oscilloscope working as MSO
- Advance status analysis to view by frequency point or signal changed point
- Advance export function to list of protocols packages
- Advance to decode all protocols decoding functions are provided at the same time

[ODM-16128U] PC Based Logic Analyzer



200 MHz & I2C/SPI/UART/7-Segment LED 16Channels PC Based Logic Analyzer with 128K Bit Memory per channel

Feature:

- 200 MHz 16 Channels
- Decode bus of I2C Bus protocols
- Decode bus of UART (RS232 & RS485) protocols
- Decode bus of SPI protocols
- Decode bus of 7-Segment LED protocols
- USB 2.0 (1.1) Power Connection
- 128K Bit Memory per Channel
- Data Compression *255 depending on data format
- Advance Signal qualifier function
- Advance package of protocols listing function
- Advance trigger out pin to hook up other instruments such as oscilloscope working as MSO
- Advance status analysis to view by frequency point or signal changed point
- Advance export function to list of protocols packages
- Advance to decode all protocols decoding functions are provided at the same time

◆ Contents:

- Main Machine
- USB Cable
- Probe*36 pieces
- Testing Cable (16lines*1, 8 lines*2, 2 lines*1, 1line*1)
- Installation Guide
- Software CD

Product model		ODM-16128U	ODM-321000U-A
Operating System		Windows	
		98SE/ME/2000/KP/Vista	
Interface		USB2.0(1,1)	
Sample Rate	Internal Clock (Timing Mode)	100Hz~200MHz	100Hz~200MHz
	External Clock (State Mode)	100MHz	100MHz
Threshold Voltages	Bandwidth	75MHz	75MHz
	Working Range	-6V~+6V	-6V~+6V
	Accuracy	±0.1V	±0.1V
Memory	Memory	4Mbits	32Mbits
	Depth (Per Channel)	128Kbits (Max 32Mbits for Compression)	1Mbits (Max 255Mbits for Compression)
Trigger	Condition	Pattern/Edge	Pattern/Edge
	Trigger Channel	16CH	32CH
	Pre/Post Trigger	YES	YES
	Trigger Level	1 Level	1 Level
	Trigger Count	1~65535	1~65535
Software Functions	Operating Interface Language	Chinese (Simplified/Traditional) English	Chinese (Simplified/Traditional) English
	Time Base Range	5ps~10Ms	5ps~10Ms
	Vertical Sizing	1~5.5	1~5.5
	Enable Delay	YES	YES
	Data Compression	Max. 32Mbits	Max. 255Mbits
	Width Display	YES	YES
	Max Trigger Page	128~8192 Pages	16~8192 Pages
	Trigger Delay	YES	YES
	Infinite Increase Spacer Bar	YES	YES
	Automatic Zoom In of Spacer Bar	YES	YES
	Automatic Software Upgrade	YES	YES
	Data Range Selectable	YES	YES
	Statistic	YES	YES
	Bus Inquiry and Counter	YES	YES
	Enable Bar	YES	YES
Bus Analyzer Module Plug-In	YES	YES	
Bus package list	YES	YES	
Phase Errors		<1.5ns	
Power	Power	USB	
	Power at rest	1W	
	Power at work	2W	
Maximum Input Voltage		±30V	
Impedance		500K Ω / 10pF	
Safety Certification		FCC / CE / WEEE / RoHS	
Product Dimension		130mm*100mm*30mm	

Package Contents

Analyzer (130mm x 100mm x 30mm / 175g)	1	USB cable	1
16/32 channel testing cable package (25cm)	1 Pack 8pins*2 / 2pins*1 / 1pin*1 1 Pack 10pins*V / 8pins*W / 2pins*V / 1pin*1	Software / Documentation CD	1
Probes (test grabbers)	1 Pack 20 pieces/Package 1 Pack 36 pieces/Package	Installation Guide	1



Synch Parameter Setting
Moving the rolling bar, the package list and waveform will display synchronously.

Set Trigger Condition
User defined trigger condition and setting mode in channel , serial signal and parallel signal.

Data Statictis Funtion
Positive Period/ Full Period /or user defined condition.

Package List
The packages not only display with waveform but also are collected to display synchronously in vertical version.

