

1 GHz Line Extenders – 2PAC-S2 (GaN)

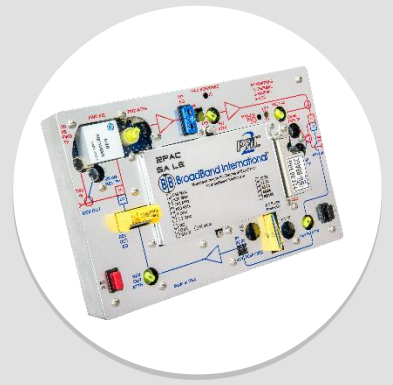
Replaces/Upgrades Scientific Atlanta® 550/625/750/870 Systems

The 2PAC-S2 enhanced system amplifier module from Broadband International® is designed to drop into any existing SA I, II, III or GainMaker® line extender housing. The forward bandwidth is up to 1 GHz and may be optimized for any bandwidth from 550 to 1 GHz. This is accomplished by alignment of the interstage response network and by the type of cable equalizers utilized. Performance may be optimized by the choice of GaAs or GaN hybrids to achieve different operating gains. The amplifier accepts any standard Scientific Atlanta® II or III style equalizer and SXP style pads.

The use of plug-in GaAs or GaN hybrids makes this system amplifier easier to service than the OEM models now offered utilizing surface-mounted gain blocks. The internal losses of our design have been minimized to provide the lowest possible RF distortions. The 2PAC-S2 is designed as a drop in solution for older 400 to 870 MHz systems.

The interstage EQ and Pad sets the output gain and slope for maximum performance. RF test points are provided at both input and output ports. The forward output RF test port may also be utilized as a reverse sweep input port with suitable RF sweep test equipment. All the test ports are directional couplers with a resistive pad to provide an accurate -20 dB reference level.

The diplex filters are plug in independent filters that can be changed in the field at a future date if a different reverse split is desired.



Features:

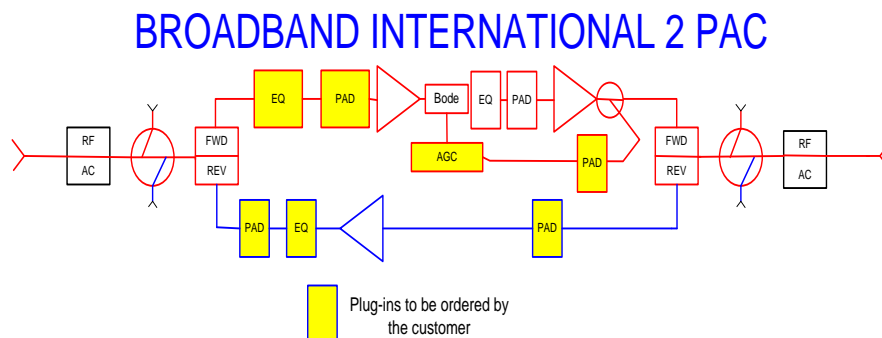
- Specified bandwidth performance from 550 MHz up to 1 GHz
- Utilizes Scientific Atlanta® plug-in equalizers and SXP style pads
- Multiple options for return path bandwidth
- GaAs or GaN plug-in hybrid technology
- Plug-in diplex filter for future reverse split changes

| 2PAC-S2 (GaN) LE Amplifier Conversion Performance to 1 GHz | | | | |
|------------------------------------------------------------|-------------------------------------------------|----------|----------|---------|
| Analog Channels | 79 | 95 | 110 | Return |
| *** 2PAC-S2 LE *** | -20 dB (+/- 1 dB) Dual Test Points on ALL Ports | | | |
| Frequency Response (dB) | +/- 0.75 | +/- 0.75 | +/- 0.75 | +/- 0.5 |
| Return Loss (-dB) | 16 | 16 | 16 | 16 |
| Noise Figure (-dB) | 8 | 8 | 8 | |
| Operational Gain - Manual | 40 | 40 | 40 | 20 |
| Operational Gain - Thermal | 36 | 36 | 34 | 20 |
| Operational Gain - AGC | 35 | 35 | 35 | 20 |
| Slope Range (dB) | 8 (+EQ) | 8 (+EQ) | 8 (+EQ) | EQ |
| AC Hum Mod @ 10A (-dB)[15A max] | -65 | -65 | -65 | -65 |
| Output Level (typical) | 53 | 53 | 53 | 40 |
| Output Slope (typical) | 14.5 | 14.5 | 14.5 | N/A |
| Input Hybrid Technology | GaAs PP | GaAs PP | GaAs PP | N/A |
| Output Hybrid Technology | PD GaN | PD GaN | PD GaN | Si PP |
| Composite Triple Beat (AGC) | 70 | 68 | 65 | 90 |
| Cross-Modulation (AGC) | 65 | 63 | 62 | 82 |
| Composite Second Order (AGC) | 73 | 71 | 69 | 80 |

| 2PAC-S2 | I DC | GaN | AC Voltage | | | | | | | | | | |
|---------|------|-----------------|------------|------|------|------|------|------|------|------|------|------|------|
| | | | 90 | 85 | 80 | 75 | 70 | 65 | 60 | 55 | 50 | 45 | 40 |
| Manual | 0.84 | AC current draw | 0.47 | 0.49 | 0.51 | 0.53 | 0.56 | 0.6 | 0.64 | 0.68 | 0.75 | 0.81 | 0.85 |
| AGC | 0.94 | AC current draw | 0.53 | 0.55 | 0.57 | 0.6 | 0.64 | 0.68 | 0.72 | 0.78 | 0.84 | 0.92 | 0.94 |

2PAC-S2 (GaN) Diagram and Ordering Information

The following Required Accessories highlighted in yellow must be ordered separately (all other pads and equalizers are provided)



The Broadband International® 2PAC-S2 amplifier can be configured in many different frequencies and options. Please consult your account representative for assistance with specific plug-in options.