

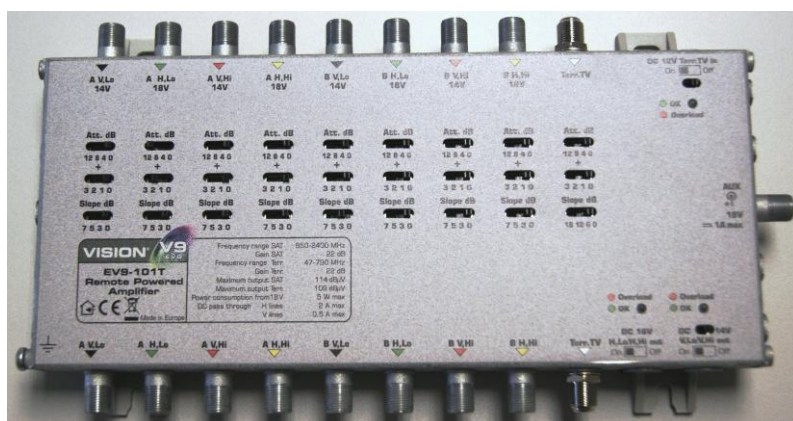
Datasheet

V9-EVO Integrated Reception Equipment

V9-EVO is modelled on the brand leading V5 EVO, the UK's most popular IRS equipment. EV9 is designed for reception from two satellites giving receivers access to all bands and polarities from a single output port. The building block architecture allows for cascaded or radial distribution in small, medium and large IRS installations with minimal power consumption. Up to 5 multiswitches can be built into a system without the need of a separate amplifier.

V9-EVO is designed to reject 4G-800 LTE interference with the terrestrial input filter for 47 to 790MHz, and is powered via the H:Lo and H:Hi trunk cables at 18V or locally, directly into the multiswitches via the auxiliary DC input.

- Designed for large, medium and small, line or locally powered IRS installations
- Power from headend or anywhere on H: Hi/Lo trunk cables via remote or local power supply
- Terrestrial filter to suppress 4G/LTE interference
- Slider attenuators/slope controls for stability and reliability
- Fully screened diecast housings for extreme interference immunity
- Pre-mounted earth bars and 6mm² earth post



EV9 Taps and Splitters for 9-cable trunk IRS installations

EV9-210 1-way -10dB tap

EV9-220 1-way -20dB tap

EV9-204 2-way equal splitter (-4dB)

EV9-408 4-way equal splitter (-8dB)



- Low insertion loss with extremely flat response
- UK standard colour coded cable connections
- DC Pass 2.0A to through line and switchable DC pass to H tap lines
- Signal de-emphasis on tap output – flat response on splitters
- Factory pre-mounted earth bars with + 6mm² earth post
- High quality / low VSWR connectors for 1.0mm Type 100 coaxial cable

V9-EVO uses a range of two taps and two splitters to form a trunk wired, tree & branch structure. The taps of 10dB and 20dB side loss with extremely low through loss, reduce trunk signal levels to the ideal input level of the active multiswitches. Should the trunk signal level require further reduction, the multiswitches have input attenuators on each polarity for adjustment to the ideal level.

The 2-way and 4-way splitters have low insertion loss and are ideal for splitting trunk signals or creating an evenly balanced radial distribution.

Each splitter and tap can be used to control the DC power to the tapped output so as to distribute or isolate power to part of the system as required.

EV9 taps and splitters are supplied with factory fitted, high quality quick-connect earth bars for continuation of the safety earth along the trunk or distribution cables. These permit the removal of a component without compromising the earth continuity.

EV9-204, EV9-408, EV9-210 and EV9-220 Taps & Splitter specification

| Model | | EV9-210 | EV9-220 | EV9-204 | EV9-408 |
|-----------------------------|------|---|------------|--------------------|--------------------|
| Frequency range | SAT | 8 inputs 950 – 2400MHz | | | |
| | TERR | 1 input 5 – 862MHz | | | |
| Number of tap outputs | | 1 x 9 Tap | 1 x 9 Tap | 2-way x 9 splitter | 4-way x 9 splitter |
| Insertion loss | SAT | 2.0dB | 1.0dB | 4dB | 8dB |
| | TERR | 2.0dB | 1.0dB | 4dB | 8dB |
| Tap loss 950-2400MHz | SAT | 8 to 12dB | 18 to 22dB | - | - |
| Tap loss 47 – 790MHz | TERR | 10dB | 20dB | - | - |
| Input isolation | SAT | 30dB | | | |
| | TERR | 30dB | | | |
| DC pass | | 2.0A max (switchable to tap or split outputs) | | | |
| Operating temperature range | | -20° to 50° C | | | |
| Dimensions | | 120 x 1120 x 51mm | | | 254 x 120 x 51mm |
| Weight | | 0.45kg | | | 0.8kg |

