



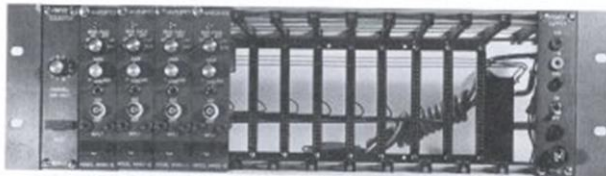
**BAK ELECTRONICS, INC. *Biomedical Instrumentation***

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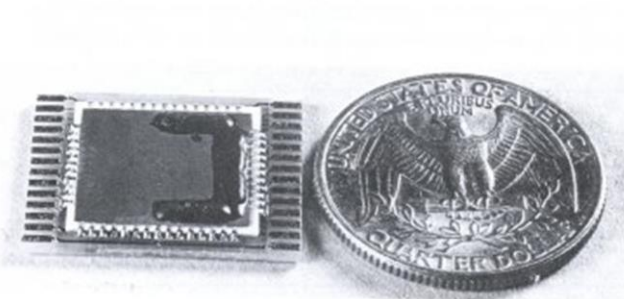
## *Custom Designed Miniature Multichannel Recording Systems*



14-channel DC System, internal offset and gain controls, in RP-2



4-channel MMRS-1S AC Amplifiers with probe stage and channel scanner



MMRS-1P 25-channel F.E.T. probe stage. Cable and connector configurations to your specifications.

- FOR DEDICATED APPLICATIONS REQUIRING 4-14 MODULAR CHANNELS
- OPTIONAL 25-CHANNEL HYBRID F.E.T. PROBE - LIGHT ENOUGH FOR MOVING ANIMALS
- YOU SPECIFY CONFIGURATION AND ALL CRITICAL PARAMETERS
- FREE APPLICATION AND DESIGN CONSULTATION SERVICE
- NOW AVAILABLE WITH OPTICAL ISOLATION



Close-up of MMRS-1S single-ended card showing 100-10,000 continuous gain control and 5-value Lo-cut filter selection. (This is only one example of possible configurations.)

## ***Description:***

If you need four or more specialized amplification channels for multi-channel recording, the MMRS system offers a unique solution. You specify your needs, we'll design the circuits, and the final package will be smaller, less expensive, and easier to use than obtaining the equivalent performance from general purpose amplifiers.

An MMRS system generally consists of a rack-mountable power supply (RP-2), 4-13 modular card-mounted amplifiers, and an optional multi-channel hybrid IC probe. The high-impedance DC probe is specially designed for high impedance recording from moving animals. It consists of 25 DC coupled F.E.T. inputs. Less than 1 oz. weight and cubic inch size plus ultra-flexible woven ribbon cable and miniature connector make this ideal for use with floating microelectrodes in freely moving or partially restrained animals.

The modular card amplifiers can be designed for either second stage amplification of the signals from the probe or for stand-alone use, having an input impedance of 1 megohm. Generally, a probe stage is not necessary when source impedance's (electrodes) are under 50 kilohms and leads can be kept reasonably short and shielded. The MMRS cards can be designed for single-ended, differential, AC or DC amplification and any combination in one system. While panel space is limited, switches and controls can be incorporated to allow a few user specified options of filtering, gain, balance, etc One slot of the power supply cage can be fitted with a scanning switch which can be used to select lines from the probe stage into the first card amplifier. This is very useful for scanning through multi-channel arrays to inspect input signals without constantly reconnecting to individual amplifier outputs.

The MMRS system secondary rack is now offered with optical isolation. Each secondary amplifier card can be supplied with an optically isolated amplifier at the output stage. The rack and power supply then utilizes a medical grade high isolation power supply on the input side of the amplifier and our normal power sources for the output stages of the amplifier. This is particularly useful in multichannel set-ups which are to be connected to computer acquisition systems so that computer generated noise is not fed back into the amplification stages.

If you are interested in obtaining a quotation for your application, please fill out the Design Work Sheet. One of our consultants will contact you shortly if further information is needed or if we can suggest alternatives to consider. Typical component prices are given in our current Price List - actual quotations will depend on the complexity of your application and the number of controls required.

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