

VGU010

10-Channel, Modular, Variable/ Fixed Gain Unit









The **VGU010** system provides fixed gain &/ or attenuation control of L-Band or IF based signals, which can be used for balancing during commissioning to overcome differences in cross-site cable losses, as well as providing a useful facility for earth station operators to adjust the gain of UpLink/ DownLink chains remotely.

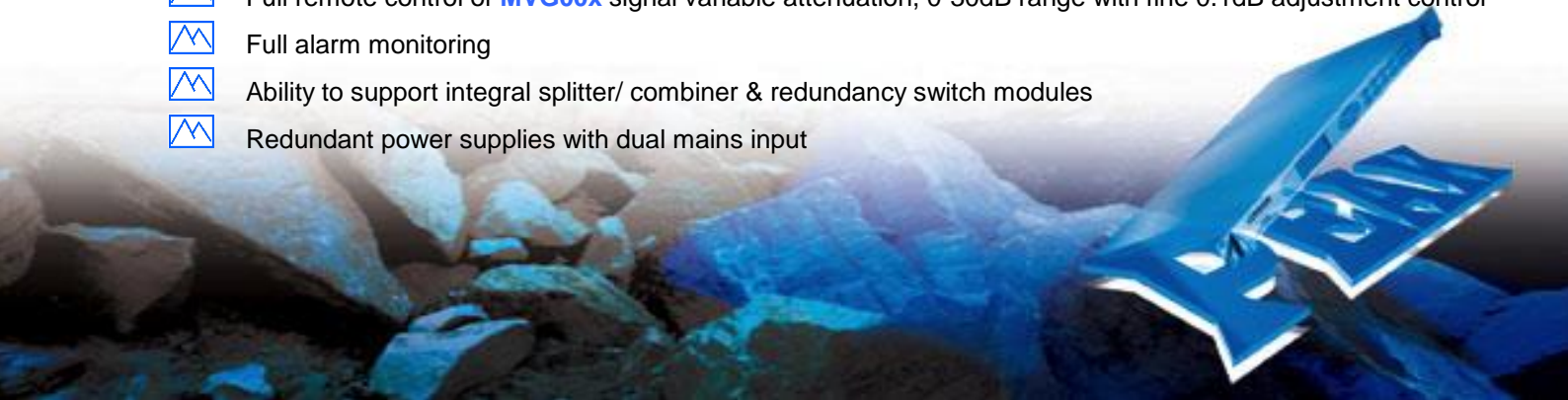
The **VGU010** is a multi-channel variable gain unit which can accommodate up to 10 **MVG00x** variable attenuation channels or **MFG00x** fixed gain channels, each of which are modular, 'hot-swappable' and can be inserted/ replaced in the **VGU010** unit from the rear without the need to remove power or disturb the other channels in any way.

The **MVG00x/ MFG00x** modules are available for use at either IF (70MHz \pm 18MHz/ 140MHz \pm 36MHz) or L-Band (950-2150MHz) and can be positioned in either the UpLink or DownLink chain. Each module houses a single IF or L-Band channel and can be fitted with fail-safe switching option.

The **VGU010** chassis is mains powered with dual (redundant), modular, hot-swappable power supplies, as standard.

Peak Features

-  Flexible; modular, 'hot-swappable', expandable solution
-  Ease of system commissioning and balancing of cross-site losses
-  Full remote control of **MVG00x** signal variable attenuation, 0-30dB range with fine 0.1dB adjustment control
-  Full alarm monitoring
-  Ability to support integral splitter/ combiner & redundancy switch modules
-  Redundant power supplies with dual mains input



VGU010 chassis – Typical Specification

Number of channels 1 to 10 (each MVG00x/ MFG00x denotes a single channel)

