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Tektronix 4 Series
B MSO Mixed
Signal
Oscilloscope

Tektronix 4 Series B MSO Mixed Signal Oscilloscope Owner's Manual

Contents

Tektronix 4 Series B MSO Mixed Signal Oscilloscope

Specifications

- Product: 4 SERIES B MSO MIXED SIGNAL OSCILLOSCOPE
- Upgrades: Available after purchase
- Features: Protocol Decoding, Bandwidth Upgrades, Digital Voltmeter / Trigger Frequency Counter, Advanced Analysis, Double Record Length, Arbitrary / Function Generator

Product Usage Instructions

- **Upgrade Options**

  Upgrade your oscilloscope as needed with various options such as bandwidth upgrades, protocol decoding, and advanced analysis features. Visit **www.tek.com/4SeriesMSO** for more information.
- Application Bundles

  Save with Application Bundles that offer exceptional value. Choose from six bundles with 1-year or perpetual licenses for Serial Protocol Decoding and Analysis, Power, Automotive, Aerospace, and more.
- Bandwidth Upgrade

  Easily upgrade the bandwidth of your 4 SERIES B MSO by purchasing SUP4B-BWn license options. All bandwidth upgrades can be performed in the field by installing a software license.
- Advanced Analysis Features

  Enhance your oscilloscope with various advanced analysis features including Protocol Analysis Decode, Digital Voltmeter, and more. Most licenses are available as Floating versions for easy sharing among engineers within your company.
- Add TLP058 Logic Probes

  Access 8 digital channels on any FlexChannelTM input by adding TLP058 Logic Probes to your setup.
- Arbitrary / Function Generator

  Utilize the Arbitrary / Function Generator feature for versatile signal generation capabilities.

FAQ

- **Q: Can I upgrade the bandwidth of my 4 SERIES B MSO after purchase?**

  A: Yes, you can upgrade the bandwidth in the field by purchasing the SUP4B-BWn license options.
- **Q: How can I access 8 digital channels on my oscilloscope?**

  A: You can access 8 digital channels on any FlexChannelTM input by adding TLP058 Logic Probes to your setup.
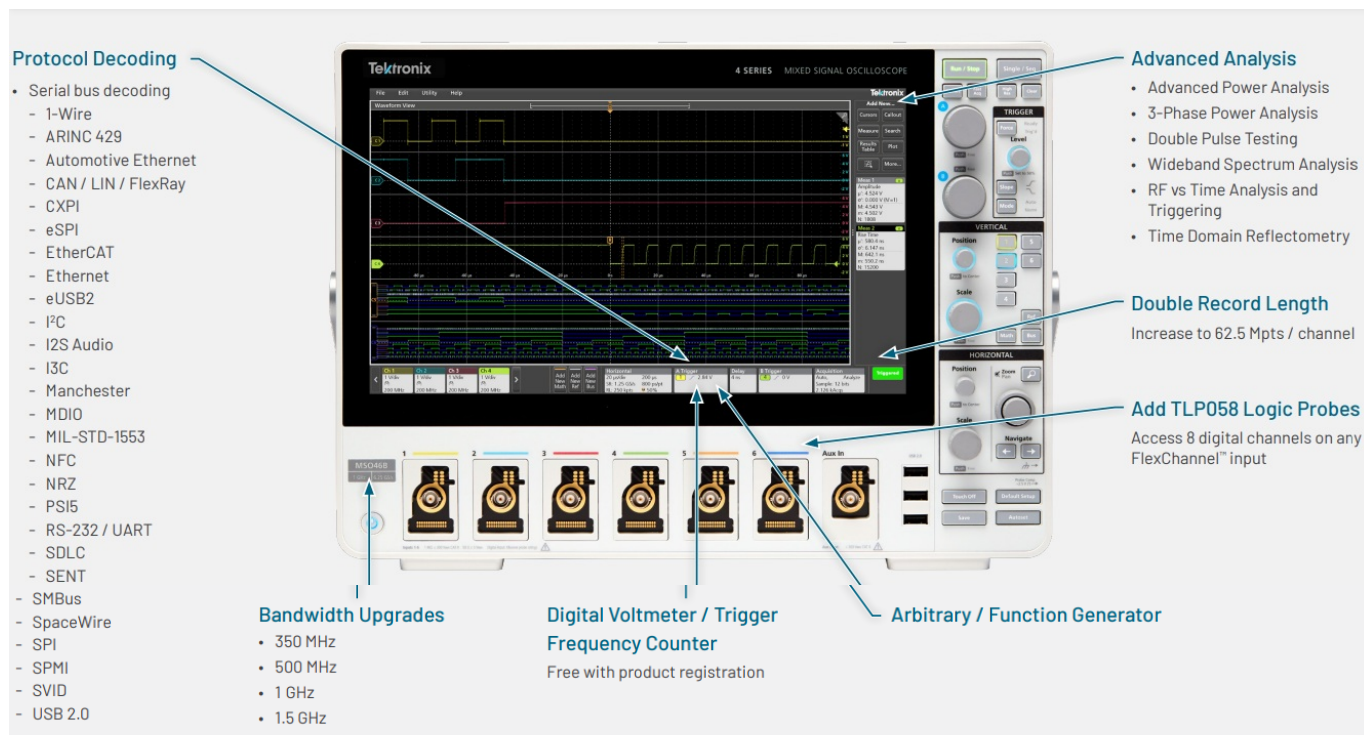- **Q: Are there bundled applications available for the 4 SERIES B MSO?**

