



### V5-EVO Splitters & Taps 4 x SAT + 1 x Terr

- EV5-204**    **2-way equal splitter**
- EV5-408**    **4-way equal splitter**
- EV5-210**    **Tap -10dB**
- EV5-210**    **Tap -20dB**



V5-EVO splitters are built to compliment all V5-EVO models is small, medium and large IRS installations. With class leading performance in terms of low insertion loss, cable slope pre-emphasis and linearity, these splitters and taps allow managed trunk signal distribution for 5-wire IRS. V5-EVO taps attenuate the signal to the side output while minimising trunk through losses. EV5 splitters provide equal division of the incoming signal to all ports.

V5-EVO splitters and taps pass DC on the through lines at up to 2A when the current is shared across 2 of the IF lines.

Model		V5-210	V5-220	V5-204	V5-408
Frequency range	SAT		4 x 950 – 2400MHz		
Terr			1 x 5 – 862MHz		
Number of tap outputs		1 x 5 Tap	1 x 5 Tap	1 x 5 splitter	4 x 5 splitter
Through loss	SAT	<2dB	<1dB	4dB	8dB
	Terr	<2dB	<1dB	4dB	8dB
Tap loss	SAT	10dB	20dB	4dB	8dB
	Terr	10dB	20dB	4dB	8dB
Input Isolation	SAT		30dB		
	Terr		30dB		
Return loss			>13dB		
DC through pass	H lines	2.0A max when shared across H:lo & H:hi (1A max through one line)			
DC through pass	Terr line	0.1A max			
Connectors		F female (F male quick to f female on earth bar) 1.0mm max centre conductor for direct connection 5 x F male quick to F male quick for close coupling of multiswitch			
Operating temperature		-20°C to +50°C			
Dimensions mm		126x135x30mm		267x135x30mm	
Weight		0.44kg		0.7kg	
All specification ±1dB					

Switchable DC is provided on the tap/splitter ports of the H:lo and H:hi lines.

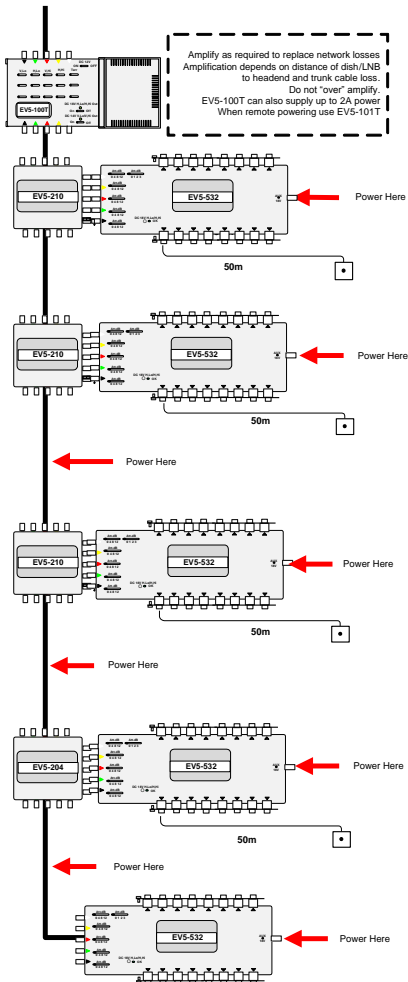
V5-EVO is designed to be installed using type 100 cable and larger sizes are usually unnecessary if the system is correctly planned.

V5-EVO taps and splitters are designed with high quality 1.0mm f-female sockets for high surface area contact and maximum return loss performance. Use only type-100 cable on inputs or outputs. For larger cables it is important to use the correct reducing pin connectors. Consult your cable/connector supplier. Do not force type-125 cable directly into the connectors as damage will occur.





V5-EVO is simple to plan and build into a fully operational and reliable IRS installation. Trunk levels remain low because each multiswitch has gain at satellite IF and terrestrial frequencies. In standard "tree-and-branch" or "cascaded" distribution, the cable losses are calculated and the appropriate tap value is inserted in the trunk to supply the multiswitch input with the correct signal level. This enables a balanced system as the multiswitches furthest from the amplifier require the least tap value and those nearest the amplifier require the greatest tap loss value.



Where a "star" network is required the multiswitches can be connected to a splitter/splitters to form an equi-distant cable network. Each multiswitch will be provided with the same signal levels for equal performance. Calculation of the cable attenuation based on the cable lengths can determine the correct amount of amplification.

