Model 3600



16-Channel Extracellular AC Amplifier with Headstage



The Model 3600 16-Channel Extracellular Amplifier with Headstage is intended for extracellular recording and/or stimulating with high impedance metal microelectrodes. Designed primarily for use in high-density recordings of neuronal action potentials studies, it is also quite capable in a variety of research or teaching applications such as nerve, muscle (EMG), EEG, EKG, and ERG recordings.

The Model 3600 has 16 independent channels, a front panel touch screen, computer control capabilities, and a built-in calibrator. In addition, users can quickly monitor on an external oscilloscope the activity on any two channels. Each channel of the Model 3600 can be referenced to ground or a 17th reference electrode. Gain, high-pass, low-pass, and line frequency (notch) filtering are completely independent for every channel. All channel settings can be accessed via the easy-to-use front panel touch screen interface or via an application loaded on a Windows-based computer (*see reverse for additional details*).

Two different headstages are available. One is a microminiature headstage that can make simultaneous pseudo-differential recordings from 16 channels, and is smaller than a dime! The other can stimulate and record to any combination of the 16 channels. In addition, the Stim/Rec headstage has a convenient dovetail to mount to common micromanipulators.

Common applications for the Model 3600 16-Channel Extracellular Amplifier with Headstage include, but are not limited to:

- Single Cell Action Potentials
- Waveform Sorting
- Evoked Potentials

- Multiple-Unit Recordings
- Long-term Potentiation
- EEG / EMG / EKG / ERG recordings

The Model 3600 16-Channel Extracellular Amplifier with Headstage is designed for research grade recording quality; its straightforward interface also makes it ideal for teaching applications.



Stim/Rec Headstage (rear left) & Rec-Only Headstage (near right)

- 16 amplifiers in one instrument
- Ten gain stages up to x20,000
- Eight high-pass filter settings
- Eight low-pass filter settings
- Notch filter for power line frequency
- Controlled via front-panel touch screen or free Windows-based program
- Easy access output monitors
- Can pass stimulation current to electrodes (with Stim/Rec headstage)
- Includes rack mount hardware
- 3-year warranty

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Software

In addition to the easy-to-use touchscreen interface on the Model 3600's front panel, the instrument can also be controlled by a free Windows-based application. This program controls all aspects of the amplifier, including channel settings and program names. It can read the current settings of the instrument, as well as load programs previously stored on the instrument or on the host computer. Multiple Model 3600's can be controlled by a single application. Note-logging capabilities are included, allowing researchers to make time-stamped notations about their experiment as they collect data.

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	6 Channel Amp	olifier Mod	iel 3500	- A-M 5	ster	ns, Inc.						
File	File Instruments Tools Help											
	Current Program											
	Instruments:				_	Programs:			16mm / E-49			
	Amplifier A (S/N: 55162) Amplifier B (S/N: 55163)					#1 - 16 Channel EEG #2 - Jon's EEG					TIONY EQU	
	Amplifier C (S/N: 55164)					#3 - Cathy 9 Ch EMG #4 - Dave 12 Channel					Run On Instrument	
						#5 - (no name)					Load From File	
	Channels										Output Monitors	
	Channel #	On/Off	High	Pass	L	ow Pass	Gain		Notch	Com Ref	Monitor A: 3 💌	
	Channel 1	OFF	100	•	1k	•	20	•	OFF		Monitor B: 7 💌	
	Channel 2	ON	100	•	1k	•	20	٣	OFF			
	Channel 3	ON	100	•	1k	*	20	¥	OFF		Common Reference	
	Channel 4	ON	100	۳	1k	٣	20	•	OFF		• Hear Panel Jack	
	Channel 5	ON	100	•	1k	•	20	-	OFF	ସ [Giround	
	Channel 6	ON	100	•	1k	٣	20	٣	OFF		Calibration	
	Channel 7	OFF	100	•	1k	•	20	Ŧ	OFF		10mV 💌 ON	
	Channel 8	OFF	100	•	1k	•	20	-	OFF	되 [
	Channel 9	OFF	100	•	1k	•	20	-	OFF	되 [
	Channel 10	OFF	100	-	1k	•	20	•	OFF			
	Channel 11	ON	100	•	1k	•	20	-	OFF			
	Channel 12	ON	100	•	1k	•	20	-	OFF			
	Channel 13	OFF	100	-	1k	*	20	•	OFF	ସ [
	Channel 14	ON	100	-	1k	-	20	•	OFF			
	Channel 15	ON	100	•	1k	*	20	•	OFF	₹ [
	Channel 16	OFF	100	•	1k	*	20	•	OFF	,⊾		

Specifications	Gain*	10, 20, 50, 100, 20	10, 20, 50, 100, 200, 500, 1000, 2000, 5000,10000, 20000 0.3, 1.0, 3.0, 10, 30, 100, 300, and 500 Hz; -40 dB / decade 0.1, 0.3, 0.5, 1.0, 3.0, 5.0, 10.0, and 20.0 kHz; -40 dB / decade >-35 dB at 50 or 60 Hz. 2.0 microvolt rms typical (10 Hz to 10,000 Hz)						
•	High Pass Filter*	0.3, 1.0, 3.0, 10, 30							
	Low Pass Filter*	0.1, 0.3, 0.5, 1.0, 3							
	Notch Filter	>-35 dB at 50 or 6							
	Noise	2.0 microvolt rms							
	Other Features	Controlled via co	Controlled via computer, TTL, or front-panel touchscreen						
		Two front panel output monitors							
		16 rear panel out	16 rear panel output BNCs (one per channel) and ganged output connector						
	* Can customize thes	e values for an additiona	l fee. Contact A-M Systems or your distributor for information						
References	Lu H, et al. (2007) Synchronized delta oscillations correlate with the resting-state functional MRI signal. <i>PNAS</i> 104 (46): 18265-18269								
	Viggiano A., et al. (2010 the spinal trigeminal n)) Mastication overload ucleus <i>Neuroscience</i> 166	ication overload causes an increase in O ₂ - production into the subnucleus oralis of <i>Neuroscience</i> 166(2):416-421						
Ordering	For use on 220 V / 50 Hz power systems: Product [#] 960005 (Country-specific power cords are not supplied.)								
Information	For use on 110 V / 60 Hz power systems: Product [#] 960000								
	One of the following headstages must be purchased for proper operation of the instrument:								
	Stimulating and Recording Headstage: Product [#] 962000 and [#] 962050 (Stim control cable)								
	Recording-Only Headstage: Product [#] 961075 and [#] 961050 (output cable)								
	Input Cable with individual leads: Product [#] 963000								
	"Michigan-Probe" electrode adapter: Product [#] 963200								
	All units include a produ	ເct manual and rack mou	ints.						



联系人:曾祥满 手机:13632925349 QQ:812401203 电话:0755-28896837

深圳众裕康科技有限公司 地址:深圳市龙岗区沙平北路111号6008 网址: www.zykang.cn 邮箱: zykang2021@163.com