

PHEMT (GaAs FET) Preamplifiers

Angle Linear

Angle Linear has been producing GaAs FET preamplifiers for well over two decades. Primarily used in commercial applications, these preamplifiers represent the best of present day technology in receiver front end design. We now use PHEMT devices in our GaAs FET type preamplifiers.

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Common port inductance, an integral part of every amplifier design, yields excellent input and output return losses while maintaining the low noise figure characteristics of GaAs FET devices and enhancing stability. Angle Linear guarantees unconditional stability of every preamplifier. There are no stability problems when cascading our preamplifiers with Hi-Q band pass filters in repeater and receiver multicoupler applications. Filter-duplexer response curves are not altered by the input and output characteristics.

Useable bandwidth for noise figure, gain and return loss are typically 10 percent at the operating frequency by design. Preamplifiers are available on any frequency up to several GigaHertz.

Output compression levels are typically +12 dBm and 3rd order intercepts are typically >+25 dBm. Higher level units are available, see our "HY" series of PHEMT preamplifiers.

Noise figure is typically 0.4 dB below 500 MHz, 0.7 dB to 1 GHz, 0.8 dB to 1500 MHz and 0.9 dB to 2 GHz. Gain is typically: >20 dB below 300 MHz; >17 dB to 510 MHz; 14 dB to 850 MHz; and 13 dB to 1.3 GHz and 12 dB to 2 GHz. Input and output return loss are typically much greater than 14 dB. Dual stage amplifiers are available if higher gains are required.

Every preamplifier has over and reverse voltage protection. An external high voltage transient suppressor provides 40kV, 1 micro sec. pulse protection. Internal voltage regulation permits operation from +9 to +18 VDC with higher voltage options available. For voltages greater than +18 VDC an external dropping resistor should be employed. Filtering on the DC terminal provides >70 dB attenuation from 20 MHz to several GigaHertz. DC current requirement is typically 40 mA per amplifier stage.



Construction is rugged: an irradiated aluminum enclosure with stainless steel hardware throughout. Twenty screws attach the covers and give maximum shielding for the most hostile RF environments. TriMetal plated connectors have ptfe (Teflon) dielectric with gold pins and are available in type N, TNC and SMA (ss). Dimensions: 1.5"x 2.5"x 0.7". Mounting and connector positions give maximum versatility for high density rack panel mounting.

To order: specify center frequency of operation (MHz), G suffix for PHEMT, type of connector, Example:465GNT: 465 MHz plus and minus >20 MHz from center frequency, PHEMT device, N connectors and "T" suffix = top connector mounting, Dual stage models, add "2X" prefix, available from 300 to 2500 MHz only, 10 % band width. Connectors: N = N, T = TNC and S = SMA. Suffix of 24V indicates + 24 VDC operation at 40 mA.

Angle Linear also produces: Hi intercept PHEMT & Bipolar preamplifiers, Receiver Multicouplers, Preselectors, band pass filters, Window Filters, Duplexers, Notch Filters, FET preamplifiers, Bias Tees, and we also do developmental work in receivers.

Specifications subject to change.

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