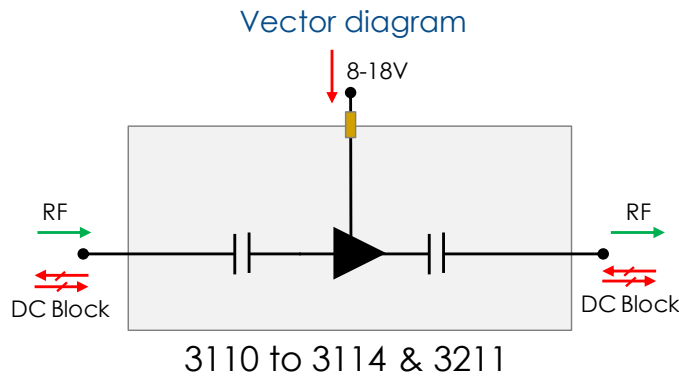


L-band Amplifiers



The 3110-3114 & 3211 series of L-band amplifiers offer flat frequency versus gain characteristics over 850 to 2150MHz with DC block on both ports and gain options of 10, 15, 20, 25 and 30dB.

These components are available with the following RF connector options: 50 Ω SMA, N-type, BNC and 75 Ω BNC or F-type.



Maximum acceptable operating parameters for reliable and safe operation

| Parameter | Value | Comment |
|----------------------------|----------------|---|
| Input RF power | +16 dBm (40mW) | Max total RF power |
| Max voltage: RF ports | 24V | DC pass on all RF ports |
| Max voltage: DC bias input | 24V | |
| Max DC current | 500mA | This is max DC pass between the RF ports. |
| Operating temperature | 0 to 45 C | Indoor use only |
| Storage Temperature | -20 C to +75 C | |
| Humidity | 85% | Non-condensing |
| Altitude | 10,000 feet | Above Mean Sea Level |

! Operation beyond these limits may cause instantaneous and permanent damage.



A-GABL1-3110 to 3114 & 3211

L-band Gain Block Amplifiers



Typical performance over L-band operation, 850MHz to 2150MHz

| Model Number | Gain (dB) | Gain vs. Frequency variation (dB) | | Input return loss (dB) | | Output return loss (dB) | | 1dB GCP (dBm) | | IP3 (dBm) | NF (dB) |
|--------------|-----------|-----------------------------------|------|------------------------|------|-------------------------|------|---------------|------|-----------|---------|
| | | Typ. | Max. | Typ. | Max. | Typ. | Max. | Typ. | Max. | | |

Model 3111 (8-18V DC bias)

| | | | | | | | | | | | |
|-------------------|--------|------|--------|----|----|----|----|----|----|----|----|
| A-GABL1-3111-S5S5 | 10±1.5 | ±0.4 | ±0.8 | 17 | 12 | 17 | 12 | 12 | 10 | 22 | 10 |
| A-GABL1-3111-N5N5 | 10±1.5 | ±0.4 | ±0.8 | 17 | 10 | 17 | 12 | 12 | 10 | 22 | 10 |
| A-GABL1-3111-B5B5 | 10±1.5 | ±0.6 | ±1.0 | 15 | 10 | 15 | 12 | 12 | 10 | 22 | 10 |
| A-GABL1-3111-B7B7 | 10±1.5 | ±0.8 | ±0.1.2 | 14 | 8 | 14 | 10 | 12 | 10 | 22 | 10 |
| A-GABL1-3111-F7F7 | 10±2.0 | ±0.9 | ±1.5 | 12 | 8 | 12 | 8 | 12 | 10 | 22 | 10 |

Model 3112 (8-18V DC bias)

| | | | | | | | | | | | |
|-------------------|--------|------|-------|----|----|----|----|----|----|----|---|
| A-GABL1-3112-S5S5 | 15±1.0 | ±0.5 | ±0.8 | 17 | 13 | 18 | 14 | 13 | 10 | 22 | 9 |
| A-GABL1-3112-N5N5 | 15±1.5 | ±0.5 | ±0.8 | 17 | 13 | 18 | 14 | 13 | 10 | 22 | 9 |
| A-GABL1-3112-B5B5 | 15±1.5 | ±0.5 | ±1.0 | 16 | 13 | 17 | 12 | 13 | 10 | 22 | 9 |
| A-GABL1-3112-B7B7 | 15±1.5 | ±0.7 | ±1.0 | 12 | 10 | 14 | 10 | 13 | 10 | 22 | 9 |
| A-GABL1-3112-F7F7 | 15±1.5 | ±1.0 | ±1.25 | 10 | 6 | 10 | 6 | 13 | 10 | 22 | 9 |