The Specification of Max Time and Min Time

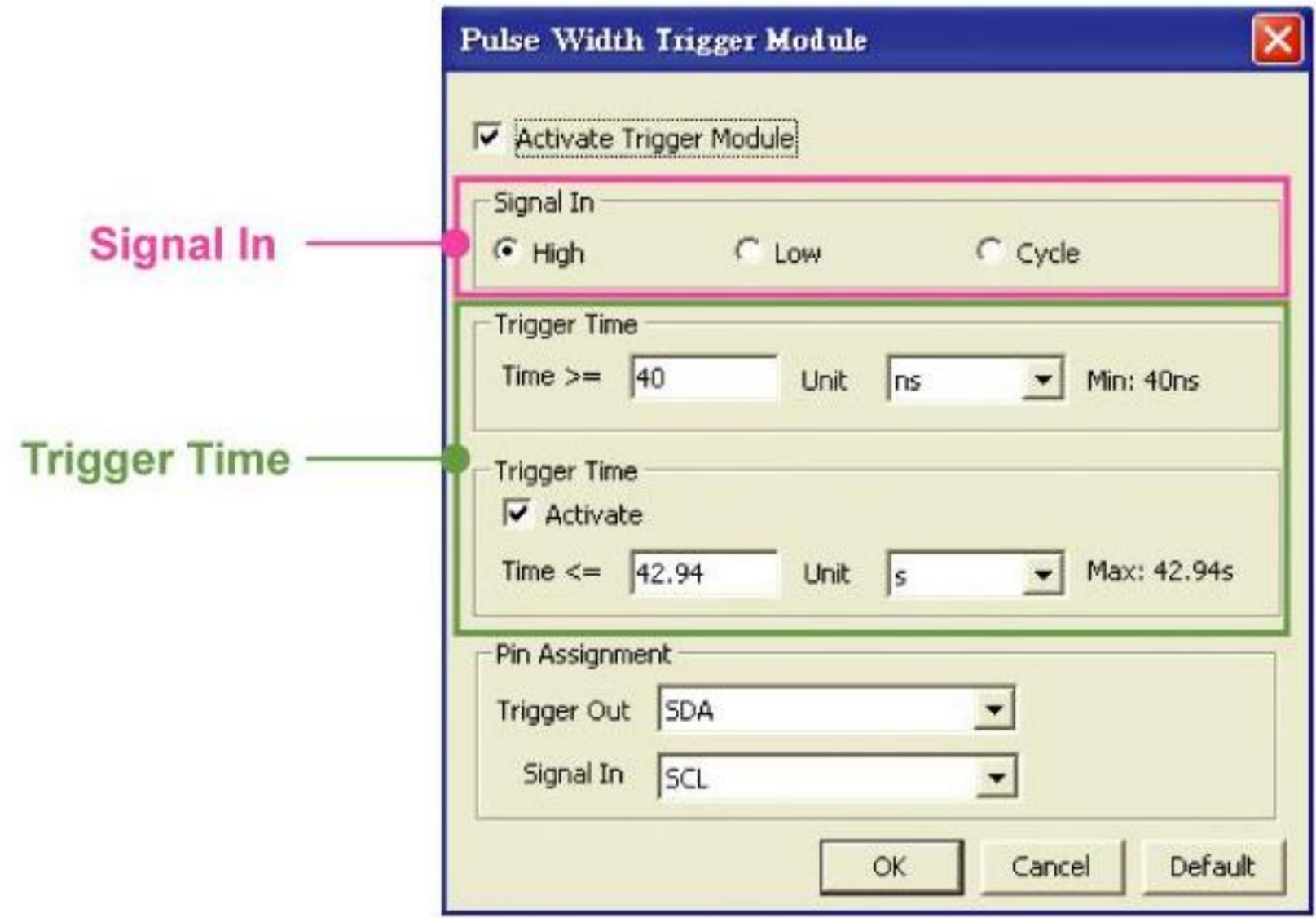
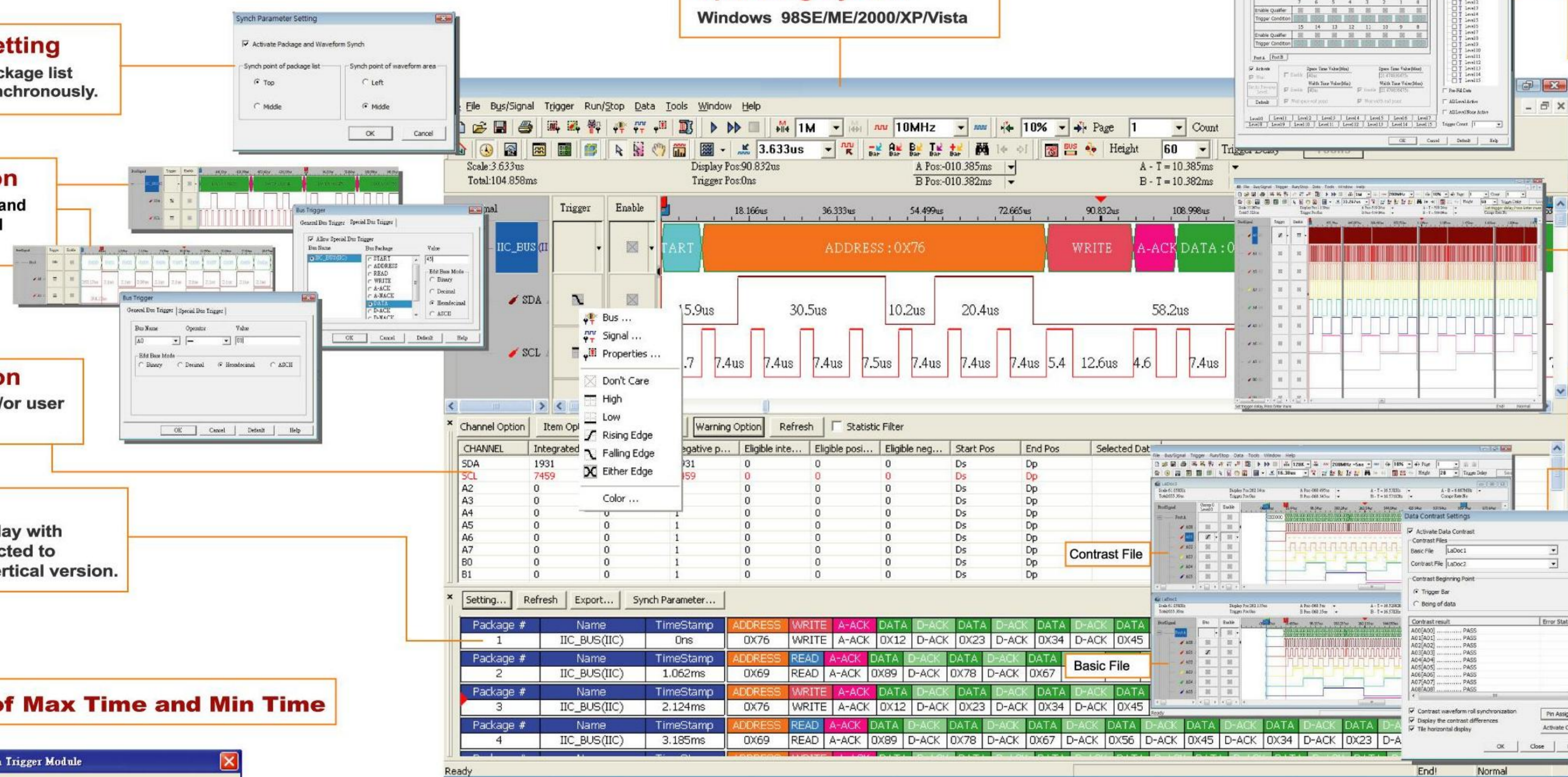
Operating System
Windows 98SE/ME/2000/XP/Vista

Multi-Level Triggering
B-series provides 3 different kinds of triggering function: multi-level triggering, pulse width triggering and space time triggering.