Datasheet**EV9 Line Powered Multiswitches**

| | |
|----------------|--|
| EV9-908 | 9-Input, 8-output radial or cascade multiswitch |
| EV9-912 | 9-Input, 12-output radial or cascade multiswitch |
| EV9-916 | 9-Input, 16-output radial or cascade multiswitch |
| EV9-924 | 9-Input, 24- output radial or cascade multiswitch |
| EV9-932 | 9-Input, 32-output radial or cascade multiswitch |



- **Designed for 9-wire (2 - satellite + 1 terrestrial input)**
- **Power from headend, line powered via horizontal trunk cables or local power**
- **Very low current consumption**
- **Active satellite and terrestrial minimises need for additional amplifiers**
- **Terrestrial signal always active, satellite only when receiver connected**
- **Slider level controls for all satellite and terrestrial inputs**
- **High output with stepped gain for short and long subscriber cables from same multiswitch**
- **Earth bonding bars factory pre-mounted**
- **LED power indicator**

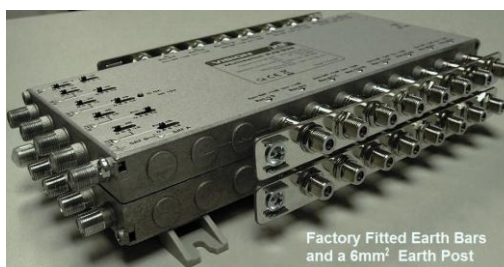
There are five line/local - powered multiswitches in the V9-EVO range. The 8, 12, 16, 24 and 32 output multiswitches are built in high quality zinc alloy diecast housings for extreme immunity to interference as well having high rigidity and stability for installation in all but the harshest indoor environments.

EV9 multiswitches are fully active minimising the need for headend amplifiers except in larger systems. Despite being active, EV9 multiswitches are designed for low current consumption where the built-in satellite amplifiers are only active if a satellite receiver is connected. This allows for only the terrestrial circuits and LNB to be powered via the trunk when no satellite signals are required.

All multiswitches have stepped gain at each bank of eight outputs to balance subscriber signal levels and allow long (up to 90m) and short subscriber cables to be connected to the same multiswitch. This reduces system complexity and cost, making V9-EVO the professional choice.

EV9 Multiswitches cont'd

The input attenuators on V9-EVO multiswitches use slider switches for accurate and reliable control of the signal levels. These attenuators will not change in value over time unlike other designs, ensuring reliable and stable performance for life.



Slider level controls



| Model | EV9-908 | EV9-912 | EV9-916 |
|---|-----------------|--|-----------|
| Number of outputs | 8 | 12 | 16 |
| Frequency range | SAT IF | 950 to 2400MHz | |
| | Terr TV | 47 to 790MHz | |
| Gain (fixed slope pre-correction) | SAT IF | Outputs 1 to 4 | 9 – 14dB |
| | | Outputs 5 to 8 | 8 – 12dB |
| | | Outputs 9 to 12 | 7 – 10dB |
| | | Outputs 13 to 16 | 6 – 8dB |
| | Terr TV | Outputs 1 to 4 | 4 to 9dB |
| | | Outputs 5 to 8 | 4 to 8dB |
| | | Outputs 9 to 12 | 3 to 7dB |
| | | Outputs 13 to 16 | 2.5 – 6dB |
| Gain adjustment slide attenuators | SAT IF | 12dB by 4dB steps | |
| | Terr TV | 15dB by 1dB steps | |
| Output level SAT IF (IMD3=35dB) | | 93dBμV | |
| Output level Terr TV (DIN45004B) | Output 1 to 8 | 88dBμV | |
| | Output 9 to 12 | 86 dBμV | |
| | Output 13 to 16 | | 86 dBμV |
| SAT input isolation | | >30dB | |
| Output isolation | | >30dB | |
| Current consumption from receiver | | <60mA | |
| Current consumption from H lines or external power supply | | <160mA | |
| Control signals (Default SAT A) | | 14/18V, 0/22kHz, tone burst DiSEqC 1.0, DiSEqC 2.0 or compatible | |
| Operating temperature range | | -20° to 50° C | |
| Dimensions / Weight | | 187 x 135 x 30mm | |

