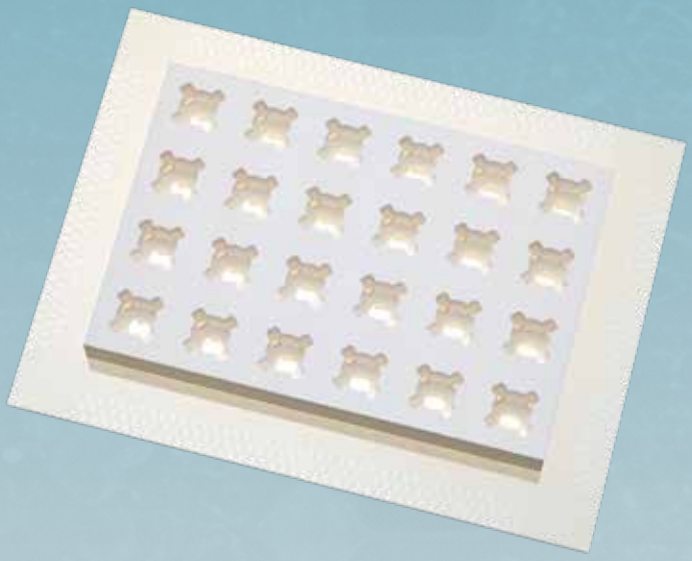
MED64 PRESTO

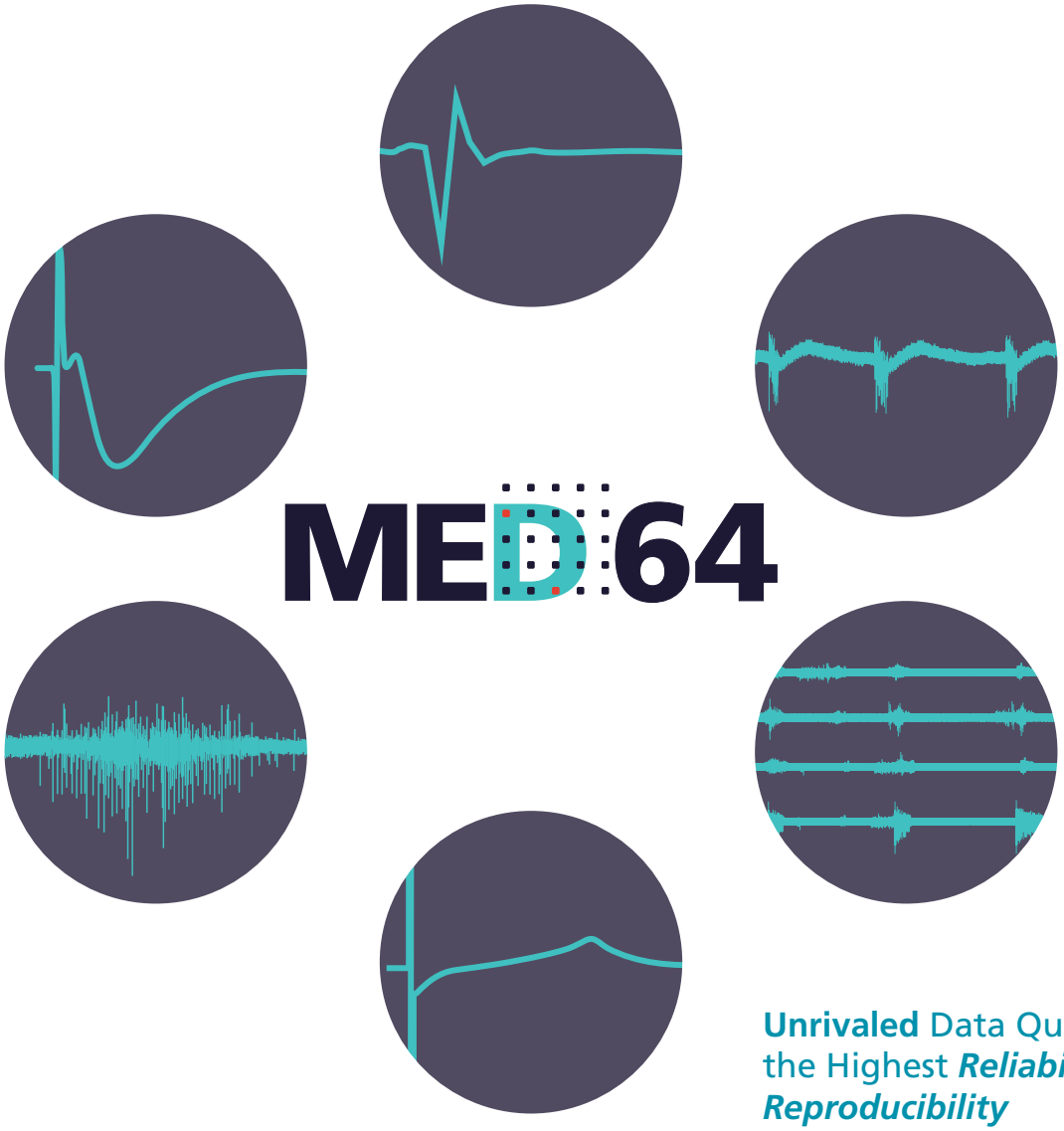
High-sensitivity, high-throughput microelectrode array system for scientists who value data quality