Filter
Captured data may be filtered to economise on capture memory. This allows the user to store only the data they need.

Data Contrast
According to the acquiring data, the contrast function will analyze the contrast result and indicate the different between each other on the waveform and package list.

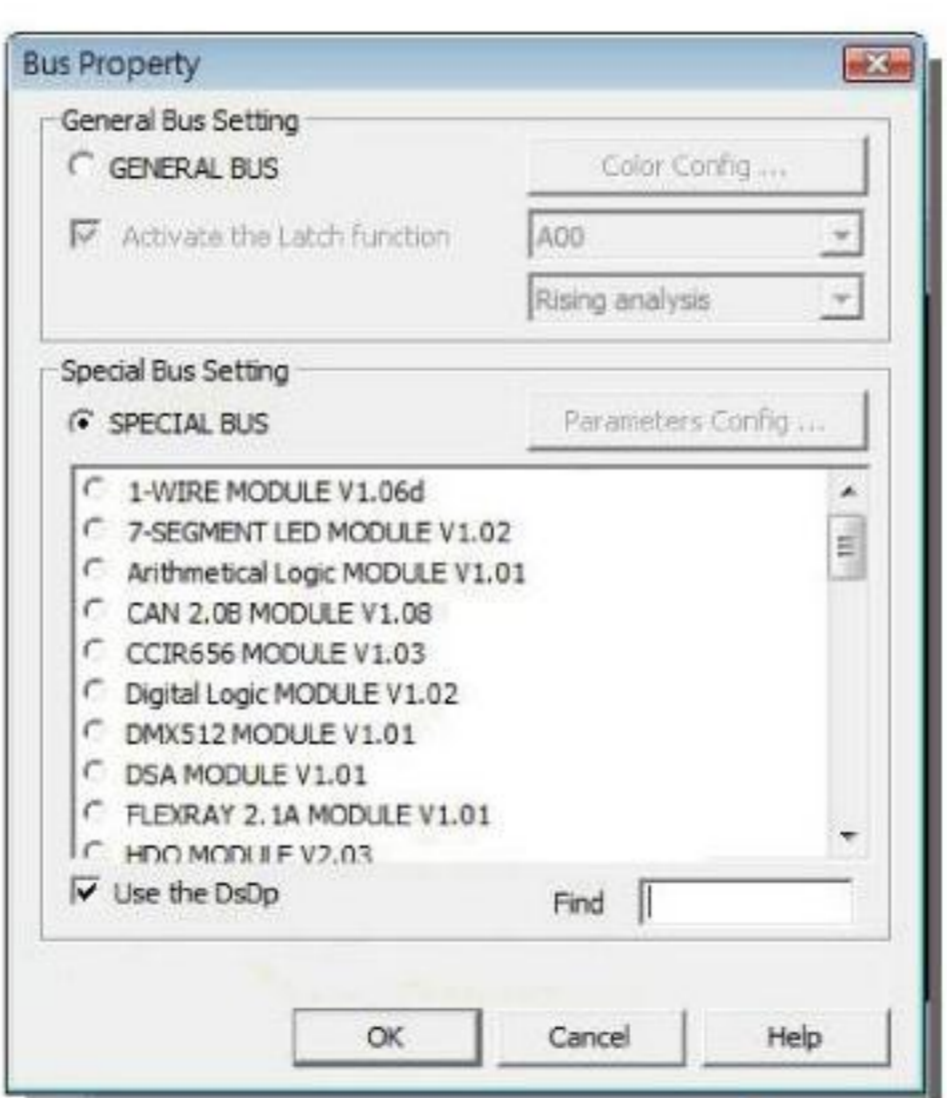
Software Upgrade
ZEROPLUS logic analyzer will automatically update the new version while connect on line.



