The Allison 660 Preamplifier Module is a low-noise, self-contained amplifier package. Gain is controlled by selection or adjustment of resistance in the feedback loop. Maximum recommended voltage gain is 40 db.

In addition to providing adjustable voltage gain, the open feedback loop permits the insertion of equalizing networks or tuned circuits for selective amplification.

The 660 may be operated from a DC supply voltage over the range of 13.5 volts to 22.5 volts. Under all conditions, the current drain will be less than 1.0 milliamperes. Together with adjustable gain, these factors provide the flexibility and minimum power drain necessary in many applications.

The circuit components of the module are welded and encapsulated for a high level of environmental protection. Transistors are mounted in molded-in sockets for ease of replacement. This same feature gives versatility in selection or substitution of transistors for greater temperature stability, increased frequency response, or greater signal-to-noise ratio.

The modular construction of the 660 saves engineering time since they may be used in breadboards, prototypes and into final production without change in specification. Mounting method is simplified by molded-in tapped inserts.

Some typical applications for the 660 are: (1) As a voltmeter preamplifier for very low level measurements (the noise is low enough to allow measurements below 10 microvolts from 10 cps to beyond 1 megacycle); (2) As a frequency selective voltmeter preamplifier with measuring levels below 1 microvolt; (3) As a tape recorder equalized playback preamplifier with a signal-to-noise ratio of 85 db or more; (4) As a preamplifier for counters, recorders, and other instruments to extend the input voltage range more than 2 decades below the normal sensitivity; (5) Coupled with other Allison Modules for complete transistorized voltmeter systems which may be built into test instrumentation.
In the specifications given herewith, data is supplied for the Model 660 Preamplifier at various gains and with maximum and minimum supply voltages. This displays the versatility of this unit in very low or medium level circuits. Note the wide range of frequencies which may be amplified when gain is limited to 20 db.

GAIN AT 1 KCPS: Variable from 20 db to 40 db.
GAIN STABILITY: Constant ±0.5 db from 0° to 50°C.
LOAD IMPEDANCE: Minimum recommended load impedance is 10,000 ohms.
AVERAGE CURRENT: 1 ma.
SIGNAL-TO-NOISE RATIO: 85 db with 40 db gain, and 22.5 VDC (Input shorted).

**IMPEDANCE**

<table>
<thead>
<tr>
<th>Input (Minimum)</th>
<th>Output (Maximum)</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 db</td>
<td>30 db</td>
</tr>
<tr>
<td>42K</td>
<td>40K</td>
</tr>
</tbody>
</table>

NOTES: Temperature variation of 0°C to 50°C will cause negligible change.