  A: Yes, you can save with Application Bundles that offer outstanding value with options like Serial Protocol Decoding and Analysis, Power, Automotive, and Aerospace bundles.

4 SERIES B MSO MIXED SIGNAL OSCILLOSCOPE

Upgrades Available After Purchase

Upgrade as your needs change

Protocol Decoding

- Serial bus decoding
  - 1-Wire
  - ARINC 429
  - Automotive Ethernet
  - CAN / LIN / FlexRay
  - CXPI
  - eSPI
  - EtherCAT
  - Ethernet
  - eUSB2
  - I²C
  - I2S Audio
  - I3C
  - Manchester
  - MDIO
  - MIL-STD-1553
  - NFC
  - NRZ
  - PSI5
  - RS-232 / UART
  - SDLC
  - SENT
  - SMBus
  - SpaceWire
  - SPI
  - SPMI
  - SVID
  - USB 2.0

Advanced Analysis

- Advanced Power Analysis
- 3-Phase Power Analysis
- Double Pulse Testing
- Wideband Spectrum Analysis
- RF vs Time Analysis and Triggering
- Time Domain Reflectometry

Double Record Length

Increase to 62.5 Mpts / channel

Add TLP058 Logic Probes

Access 8 digital channels on any FlexChannel™ input

Bandwidth Upgrades

- 350 MHz
- 500 MHz
- 1 GHz
- 1.5 GHz

Digital Voltmeter / Trigger Frequency Counter

Free with product registration

Arbitrary / Function Generator

www.tek.com/4SeriesMSO

Save with Application Bundles

Six Application Bundles deliver outstanding value. Available with 1-year or perpetual licenses.

Starter Bundle (4-STARTER-1Y or -PER) – Capabilities that most engineers will find valuable

- Serial trigger, decode, search and event table analysis on I2C, SPI, RS-232/422/485/UART buses
- Integrated Arbitrary/Function Generator with 13 predefined waveform types as well as arbitrary waveforms

Four Pro Bundles – Designed for specific applications and industries

- Choose one of the four bundles below to fit your application.
- Each includes the Starter Bundle (above).
- Each extends record length to 62.5 M/ch.

Serial Protocol Decoding and Analysis (4-PRO-SERIAL-1Y or -PER)

- 1-Wire
- Audio
- CAN, CAN FD, CAN XL
- CXPI
- eSPI
- EtherCAT
- Ethernet
- eUSB
- FlexRay

- I3C
- LIN
- Manchester
- MDIO
- NRZ
- SDLC
- SMBus
- SPMI
- SVID
- USB 2.0

Power (4-PRO-POWER-1Y or -PER)

- Advanced power analysis
- 3-Phase power analysis
- Double pulse testing for wide bandgap semiconductors
- SPMI decoding
- SVID decoding
- TDR measurements

Automotive (4-PRO-AUTO-1Y or -PER)

- Double pulse testing for wide bandgap semiconductors
- CAN, CAN FD, CAN XL decoding
- CXPI decoding
- FlexRay decoding
- I3C decoding
- LIN decoding
- NRZ decoding
- PSI5 decoding
- SENT decoding

Aerospace (4-PRO-MILGOV-1Y or -PER)

- Mask/limit testing
- ARINC 429 decoding
- Manchester decoding
- MIL-STD-1553 decoding
- NRZ decoding
- SpaceWire decoding

Ultimate Bundle (4-ULTIMATE-1Y or -PER) – The most capability and greatest savings

- Includes Starter bundle and all Pro bundles

- PLUS: Spectrum View RF vs. time waveforms, extended Spectrum View capture bandwidth, and video triggers

Available Upgrades – 4 SERIES B MSO

Individual Options

FEATURE	UPGRADE	DESCRIPTION	UPGRADE OPTION DETAILS
Upgrade Bandwidth	SUP4B-BWn	Bandwidth upgrade for n-channel 4 Series MSO. See datasheet for details on all upgrade options.	All bandwidth upgrades can be performed in the field by installing a software license.