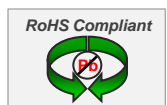
Model 3211 (This is same as 3112 but 12 to 24V DC bias)

| | | | | | | | | | | | |
|-------------------|--------|------|-------|----|----|----|----|----|----|----|---|
| A-GABL1-3211-S5S5 | 15±1.0 | ±0.5 | ±0.8 | 17 | 13 | 18 | 14 | 13 | 10 | 22 | 9 |
| A-GABL1-3211-N5N5 | 15±1.5 | ±0.5 | ±0.8 | 17 | 13 | 18 | 14 | 13 | 10 | 22 | 9 |
| A-GABL1-3211-B5B5 | 15±1.5 | ±0.5 | ±1.0 | 16 | 13 | 17 | 12 | 13 | 10 | 22 | 9 |
| A-GABL1-3211-B7B7 | 15±1.5 | ±0.7 | ±1.0 | 12 | 10 | 14 | 10 | 13 | 10 | 22 | 9 |
| A-GABL1-3211-F7F7 | 15±1.5 | ±1.0 | ±1.25 | 10 | 6 | 10 | 6 | 13 | 10 | 22 | 9 |



ETL Systems Ltd, Coldwell Radio Station, Madley, Hereford, HR2 9NE, England

ETL Systems design, develop and manufacture specialist equipment for satellite ground stations. For a full description of the ETL product range, please see our website at www.etlsystems.com. This product range provides the basis for meeting your specific demands.



Tel +44 (0)1981 259020
 Fax +44 (0)1981 259021
info@etlsystems.com

A-GABL1-3110 to 3114 & 3211

L-band Gain Block Amplifiers



Typical performance over L-band operation, 850MHz to 2150MHz

| Model Number | Gain (dB) | Gain vs. Frequency variation (dB) | | Input return loss (dB) | | Output return loss (dB) | | 1dB GCP (dBm) | | IP3 (dBm) | NF (dB) |
|--------------|-----------|-----------------------------------|------|------------------------|------|-------------------------|------|---------------|------|-----------|---------|
| | | Typ. | Max. | Typ. | Max. | Typ. | Max. | Typ. | Max. | | |

Model 3110 (8-18V DC bias)

| | | | | | | | | | | | |
|-------------------|--------|------|-------|----|----|----|----|----|----|----|---|
| A-GABL1-3110-S5S5 | 20±1.5 | ±0.5 | ±0.7 | 18 | 14 | 22 | 18 | 15 | 12 | 25 | 8 |
| A-GABL1-3110-N5N5 | 20±1.5 | ±0.5 | ±0.7 | 18 | 14 | 22 | 18 | 15 | 12 | 25 | 8 |
| A-GABL1-3110-B5B5 | 20±1.5 | ±0.5 | ±0.8 | 16 | 14 | 22 | 18 | 15 | 12 | 25 | 8 |
| A-GABL1-3110-B7B7 | 20±1.5 | ±0.7 | ±1.0 | 14 | 12 | 18 | 14 | 15 | 12 | 25 | 8 |
| A-GABL1-3110-F7F7 | 20±2.0 | ±1.0 | ±1.25 | 14 | 10 | 16 | 12 | 15 | 12 | 25 | 8 |

Model 3113 (8-18V DC bias)

| | | | | | | | | | | | |
|-------------------|--------|------|-------|----|----|----|----|----|---|----|---|
| A-GABL1-3113-S5S5 | 25±1.5 | ±0.5 | ±0.7 | 17 | 15 | 20 | 18 | 11 | 9 | 18 | 8 |
| A-GABL1-3113-N5N5 | 25±1.5 | ±0.5 | ±0.7 | 17 | 15 | 20 | 18 | 11 | 9 | 18 | 8 |
| A-GABL1-3113-B5B5 | 25±1.5 | ±0.6 | ±0.8 | 16 | 15 | 20 | 18 | 11 | 9 | 18 | 8 |
| A-GABL1-3113-B7B7 | 25±1.5 | ±1.0 | ±1.0 | 14 | 13 | 16 | 14 | 11 | 9 | 18 | 8 |
| A-GABL1-3113-F7F7 | 25±2.0 | ±1.2 | ±1.25 | 14 | 10 | 14 | 12 | 11 | 9 | 18 | 8 |