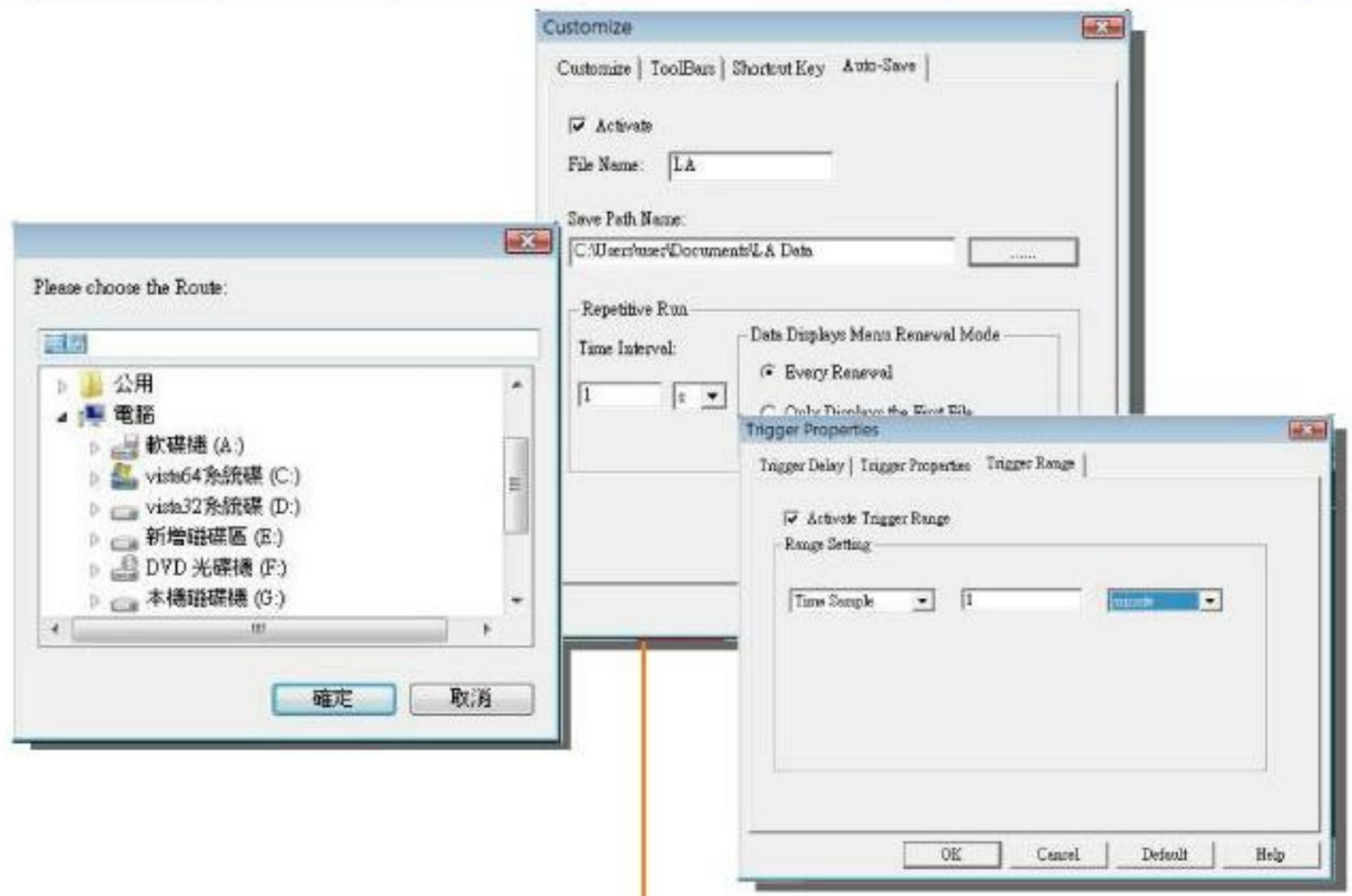
Total:1.3s Compr-Rate:241.484



Waveform Compression
Compression as implied by the name is used to compress acquired data through a loss less compressor. The purpose of this compress is to get more data in limited memory than in actual memory.



Protocol Analyzer Module
PC Based LA features 35 different multi-bus module from multi-media, automotive, IC interface, Memory to PC system. IIC, UART, SPI, 1-WIRE ,HDQ ,CAN2.0B , IIS, PS/2, MICROWIRE.....



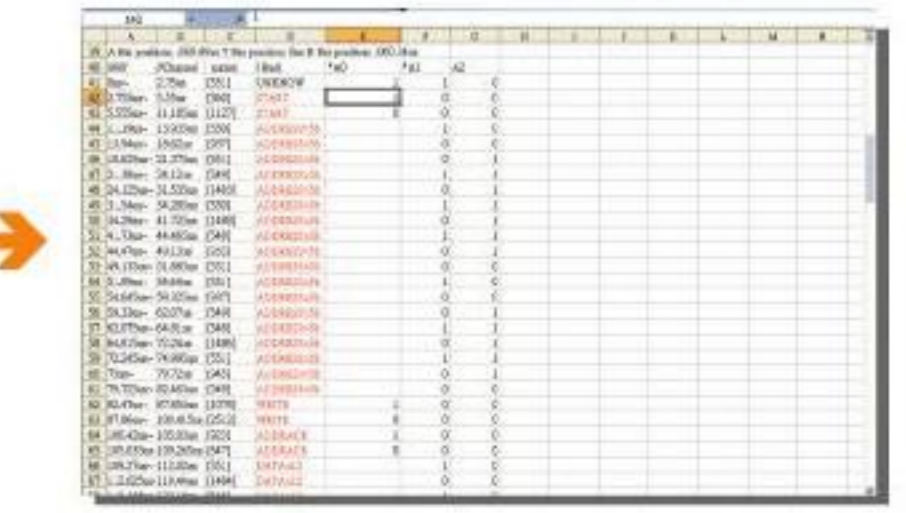
Auto-Save
Auto-save function provides user defined saving mode and optional saving mode, Which includes both time mode and count mode.



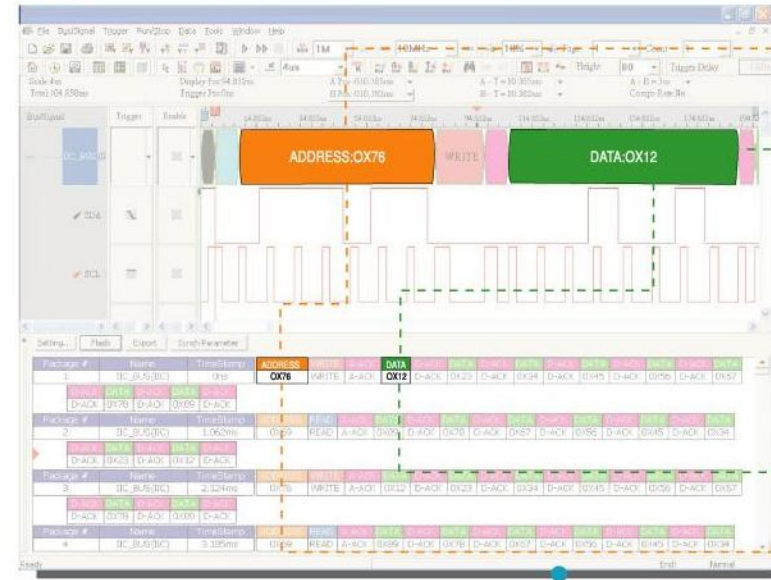
Export
Translating waveform into TXT file and CSV files.

Condition 1 : Signal In
3 selectable trigger modes : high level ,low level ,and wave form cycle mode.