Unrivaled Data Quality for the Highest ***Reliability*** and ***Reproducibility***

MED64 product information
www.med64.com

DATA QUALITY THAT YOU CAN COUNT ON

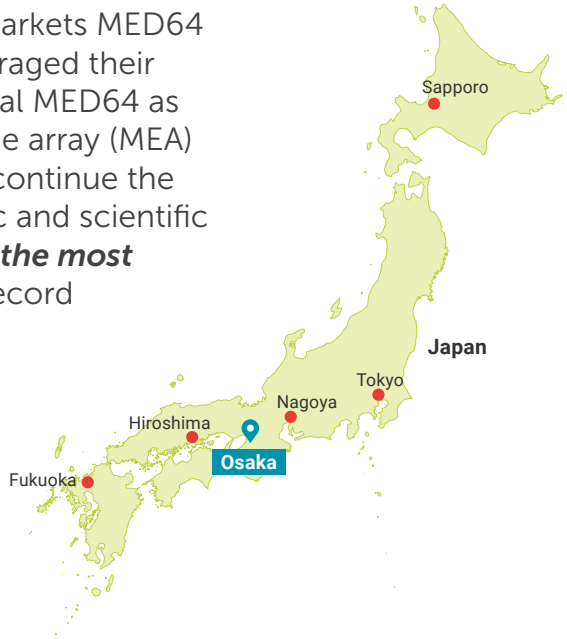


Unrivaled Data Quality for the Highest ***Reliability*** and ***Reproducibility***

Our Story

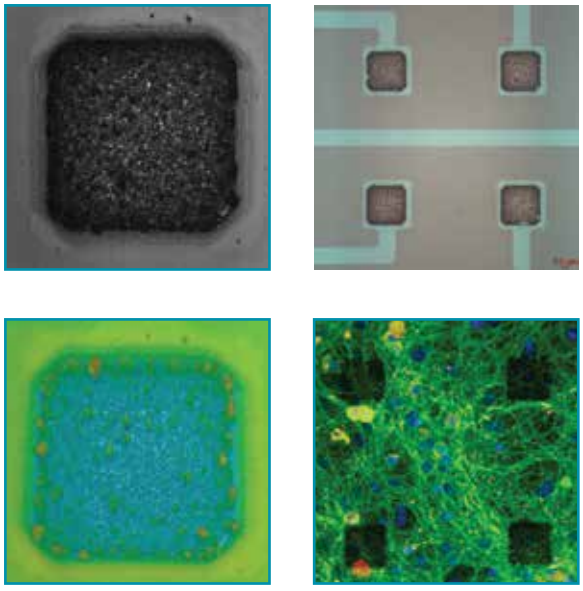
Alpha MED Scientific, engineers, manufactures, and markets MED64 Microelectrode array systems. In 1997, Panasonic leveraged their electronics expertise to develop and launch the original MED64 as the ***first*** commercially available in-vitro microelectrode array (MEA) system. In 2010, Alpha MED Scientific was formed to continue the MED64 product line. Leveraging decades of electronic and scientific engineering expertise, Alpha MED Scientific produces ***the most sensitive*** MEAs on the market, allowing our users to record important and meaningful signals that are filtered out by other platforms.