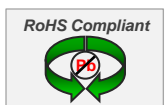
Model 3114 (8-18V DC bias)

| | | | | | | | | | | | |
|-------------------|--------|------|-------|----|----|----|----|----|----|----|---|
| A-GABL1-3114-S5S5 | 30±2 | ±0.7 | ±0.9 | 15 | 12 | 16 | 12 | 15 | 12 | 25 | 8 |
| A-GABL1-3114-N5N5 | 30±2 | ±0.7 | ±0.7 | 15 | 12 | 16 | 12 | 15 | 12 | 25 | 8 |
| A-GABL1-3114-B5B5 | 30±2 | ±0.8 | ±0.8 | 14 | 12 | 16 | 12 | 15 | 12 | 25 | 8 |
| A-GABL1-3114-B7B7 | 30±2 | ±1.0 | ±1.0 | 12 | 10 | 12 | 8 | 15 | 12 | 25 | 8 |
| A-GABL1-3114-F7F7 | 30±2.5 | ±1.2 | ±1.25 | 10 | 6 | 10 | 6 | 15 | 12 | 25 | 8 |



ETL Systems Ltd, Coldwell Radio Station, Madley, Hereford, HR2 9NE, England

ETL Systems design, develop and manufacture specialist equipment for satellite ground stations. For a full description of the ETL product range, please see our website at www.etlsystems.com. This product range provides the basis for meeting your specific demands.



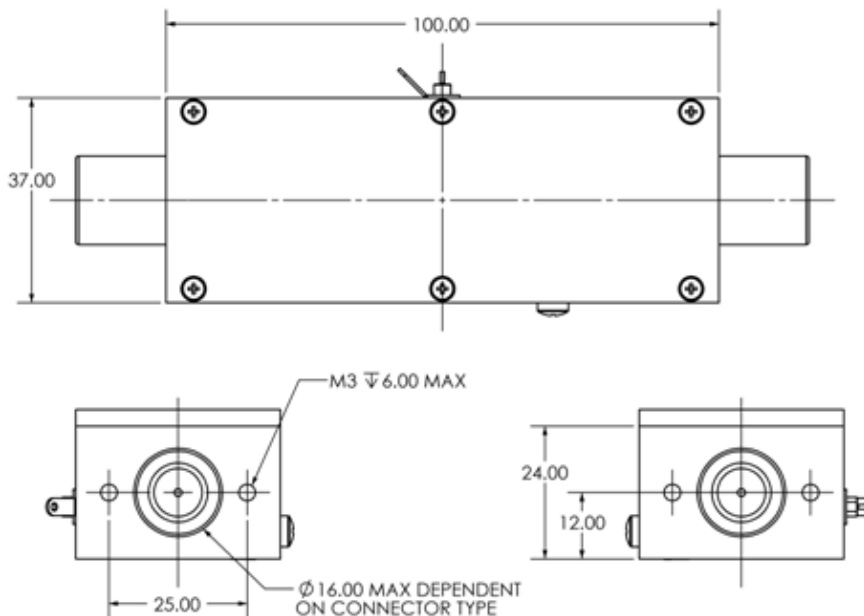
Tel +44 (0)1981 259020
 Fax +44 (0)1981 259021
info@etlsystems.com

A-GABL1-3110 to 3114 & 3211

L-band Gain Block Amplifiers



Physical dimensions



Alternative L-band Gain Block Amplifiers

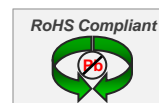
| Model Numbers | Bias Option* | Freq vs. Gain | Gain Options (dB) | Other features |
|---------------|--------------|---------------|-------------------|---------------------------------------|
| 3110-3114 | External | Flat | 10 to 30 | DC block on all ports |
| 3130-3134 | In-line | Flat | 10 to 30 | DC pass on all ports |
| 3135 | In-line | Flat | 25dB | DC block on input port only |
| 3136 | In-line | Flat | Unity | 10MHz and DC pass on all ports |
| 3140-3143 | External | Flat | 10 to 25 | 10MHz pass and DC block on both ports |
| 3145-3147 | External | 3dB +ve slope | 10, 15, 20 | DC block on both ports |
| 3148-3150 | External | 6dB +ve slope | 10, 15, 20 | DC block on both ports |
| 3151-3153 | In-line | 3dB +ve slope | 10, 15, 20 | DC block on input port only |
| 3154-3156 | In-line | 6dB +ve slope | 10, 15, 20 | DC block on input port only |
| 3204 | External | Flat | Unity | 10MHz pass and DC block on both ports |
| 3207-3209 | In-line | Flat | 15, 20, 28 | 10MHz and DC pass on all ports |
| 3210 | External | Flat | 30 dB | 10MHz and DC pass |

* In Line bias: This option requires DC on an RF port



ETL Systems Ltd, Coldwell Radio Station, Madley, Hereford, HR2 9NE, England

ETL Systems design, develop and manufacture specialist equipment for satellite ground stations. For a full description of the ETL product range, please see our website at www.etlsystems.com. This product range provides the basis for meeting your specific demands.



Tel +44 (0)1981 259020
 Fax +44 (0)1981 259021
info@etlsystems.com