Condition 2 : Trigger Time
Minimum and maxium setting range : 40ns ~ 42.94sec.



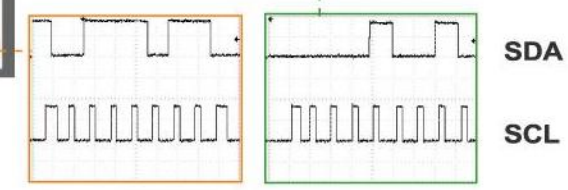
IIC



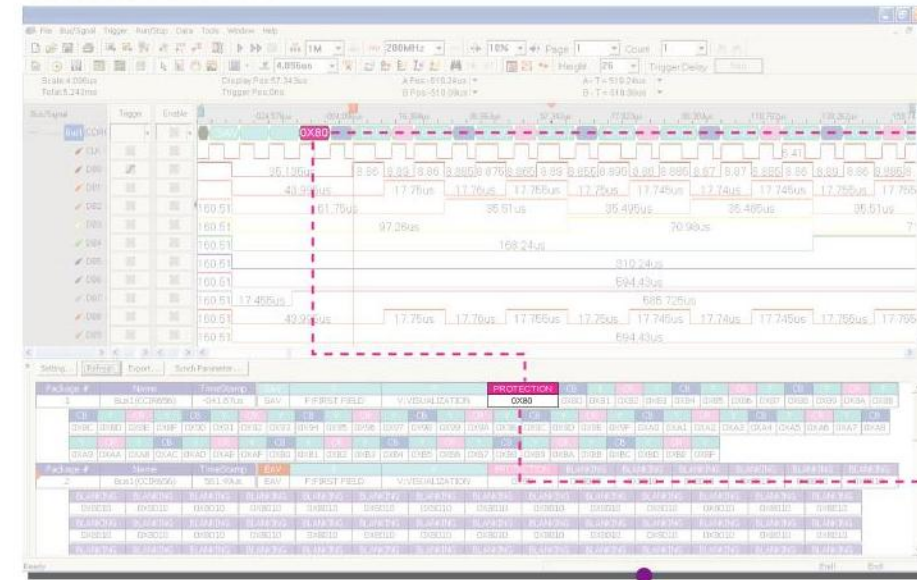
```

IIC AddressSet :
MOV A,#0x76 ; IIC Address set 0X76
MOV Addressbit,A
JMP

IIC DataSet :
MOV A,#0x12 ; IIC Data Set 0X12
MOV Databit01,A
MOV Databit02,A
JMP IICDataInit2
  
```



CCIR656

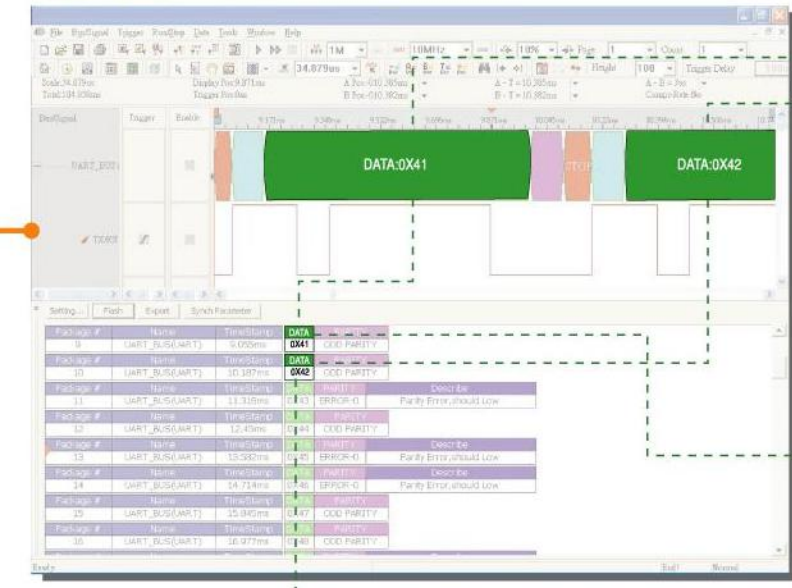


```

MAIN_CCIR656:
CALL
INITIAL_CCIR656
MOV INTEGER,A
MOV DECIMAL,A
MOV -A,#0X80
MOV SAV_EAV,A
CALL
SAV_EAV_CCIR656
CALL
OUTPUT_CCIR656
  
```

Oscilloscope can't be applied due to shortage of testing channels.