Our mission is to enrich electrophysiologists with our industry leading expertise in electronics design and manufacturing.

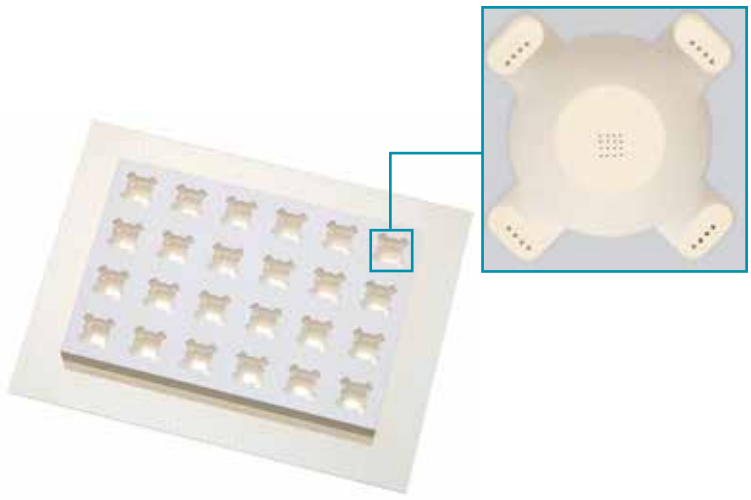


LOW-NOISE TECHNOLOGY

The MED64 Presto is engineered for low noise. Low-noise and superior recording performance is achieved by Alpha MED's unique carbon nanotube technology. The electrodes of Presto are composed of a carbon nanotube material that offers extraordinary conductivity and low impedance characteristics resulting in an extracellular electrophysiological signal that is not compromised by digital filtering. An industry leading signal-to-noise leads to an uncompromised signal for more reliable and more reproducible data.



Carbon nanotube electrodes are highly transparent, have a flat surface, and are highly durable.



Reproducible and reliable data is a hallmark of the MED64 Presto. The unique Sakura plate is engineered for easy and accurate seeding of cells.

Cross-section diagram for the carbon nanotube electrode (pink)

Advantages

MEA Plate24 Comfort

Superior Sensitivity

Industry leading signal-to-noise ratio providing high-quality uncompromised data

Superior Cell Adhesion

Flat carbon nanotube material provides a culture-friendly substrate for excellent cell adhesion resulting in a more consistent recording

Crystal Clear Transparent Base

A glass transparent base allows unimpeded cell imaging directly on the MED64 Presto's MEA Plate

SOPHISTICATED HIGH-END SOFTWARE

The MEA Symphony software is the most sophisticated acquisition and analysis software for both neuron and cardiomyocyte cell cultures. Visualize all data, from raw voltage and extracted action potentials to cumulative response measurements at the electrodes and wells. Visualizing raw data as its collected will allow for quick identification of interesting or anomalous data. With a number of automated data collection and analysis features, it is intuitive and easy-to-use. The MEA Symphony has a number of high-level analyses to choose from so data analysis is in the experimenter's hands, where it belongs!