MVG00x – Variable Attenuation Module

RF Performance

| | |
|---|--|
| MVG001; | 50-200MHz |
| MVG002; | 950-2150MHz |
| Connector type | SMA (f), 50Ohm |
| DC & 10MHz pass (Option 4) | Allows DC & 10MHz signals on the L-Band input to be passed through to the output |
| 1 dB GCP | Input 0dBm, output +1dBm |
| Return loss | 14dB nom (input and output) |
| Insertion loss | 1dB nom (L-Band), at min attenuation |
| Option 6a; | Gain of 15dB nom, at min attenuation |
| <i>Note; for other gain options please contact the factory</i> | |
| Attenuation control | 0-30dB, stepped 0.1dB |
| Gain stability | ±0.5dB from 0 to 40°C |
| Gain flatness | ±0.1dB per week (constant temp) |
| | ±1.5dB (MVG002 over full band) |
| | ±0.5dB (across any 36MHz in band) |
| | ±0.5dB over IF band (MVG001) |
| Bypass (Option 5) | Fail-safe switching to external user selectable pad |
| Bypass connection | SMA (f), 50Ohm (2 connections per channel) |
| Bypass insertion loss | 1dB (plus external pad fixed attenuation value) |
| <i>* The addition of options 4 & 5 may modify the performance (for details please contact the factory).</i> | |

MFG00x – Fixed Gain Module

RF Performance

Note; performance as above, unless stated below;

| | |
|---|---------------------------------|
| MFG001; | 50-200MHz |
| MFG002; | 950-1450MHz |
| MFG003; | 950-1750MHz |
| MFG004; | 950-2150MHz |
| RF input power | -10dBm max (no load, no damage) |
| TOIP | +25dBm |
| 1dB output GCP | +13dBm |
| Return loss | 16dB nom (input and output) |
| Gain | 20dB nom |
| Option 7a; | 30dB nom |
| Option 7b; | 40dB nom |
| <i>Note; for other gain options please contact the factory</i> | |
| Gain flatness | ±0.25dB (bandwidths ≤500MHz) |
| | ±0.5dB (MFG003) |
| | ±1dB (MFG004) |
| <i>* The addition of options 4 & 5 may modify the performance (for details please contact the factory).</i> | |

Other

Mechanical

| | |
|--------------|------------------------------|
| Width | 19", standard rack mount |
| Height | 2U (3.5") |
| Depth | 534mm (21"), plus connectors |
| Construction | Aluminium chassis |
| Weight | |
| VGU010 | Approx. 4kgs (9lbs) |
| MVG/ MFG | Approx. 0.5kg (1lb) |
| MPS001 | Approx. 0.5kg (1lb) |

Environmental

| | |
|----------------|----------------------------|
| Operating temp | -10°C to +50°C |
| EMC | EN55022 part B & EN50082-1 |
| Safety | EN60950 |

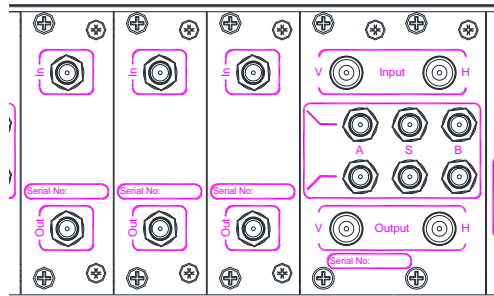
MPS001 power supply (modular, dual, redundant)

Note; 2off supplied as standard with the VGU010 unit, spare modules available

| | |
|-----------------|--|
| Input voltage | 90-264VAC |
| Input frequency | 47-63Hz |
| Power | 100 Watts max. (10 channels installed) |

Redundancy switching modules

Chassis can support up to 2off 2+1 redundancy switching modules for variable gain systems (option dependent), please consult factory for details and availability.



Control System Interface

| | |
|----------------|-----------------------|
| Remote control | Ethernet |
| Alarms | PSU 1 & 2 failure |
| | Channel alarms (1-10) |
| Connector | MDR, 50-way |

Options

- 4) DC & 10MHz pass-through
- 5) Fail safe by-pass switching
- 5b) Fail safe by-pass attenuator links for option 5
- 6a) 15dB nominal MVG00x gain (at minimum attenuation)
- 7a) 30dB nominal MFG00x gain
- 7b) 40dB nominal MFG00x gain

Notes; the addition of options can modify the typical specification, for details please consult the factory

Rear Panel View (shown with 10 channels fitted)