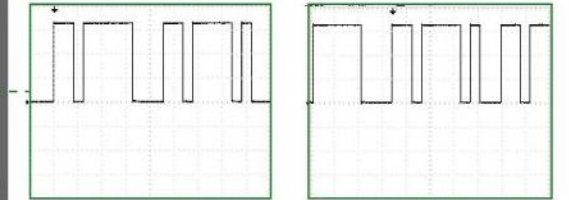
UART



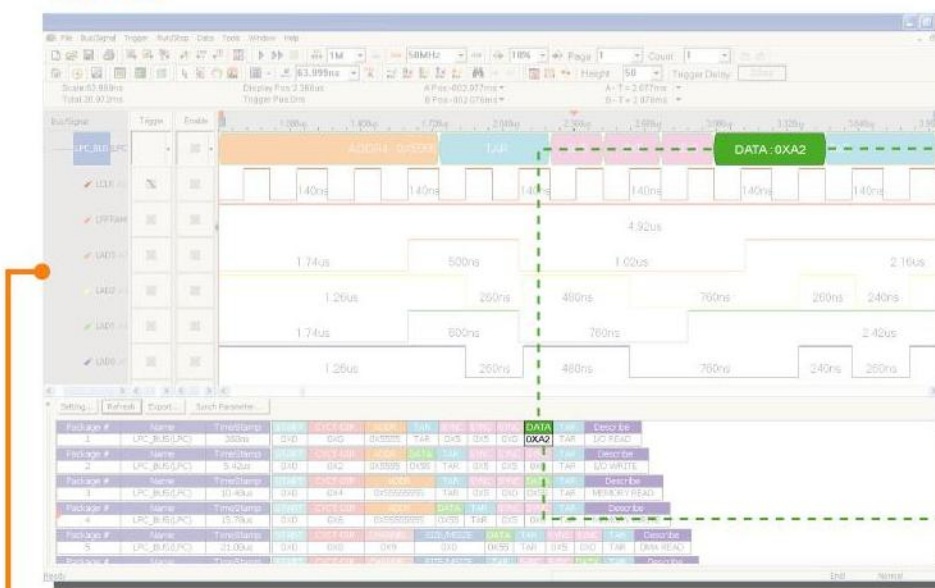
```

UART DataBitLoop:
MOV A,#0x41 ; UART DATA SET = 0x41
MOV UARTDatabit1, A
MOV UARTDatabit2, A

UART DataByteLoop1:
MOV A,#0x42 ; UART DATA SET = 0x42
XOR A, UARTDatabit2
JBS STATUS, Z, UARTDataByteOff
  
```



LPC

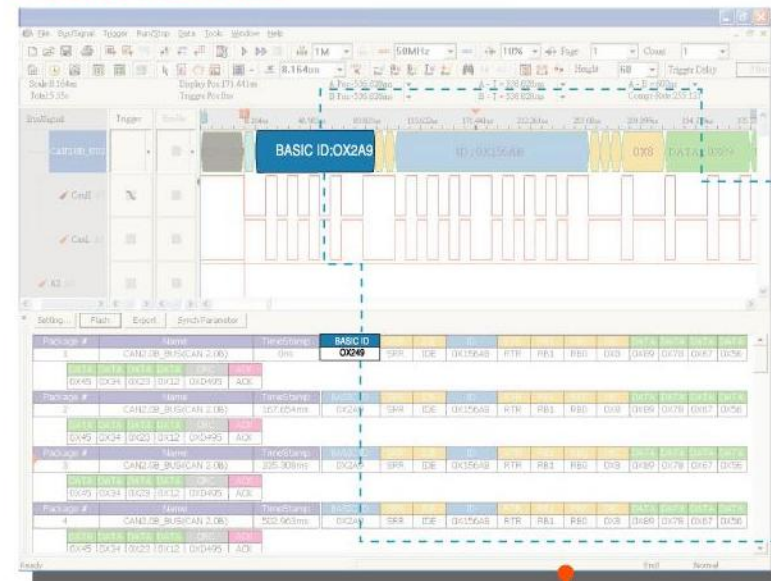


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IO_OUTPUT:
mov
a,#(tab1*2)/0x100
mov htbl,a
mov ltbl,a
MOV -A,#0XA2
MOV COUNT,A
DJZ
COUNT,$+3
CALL DELAY3
WDTC
JMP $-3
  
```

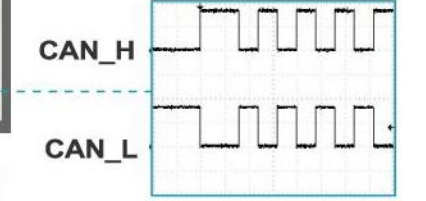
Oscilloscope can't be applied due to shortage of testing channels.

CAN 2.0B

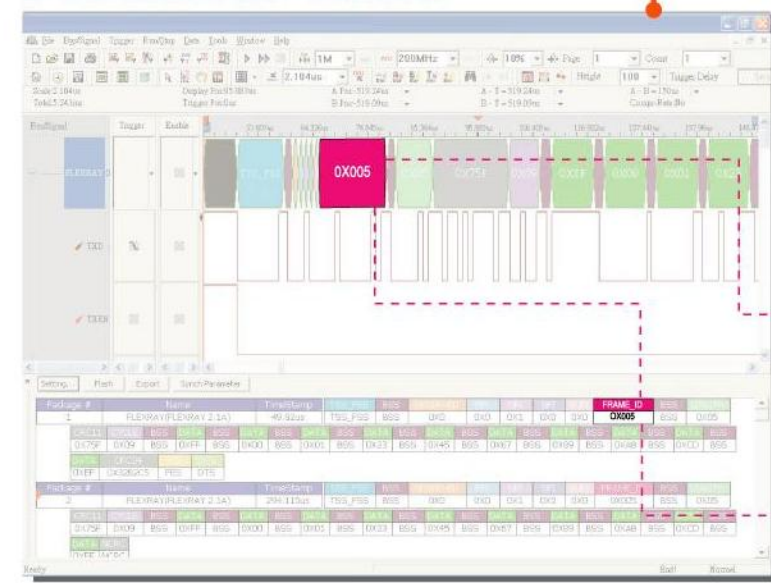


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CAN 2.0B MainLoop :
Call CAN_Init
Call CAN_Start ;Start
mov A,#0x55 ;
Basic_ID = 0X2A9(16) = 01010101011(2)
mov CAN_ID, A
Call CAN_ID_Loop
CAN_ID_Loop:
RLC CAN_ID,#1
jbs STATUS,C,CAN_IDBitHigh
jmp CAN_IDBitLow
  