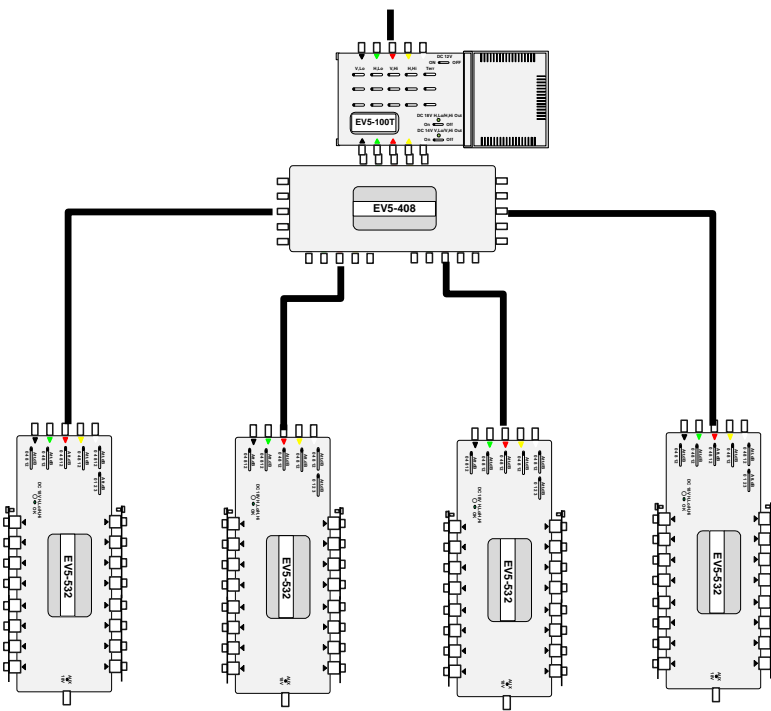
Further adjustment of the of the input signal can be made using the input attenuator switches on line powered models.

Combinations of "tree-and-branch" and "star" wired systems can be assembled to suit the building layout. Multiswitches can be close coupled or remote wired to a tap or splitter giving the flexibility to position the multiswitch nearer to the central position of apartments for best performance. Always try to position multiswitches as near to apartments as possible. Best practice and performance dictates that subscriber cables are best kept as short as possible.

It is always recommended to minimise the use of amplifiers. In analysis of technical support it was found that a high proportion of technical problems were due to too much amplification of both satellite and terrestrial signals. Avoid amplifying trunk signals and then immediately attenuating with a high tap value.

V5-EVO multiswitches have "stepped" gain outputs (shown in data above) to accommodate short and long subscriber lines with a 2dB step in each group of four (or eight on EV5-524 and 532) outputs. Gain is pre-emphasised to high frequencies to counteract the effects of cable slope attenuation.

The terrestrial input of V5-EVO amplifiers and multiswitches are filtered 47 to 790MHz. A terrestrial filter is fitted at the input to minimise 4G-800 LTE interference. The 4G-800 filter will cut LTE interference in each of the amplifier and the multiswitches by up to 14dB giving a total 28dB of protection in the network. Further filtering may be necessary due to local conditions.





V5-EVO systems are designed to be flexible for small, medium and large installations. Each design may have different powering requirements due to the nature and layout of the building. V5-034 switch-mode-power-supply is designed to provide up to 2.5A at 18V which is enough to power even the largest of installations with as many as 40 x EV5-532 multiswitches connected together. That's a total of 1,280 subscriber cables!

V5-033 is a switchable dual direction DC inserter ideal for remote powering of EV5 systems anywhere in the trunk cable. The DC can be diverted up, down or in both directions in a network. LED indicators confirm the direction of DC powering. V5-033 is fully screened for RF performance. This model is ideal for remote powering where mains voltage is not available for a headend power supply / amplifier.



### Equipotential Earthing Bonding

Current UK legislation and codes of practice require that aerial systems that join individual dwellings together, via a common cable system, are earthed to the main earth terminal (MET) of the building. This is for safety of the engineer working on the system as much as any resident using the network. All subscriber cables should be connected to the MET of the building with a 4mm<sup>2</sup> earth cable sheathed in the standard green and yellow striped earth wire.

When coaxial cable systems join separate buildings together, it may be necessary to provide galvanic isolation on trunk or subscriber cables between buildings. Galvanic isolation stops balancing currents flowing between each building with a different earth potential. These balancing currents can be dangerous.

Consult your trade association codes of practice and documentation for the correct procedure.

EV5-xxx multiswitches and taps/splitters are delivered with factory fitted earth-bars. These are fitted to the output sockets enabling removal of the all subscriber cables while the earth integrity remains intact for all subscribers. A 6mm<sup>2</sup> saddle and clamp earth post is also provided for connection and linking of each earth bar to the earth wire, making installation fast and safe. All specifications and performance detail are made with these earth-bars fitted.

### Locating equipment

All V5-EVO products are designed for indoor use only. A suitable indoor location or IP65 rated outdoor cabinet or housing should be found for installation of each component. Do not fit this equipment in areas of high humidity or allow equipment to come into contact with moisture or sources of heat. Ensure adequate drip loops are formed in input or outputs cables to divert any moisture away from electronic equipment.

When commissioning the installed system, connect all coaxial and DC cables before connection and powering from the mains. Accidental short-circuit may damage the equipment.

### System Design & Planning

Vision Products is pleased to offer a free system design, planning and technical support service. Ask your wholesaler for further details or contact us for further information.