FEATURE	NODE-LOCKED LICENSE UPGRADE	DESCRIPTION
Instrument Functions	SUP4-AFG	Add arbitrary function generator
	SUP4-RL-1	Extend record length to 62.5 Mpts / channel
Protocol Analysis Decode and search serial content. Some packages include hardware triggering as noted.	SUP4-RFNFC	NFC protocol decode and search
	SUP4-SRAERO	Aerospace serial triggering and analysis (MIL-STD-1553, ARINC 429)
	SUP4-SRAUDIO	Audio serial triggering and analysis (I2S, LJ, RJ, TDM)
	SUP4-SRAUTO	Automotive serial triggering and analysis (CAN, CAN FD, CAN XL, LIN, FlexRay and CAN symbolic decoding)
	SUP4-SRAUTOSEN	Automotive sensor serial triggering and analysis (SENT)
	SUP4-SRCOMP	Computer serial triggering and analysis (RS-232/422/485/UART)
	SUP4-SRCXPI	CXPI serial decoding and analysis
	SUP4-SREMBD	Embedded serial triggering and analysis (I2C, SPI)
	SUP4-SRENET	Ethernet serial triggering and analysis (10BASE-T, 100BASE-TX)
	SUP4-SRESPI	eSPI serial decoding and analysis
	SUP4-SRETHERCAT	EtherCAT serial decoding and analysis
	SUP4-SRI3C	MIPI I3C serial decode and analysis
	SUP4-SRMANCH	Manchester serial decode and analysis
	SUP46-SRMDIO	Management Data Input/Output (MDIO) serial decode and analysis
	SUP4-SRNRZ	NRZ serial decode and analysis
	SUP4-SRONEWIRE	1-Wire serial decoding and analysis
	SUP4-SRPM	Power management serial triggering and analysis (SPMI)

	SUP4-SRPSI5	PSI5 serial decode and analysis
	SUP4-SRSDLC	Synchronous data link control (SDLC) decode and analysis
	SUP4-SMBUS	SMBus serial decoding and analysis
	SUP4-SRSPACEWIRE	SpaceWire serial analysis
	SUP4-SRSVID	Serial Voltage Identification (SVID) serial decode and analysis
	SUP4-SRUSB2	USB 2.0 serial bus triggering and analysis (LS, FS, HS)
	SUP4-SREUSB2	Embedded USB2 (eUSB2) serial decode and analysis
Advanced Analysis	SUP4-3PHASE	Three-phase power analysis
	SUP4-MTM	Mask and limit testing
	SUP4-PWR-BAS	Power measurements and analysis
	SUP4-PWR	Advanced power measurements and analysis
	SUP4-PS2	Power solution bundle (SUP6-PWR, THDP0200, TCP0030A, 067-1686-xx (disked fixture)
	SUP4-SV-BW-1	Increase Spectrum View capture bandwidth to 500 MHz
	SUP4-SV-RFVT	Spectrum View RF versus Time analysis
	SUP4-TDR	Time domain reflectometry (TDR) measurements and analysis
	SUP4-VID	NTSC, PAL, and SECAM video triggering
	SUP4-WBG-DPT	Wide bandgap SiC/GaN double pulse test measurements
Digital Voltmeter	SUP4-DVM	Add digital voltmeter / trigger frequency counter (Free with product registration at **www.tek.com/register4mso**)

Most licenses are available as "Floating" versions to facilitate sharing among engineers within your company. Contact your Tektronix representative for additional information.
www.tek.com/4SeriesMSO

Documents / Resources

Tektronix 4 Series B MSO Mixed Signal Oscilloscope [pdf] Owner's Manual
4 Series MSO, 4 Series B MSO Mixed Signal Oscilloscope, 4 Series, B MSO Mixed Signal Oscilloscope, Mixed Signal Oscilloscope, Signal Oscilloscope, Oscilloscope

References

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- **User Manual**