```

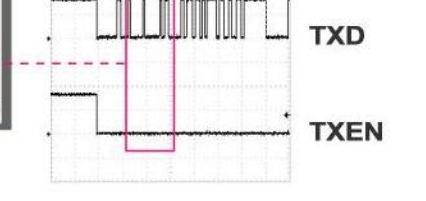


FLEXRAY 2.1A

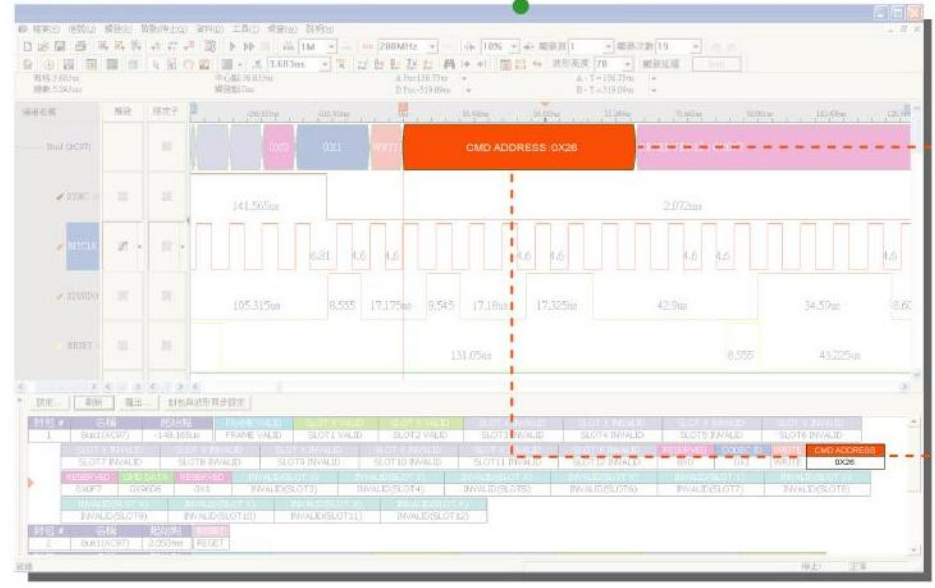


```

FLEXRAY 2.1 Modelinitial
BC SystemFlag,CheckKey
call crc24_flexray_a
mov a,#(flexray_heard_nocrc*2)/256
mov a,#(flexray_heard_nocrc*2)%256
call output_heard_flexray
call output_data_flexray
call output_crc24_flexray
mov a,0x005 ; Frame ID = 0x005
call fes_output
call dts_output
  
```

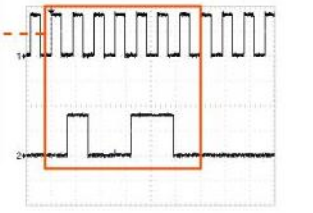


AC97

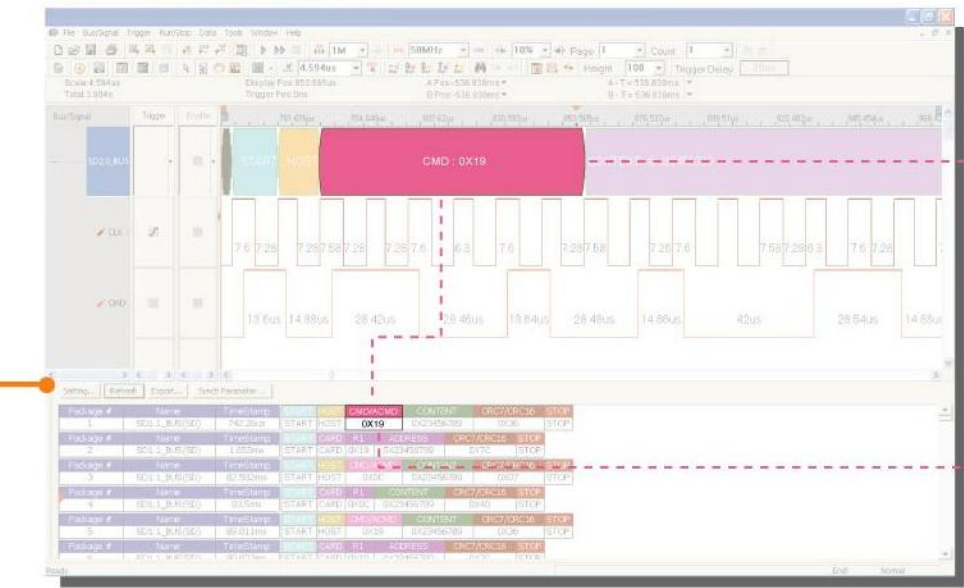


```

Initial:
BC SystemFlag,CheckKey
BC SystemFlag,SendFlag
MOV -A,#0X26
MOV IOCA,A
MOV A,#0XFF
MOV IOCA,A
MOV PUCA,A
MOV IOCC,A
MOV PUCC,A
MOV PTF,A
BC STATUS,C
  
```

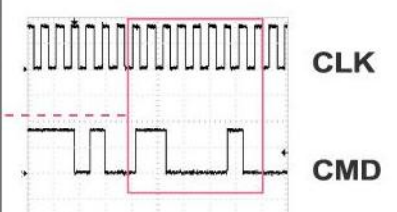


SD2.0/SDIO

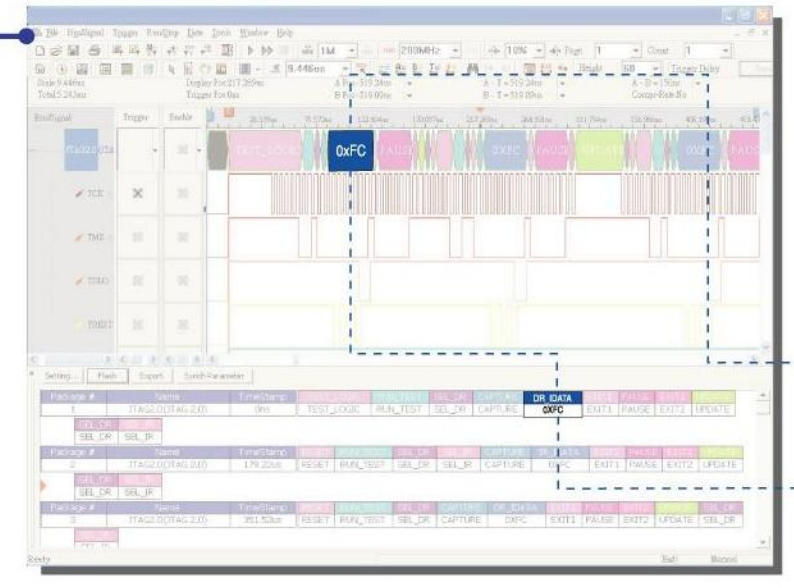


```

_main: ;Function start
CALL _Init
MOV A,#0x7c
MOV s0xF2,A
MOV A,#0x02
MOV s0xF1,A
MOV A,#0x00
CALL _SD_cmd
MOV A,#0x19
MOV s0xF0,A
  