Datasheet

| Model | EV9-924 | | EV9-932 |
|---|------------------|--|------------------|
| Number of outputs | 24 | | 32 |
| Frequency range | SAT IF | 950 to 2400MHz | |
| | Terr TV | 47 to 790MHz | |
| Gain (fixed slope pre correction) | SAT IF | Output 1 - 8 | 7 - 12dB |
| | | Output 9 - 16 | 6 - 10dB |
| | | Output 17 to 24 | 5 - 8dB |
| | | Output 25 to 32 | 4 - 6dB |
| | Terr TV | Output 1 - 8 | 4 - 9dB |
| | | Output 9 - 16 | 3 - 7dB |
| | | Output 17 - 24 | 2 - 5dB |
| | | Output 25 - 32 | 1 to 3dB |
| Gain adjustment slide attenuators | SAT IF | 12dB by 4dB steps | |
| | Terr TV | 15dB by 1dB steps | |
| Output level for SAT IF (IMD3=-35dB) | | 93dBμV | |
| Output level Terr TV (DIN45004B) | | Output 1 to 8 | 88dBμV |
| | | Output 9 to 16 | 86 dBμV |
| | | Output 17 to 24 | 84 dBμV |
| | | Output 17 to 24 | 84 dBμV |
| SAT input isolation | | >30dB | |
| Output isolation | | >30dB | |
| Current consumption from receiver | | <60mA | |
| Current consumption from H lines or external power supply | | <160mA | |
| Control signals (Default SAT A) | | 14/18V, 0/22kHz, tone burst DiSEqC 1.0, DiSEqC 2.0 or compatible | |
| Operating temperature range | | -20° to 50° C | |
| Dimensions / Weight | 227 x 135 x 30mm | | 267 x 135 x 30mm |

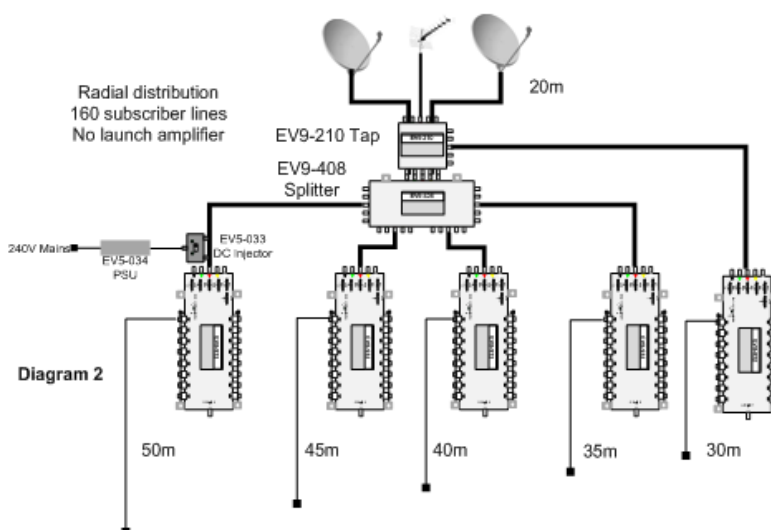
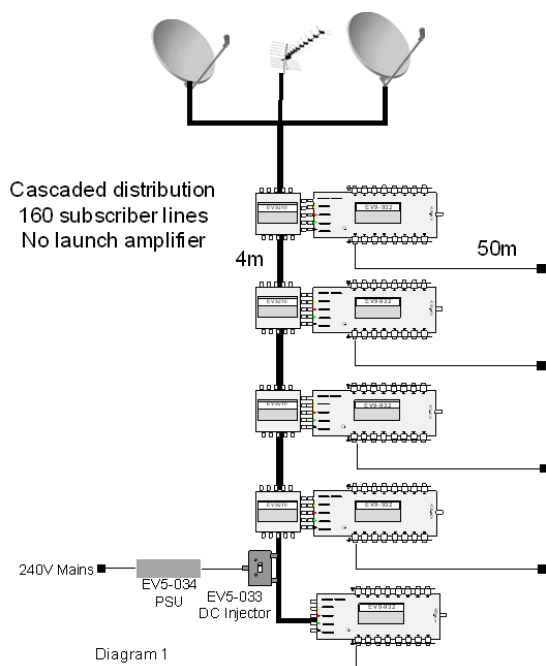


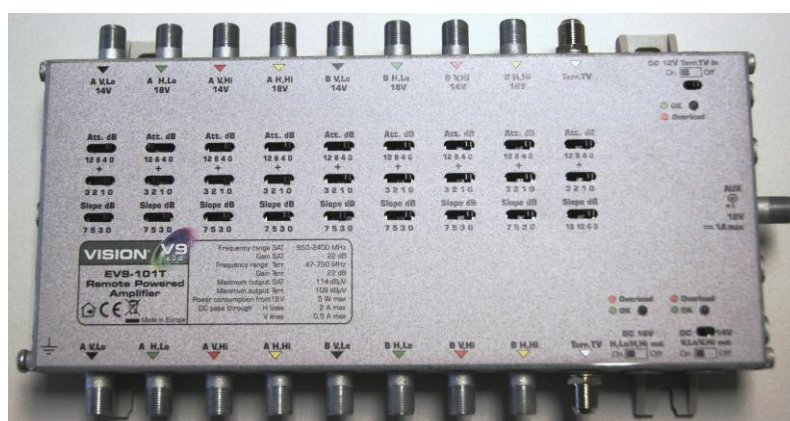
Diagram 1 shows a traditional “cascade” of EV9 9-wire taps and splitters feeding multiswitches positioned on each floor 4m apart. This distributes the signal along the 9-wire trunk, minimising the length of the subscriber lines for better subscriber signal balance. Power from an EV5-034 PSU can be injected into any of the horizontal polarity trunk cables using a V5-033 DC injector to line power the multiswitches via the taps and splitters.