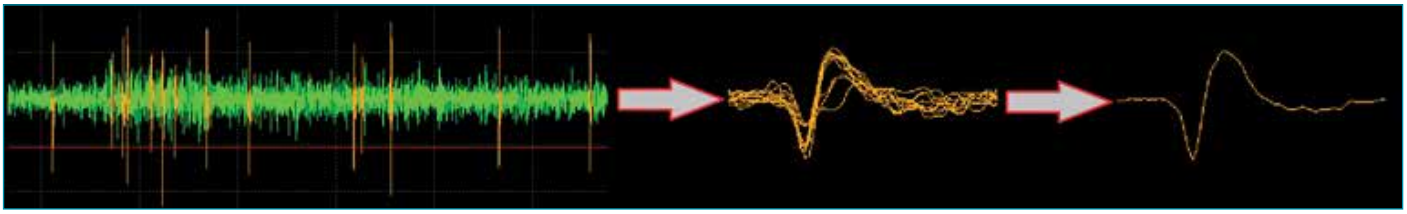
MEA Symphony's **Neuro** software has sophisticated spike, burst, and network burst analyses. Automated drug dose-response analysis makes compound testing assays effortless.

MEA Symphony's **Cardio** software has sophisticated beat rate, field potential duration (FPD), and propagation analyses as well as automated compound and drug dose-response analyses.

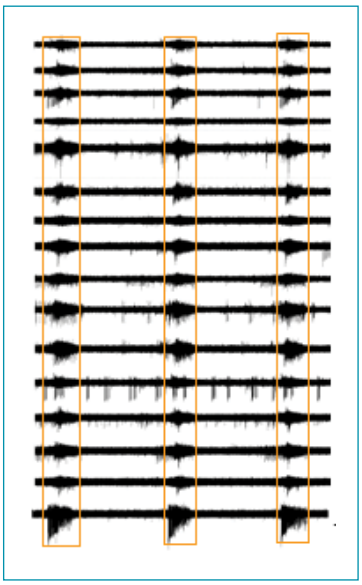
HIGH-LEVEL NEURON RECORDING AND ANALYSIS

Due to its high-sensitivity low-noise electrodes, the MED64 Presto can detect signals that can be missed by other systems. Record more reliable signals with the MED64 Presto and improve the reproducibility and reliability of neuron studies. The MEA Symphony software has several high-level analyses for neuron cultures. All analyses can be confirmed by MEA Symphony's robust graphic capability and easily exportable into other graphing and statistical software for additional analysis.

Spike Extraction



Burst Detection



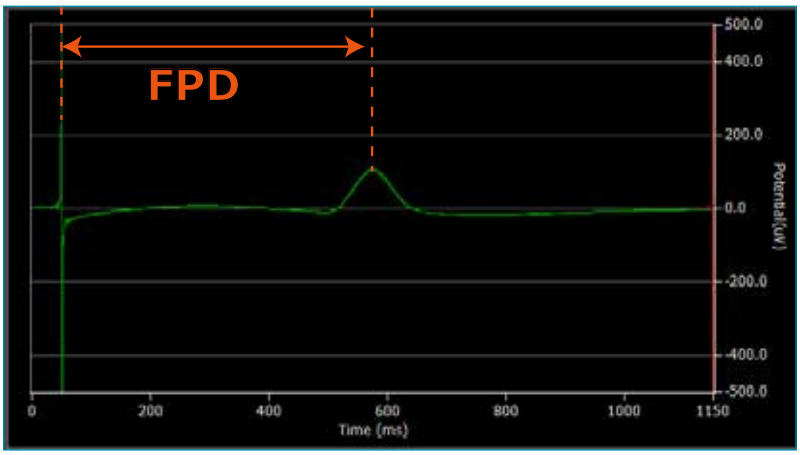
AVAILABLE ANALYSES

- Spike Extraction
- Spike frequency for all (or selected) electrodes in a well
- Spike frequency per electrode, well, and treatment
- Spike counting per electrode, well, and treatment
- Inter-spike interval per electrode, well, and treatment
- Raster plot (distribution of spike time stamp)
- Burst detection
- Heat map (Visualization of spike frequency)
- Burst frequencies, burst duration, onset time, Inter burst intervals, and MORE

