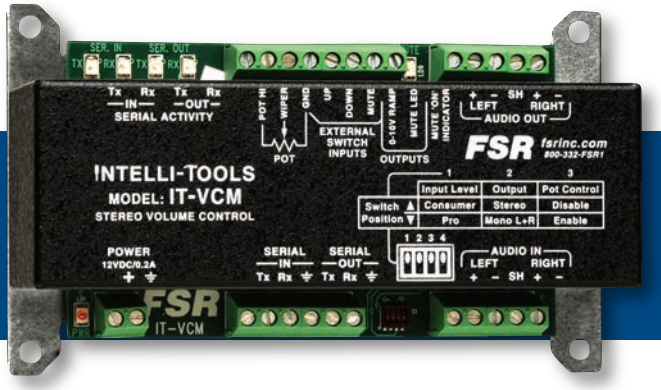
IT-VCM

ASCII or Hardware Controlled Line Level Volume Control Module with Serial Loop Through

AV Products Group



DESCRIPTION

The IntelliTools IT-VCM is a stereo or mono line level volume control module. The IT-VCM accepts a balanced or unbalanced stereo audio line level source and provides a balanced stereo output. The module is able to sum the stereo inputs to mono. An input gain switch can be set to boost the low audio level of consumer equipment to professional levels.

The unit can be used in any application where remote control of the audio level is desired, such as between the pre-out and main-in jacks of integrated amplifiers or receivers that were built without remote control.

The IT-VCM can be controlled three different ways; RS-232 commands, remote switches or remote potentiometer. The IT-VCM responds to simple ASCII RS-232 commands, providing control of volume, muting, balance, treble, bass, and serial loop out port baud rate. The IT-VCM can provide feedback on all of the above as well as pro/consumer, stereo/mono and pot enable settings.

A remote switch interface allows control of volume up, down, and mute functions via user provided external switches. Remote switches may be used concurrently with serial control.

A remote pot interface is provided to allow volume control from a user provided potentiometer. In this mode, the volume up and volume down switch inputs and the Volume serial commands are disabled. The remote pot may be used with the external mute switch. (See IT-VCM Operation Manual for details).

The module delivers a 0-10v ramp output that can drive a bar graph indicator (not provided). A mute output is also provided to drive an LED.

To control multiple sources, the IT-VCM modules can be "daisy-chained." This means that with only one source and one RS-232 port you can change the volume level in the different rooms individually. Most RS-232 devices including FSR's other IntelliTools modules can also be controlled.

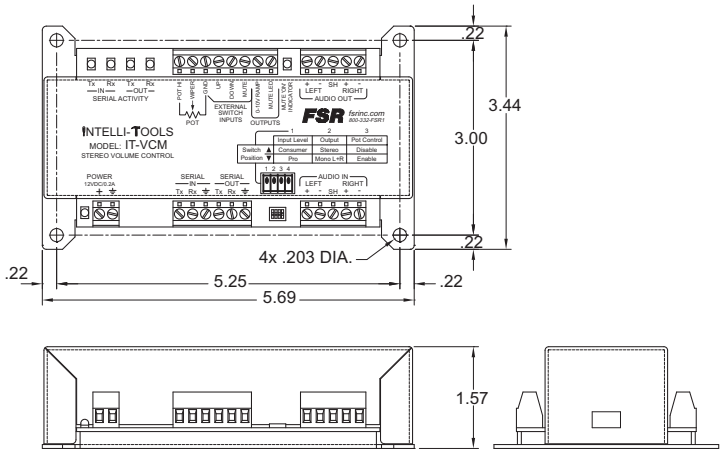
The module is powered from a standard 12 VDC power supply (not provided but available from FSR).

An integral mounting plate with four holes is provided to easily mount on FSR's RK-2 rack mount, standard rack rails or standard two RU blank plates.

The versatility of the IntelliTools family is limited only by your imagination.

FEATURES

- *Balanced / unbalanced into balanced output*
- *Stereo In to Mono out switch*
- *Control volume via RS-232, remote switches or external potentiometer*
- *O / +12dB consumer boost switch*
- *Serial activity indicators*
- *Power and mute indicators*



OPTIONS/ACCESSORIES

IT-PS1	*Power Supply 12VDC 1A*
PK	*10K ohm potentiometer and knob*
ACP	*Single gang Decora wall plate with volume push buttons and LED bar graph*
RK-2	*Rack mount shelf*