```

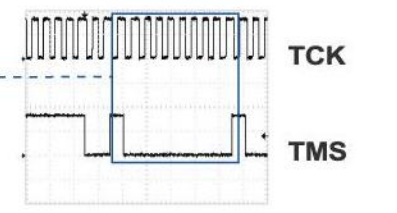


JTAG 2.0

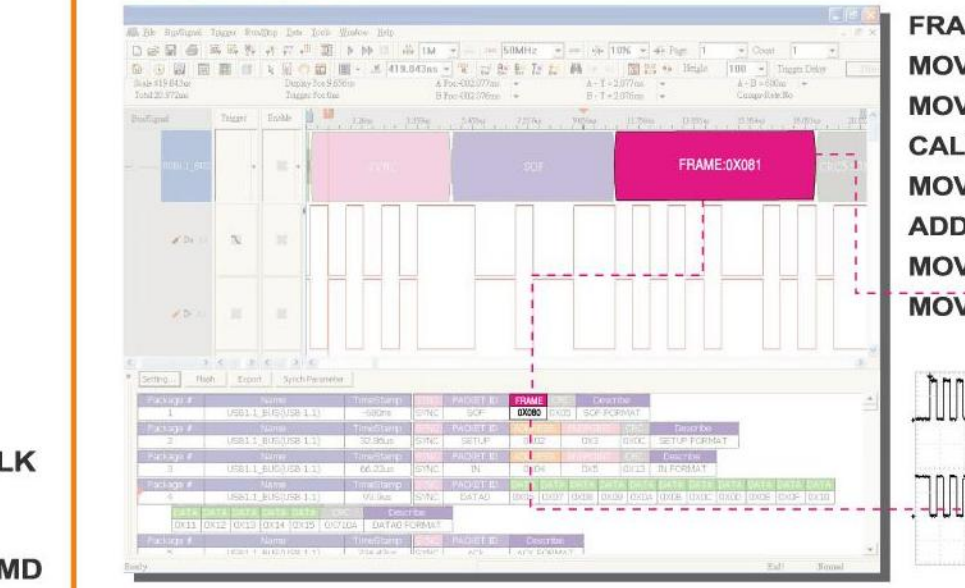


```

JTAG 2.0 Modelinitial:
BC SystemFlag,CheckKey
MOV A,#0x01
MOV _gTMove0,A
CALL_JTAGINIT
CALL_JTAG_TAP_SLELogicReset
CALL_JTAG_SelectDRScan
CALL_JTAG_TAP_SLELogicReset
MOV A, 0x0FC ; Data = 0xFC
BS PTF,PTF0
  
```

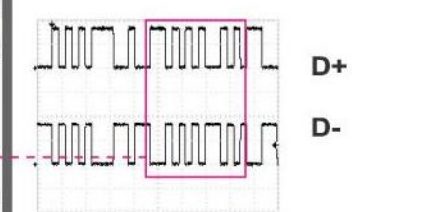


USB1.1

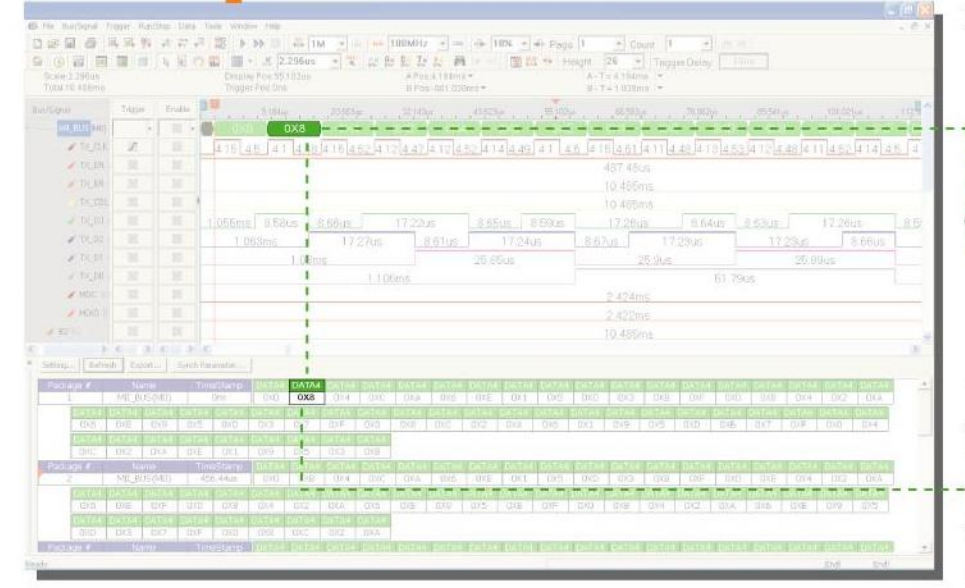


```

FRAME_START:
MOV A,#0X02
MOV PTD,A
CALL DELAY4667NS
MOV A, FRAME_LENGTH_TEMP
ADD A, #0X01
MOV TABLE_LENGTH_USB,A
MOV A,0X080 ; Frame = 0x080
  
```



MII



```

loop_frame_mii:
call output_half_byte_mii
add data_mii_smi,a
djz frame_length,$+3
jmp loop_frame_mii
call delay2us_mii_smi

output_mii:
mov a,#0x08
mov data_mii_smi,a
  
```

Oscilloscope can't be applied due to shortage of testing channels.