The schematic in diagram 2 above shows the alternative “radial” distribution of 2 satellites plus terrestrial signal using EV9 equipment. Powering is via a EV5-034 18V 2.5A power supply into a EV5-033 line power DC injector into the H:Lo or H:Hi of the SAT A trunk cable.

These two system designs will deliver satellite and terrestrial signal to 160 subscriber cables without the need for an additional amplifier,. This makes EV9 very economical and efficient because EV9 multiswitches are active with sufficient gain to enable signal to be delivered 70m from the satellite dish.

For larger systems or longer trunk cables, a EV9-101T amplifier can be added to the headend to overcome additional cable attenuation losses. The amplifier can be line powered or directly powered via the auxiliary DC socket which can then power all the system from a central point.

EV9-101T Line Powered SAT / TERR universal headend / repeater amplifier



- Head-end and trunk amplifier for 8 x SAT + terrestrial with colour coded inputs/outputs
- 18V DC to power LNB and V9 network equipment (switchable)
- 2.0A DC pass via H Hi, H Lo line (switchable)
- Interstage level controls for SAT and Terrestrial inputs
- Slope control on terrestrial input
- Earth bonding post
- Switch-mode-power-supply on V9-100
- LED indicators for power status and short circuit / overload diagnostics
- Now with switchable 12V supply for terrestrial preamp

EV9-101T is a launch or line repeater amplifier designed for 9-wire IRS installations. The EV9-101T has 9 separate amplifiers, one for each satellite polarity and one for the terrestrial signals. This amplifier will also inject 18V DC power into a system at up to 2.0A from an external power supply (EV5-034 SMPS).

EV9-101T can also be powered via the horizontal trunk cables enabling the power to be injected anywhere into the system where the headend is not near a source of mains electrical supply. EV9-101T will pass up to 2A at 18V DC between the inputs and outputs for powering other devices.

This adds to the flexibility of EV9 systems where often the power source is in the basement or at ground level but the headend is required at the uppermost floors.

The EV9-101T always passes DC to its inputs for powering of LNBs or items of equipment on its input side and there is switchable DC pass to its outputs for powering of multiswitches and amplifiers at its output. Line powering is via the H lines and will pass up to 1A 18V DC on each line. This amplifier will also power a masthead pre-amplifier at 12V 100mA for convenience.

EV9-101T is equipped with slider attenuators and frequency slope controls for highly reliable fixed level attenuation which will not decay over time like more common types of attenuator.

| | | |
|--|------------------------------------|---|
| Model | EV9-101T | |
| Number of inputs | 8 x SAT + 1 x Terr | |
| Frequency of inputs / outputs | 950-2400MHz | 47-790MHz |
| Gain | SAT | 7-22dB gain (slider attenuators 0 -15dB in 1dB steps) |
| | Terr | 7-22dB gain (slider attenuators 0 -15dB in 1dB steps) |
| Slope | SAT | Slider control 0 / 3 / 5 / 7dB |
| | Terr | Slider control 0 / 6 / 12 / 18dB |
| Isolation | SAT / SAT | 30dB |
| | SAT / Terr | 30dB |
| Noise figure (typical) | ≤9dB | |
| Max output Terr DIN45004B (IMD ³ -60dB) | 109dBμV | |
| Max output SAT EN50083-3 (IMD ³ -35dB) | 114dBμV | |
| Network Powering | 18V / 2.0A max 14V / 0.5A max | |
| External powering | Through V lines | 14V 0.5A max (switchable) |
| | Through H lines | 18V / 2.0A max (switchable) |
| | Through Terr line | 12V 100mA (switchable) |
| DC pass (through current) on H Lines | 2.0A max (switchable) | |
| Power consumption | 9 - 18V DC / 6W / 330mA | |
| Operating Temperature | -20°C to + 50°C | |
| Dimensions & Weight | 255 x 135 x 32mm 0.86kg | |
| Packing | Individual carton, outer of 10pcs. | |

** Line powered via H lines or direct power via auxiliary DC socket

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