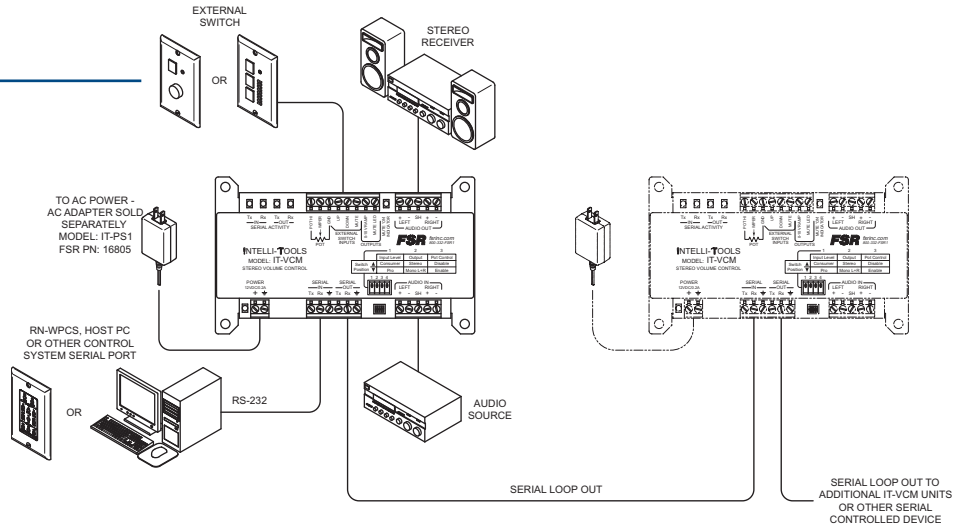
FSR Inc.
244 Bergen Boulevard, Woodland Park, NJ 07424
Phone: 973.998.2300 · Fax: 973.785.4207
Web: www.fsrinc.com · E-mail: sales@fsrinc.com
Toll Free: 1-800-332-FSR1

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TYPICAL APPLICATION

- *Home Theater*
- *Audio Source Muting*
- *Audio level status*
- *Remote volume control*

Multiple serial controlled devices can be daisy chained together through a serial loop though port without sacrificing a control port on the control system.



SPECIFICATIONS

Conditions unless noted: Volume= -10dB, Bass=0dB, Treble=0dB, Balance=Center, Mode=Stereo Pro 0dBm=1mW into 600 ohm; 0.775 Vrms

Input Number/Type	*1 stereo, balanced or unbalanced*
Connector	*Fixed 5 position screw terminal*
Impedance	*20k ohms balanced, 10k ohms unbalanced*
Maximum Input Level	*+18dBm (Pro mode), +6dBm (consumer mode) Volume set at -10dB*
CMRR	*>50dB*
Input Controls:	
Pro/Consumer mode	*Pro mode provides unity gain with volume set to 0 dB. Consumer mode provides +12dB boost.*
Mono/Stereo Mode	*Mono Mode provides L+R input sum fed to both left and right outputs*
Bass	*±15dB @ 40 Hz in thirty one 1dB steps (with volume =0dB) controllable from serial port only*
Treble	*± 15dB @ 16kHz in thirty one 1dB steps (with volume =0dB) controllable from serial port only*
Balance	*Left or Right channel cut by 20dB in thirty one steps controllable from serial port only*
Volume	*0 to -62dB in 1dB steps. The 63rd step provides full attenuation of at least 70dB controllable from pot, input switches or serial port.*
Mute	*Attenuates input signal by at least 95dB controllable from input switches or serial port.*
Output Number/Type	*1 Stereo balanced or unbalanced*
Connector	*Fixed 5 position screw terminal*
Impedance	*50 ohm balanced (intended to drive a 600 ohm or higher load)*
Maximum output level	*+13dBm*
Frequency response	*20 Hz-20kHz ±0.5dB*
S/N	*80dB*
THD	*0.1% @ 1kHz @ +2dBm in "Pro" mode*
Power	*+12 VDC @ 200 mA maximum*
Power Supply	*Universal input IT-PS1 (12VDC 1A supply available separately and will power up to five IT-VCM modules*
Connector	*Fixed 2 position screw terminal*
On Board LED indicators	*Power Input Supervisor, Mute Status, Serial Input Rx/Tx, Serial Output Rx/Tx*
Control Inputs	*Volume up, Volume down and Mute via contact closure to ground. 3K impedance*
Volume Potentiometer *(also see NOTE"*" below)*	*External 10K linear taper pot 3 wire connection (can also accept a 0-12VDC external control voltage)*
Mute LED Output	*3.3VDC output, 330 ohm impedance (direct drive to an external 10 mA LED*
Ramp Output	*0-10VDC output, 500 ohm impedance (Intended to drive a high impedance control system analog input or external bar graph display)*

*NOTES: *Must enable "Pot Control" mode switch to use pot. Volume Up/Down switches and serial control of volume are disabled when pot is enabled. Serial port can be used to query pot level setting. Mute switch is still active when pot is enabled.*

Settings retention All current settings are saved in non-volatile flash memory upon power loss. Settings include: Volume, Bass, Treble, Balance, Mute.

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Specifications are subject to change without notice.

244 Bergen Boulevard, Woodland Park, NJ 07424
Phone: 973.998.2300 · Fax: 973.785.4207
Web: www.fsrinc.com · E-mail: sales@fsrinc.com