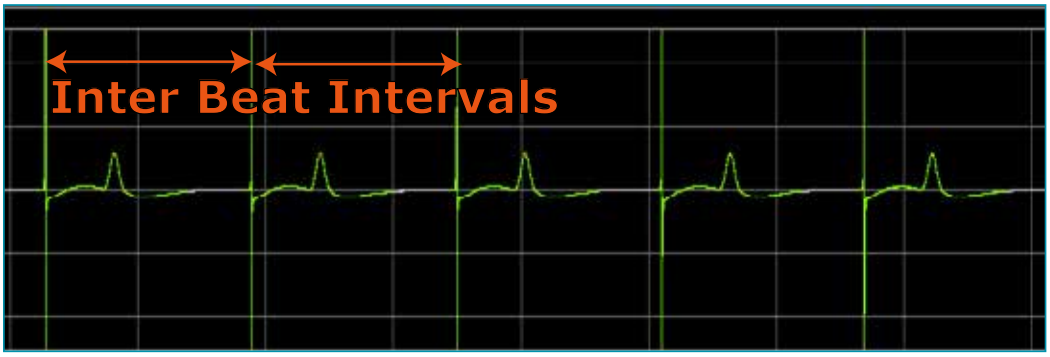
HIGH-LEVEL CARDIO RECORDING AND ANALYSIS

MED64 Presto's high-sensitivity low-noise electrodes afford clear cardiomyocytes signal detection. Record cleaner cardio signals at more electrodes and improve reproducibility and throughput. MEA Symphony software has several high-level analysis for cardio beat detection. Confirm all analysis via Symphony's robust graphing capabilities or easily export data into other software for additional analysis and graphing.

Field Potential Duration



Beat Characteristics



AVAILABLE ANALYSES

- Extract beat signals per electrode, well, and treatment
- FPD (Field Potential Duration) per electrode, well, and treatment
- Beat Frequency per electrode, well, and treatment
- Inter-beat-interval per electrode, well, and treatment
- Propagation and Conduction velocity per electrode, well, and treatment

SPECIFICATIONS AND FEATURES

MEA Plate

Well format	Parts NO	No. electrode / well	Well size
MEA Plate24 Comfort	MED-Q2430L	16	Φ16mm x 10mm (h)
MEA Plate24 Eco	MED-Q2430M	16	Φ11mm x 10mm (h)
MEA Plate24 Sakura	MED-Q2430S	16	Φ5 mm (bottom) x 10mm (h)
MEA Plate48	MED-Q4830	8	16mm x 7mm x 10mm (h)
MEA Plate96	MED-Q630	4	Φ7mm x 10mm (h)
MEA Plate6	Avaiilable soon	64	Φ22mm x 10mm (h)

MEA Plate24 Comfort

MEA Plate6

MEA Plate48

MEA Accessories

CellSpotter24 Comfort

CellSpotter24 Comfort placed on the MEA Plate

CellDroplet24

MED64 Presto System

Amplifier, Acquisition		Amplifier, Stimulation		Electrode, Well	
Number of channel	384	Output	Voltage driven	Electrode material	Carbon nanotube
Gain	1000x	Output electrode	2 per 1 well	Electrode size	50 µm x 50µm
Sampling rate	20 kHz	Max. output voltage	+/- 2 Vp	Electrode impedance	7 kohm (Typ.)
RMS noise	1.2 µV (< 5kHz) 0.9 µV (<3 kHz)	Temperature Controller		Insulation layer	Polyimide
		Heater	Transistor x 4	Material	Substrate: Glass
High pass filter (LCF)	0.1Hz	Sensor	Sensor IC		Well: Acrylic resin
Low pass filter (HCF)	5 kHz	Resolution	+/- 0.1°C		Lead: ITO
Output channel	1 (for Trigger Output)	Temperature Controller	Omron EG5C		

Integrated stage heater and environmental provide a physiologically-friendly environment for cell culture assays

Further information
www.med64.com

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