WEARABLE Sensing

# Wireless Trigger Hub



## Revolutionizing EEG Research

- Wireless triggering — Untethered ambulatory research
- Multiple input modalities — Easy integration with other systems
- Auto-triggering — Versatile event synchronization
- Adjustable thresholds — Enhanced efficiency and productivity

## Applications

Evoked response potentials (ERPs)
Multi-device interfaces
Timing synchronization
and many more...

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**The wireless trigger hub enables interfacing between Wearable Sensing's Dry Sensor Interface (DSI) EEG headsets and other systems, facilitating device synchronization and third-party system integration. The hub allows you to acquire triggers from and transmit triggers to many sources. consolidating up to 8 trigger sources into a single multi-channel output that inputs directly into DSI systems.**

**The use of standardized input connectors and cables allows the user to connect and synchronize a wide range of third-party devices with the hub and with DSI systems. Triggers from the input parallel port are distributed across the connections on the output panel. The trigger output voltage is 0 - 5 V, which is sufficient to drive the trigger inputs of standard devices.**

# Wireless Trigger Hub Technical Specifications

## Inputs/Outputs

- 1 parallel port (DB-25 connector, 8 channels)
- 4 analog inputs
  - 2 via BNC connectors
  - 2 via 3.5 mm stereo connector
- 1 line-level audio input (3.5 mm stereo connector)
- 2 switch inputs (3.5 mm stereo connectors)
- 1 auto-trigger function (output on all ports)

## Uses Standard Input Connectors

- Digital (parallel port (DB-25)
- Analog (BNC connectors; 3.5 mm jack)
- Line-level audio (3.5 mm jack)
- Switch inputs (3.5 mm jack)

## Analog/Parallel Port

- Input voltage range: 0-20 V

## Audio Input

- Input voltage range: line-level, 2 Vpp
- Min. audio signal level (1 kHz): 40 mVpp
- Bandwidth: 40 Hz - 20 kHz (-3 dB)

## Output Triggers

- Voltage: 0-5 V
- Current: 100 mA continuous/200 mA impulse
- Min. pulse width: 20 ms
- Min. Inter-trigger interval (rising edge): 40 ms
- Latency:
  - <100 micro s (ditial/analog/switch inputs)
  - <0.5 ms (audio input)
  - 12 ms wireless with <400 micro s jitter
- AutoTrigger: 1 Hz

## Wireless

- Transmission range: 10 m
- Repeater eliminates transmission shadow effect
- Increases fidelity of transmission to 99.999%

## Hub Outputs to DSI Systems

- 8-bit wireless trigger
- 8-bit wired (DB-25) trigger

## AutoTrigger

- Distributes a 1 Hz square wave to all outputs
- Enables synchronization across multiple systems

## Threshold

- Number of settings: 10
- Range: 0.63-5.8 V
- Adjustable thresholding circuit on every input
- Resulting triggers are consolidated and transmitted to DSI systems

## Power

- Micro-USB 1.x/2.0 receptacle

## Accessories

- Photodetector
- Push-button trigger
- Stereo cable
- Wired trigger cable
- Wireless dongle
- Wireless repeater

5754 Pacific Center Blvd.
San Diego, CA 92121 | USA
WearableSensing.com
+1-858-215-4850