

RR1890 UHF TACSAT Training Simulator

- **Reduce TACSAT Training Costs**
- **Harris AN/PRC-117F/G JTRS radio**
- **UHF TACSAT Training**
- **Allows Radios to Communicate Without an Expensive Satellite Link**
- **Repeatable Training**
- **Using Actual Radios**
- **No Radiation Hazard**
- **Portable System**

Raven Research Ltd has designed and developed a training aid to allow Harris AN/PRC117F/G UHF TACSAT radio operators to train and use their equipment without linking through an expensive satellite channel. The system allows for up to 5 radios to be connected simultaneously. The radios are connected directly to the training simulator via a BNC coaxial connector. The system is then controlled via a built in PC with a touch screen. Each of the radio connections is set to the relevant frequency channel and also to the desired quality of radio connection. Each radio channel has pre-programmed uplink and downlink frequencies. The instructor can set the quality of a communication link to be 'GOOD', 'OFF' or 'INTERMEDIATE' settings. There is also a facility to vary the 'intermediate' setting to allow more or less attenuation to be set

on any particular signal path. These setting allow the instructors to control the RF environment during training exercises.

Below is an example of the PC user interface showing the five TACSAT radios. Each one is colour coordinated so you can easily see the connections status. The below shows the following status:

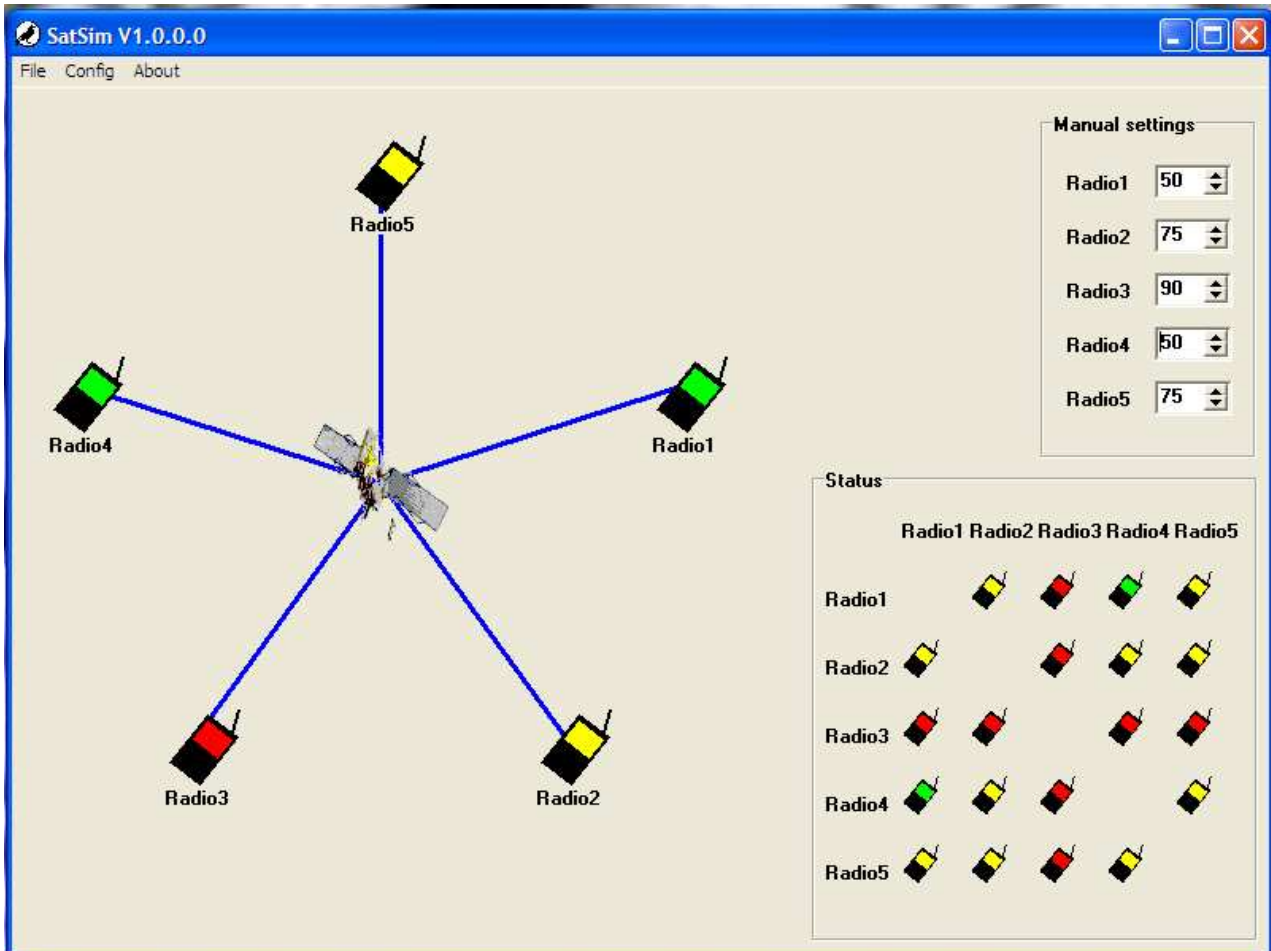
- Radio 1: Coloured **GREEN** so can talk to any other Green or Amber radio icon which is on the correct channel.
- Radio 2: Coloured **AMBER** so can talk to any other Green or Amber radio icon which is on the correct channel.
- Radio 3: Coloured **RED** so cannot talk to any radio.
- Radio 4: Coloured **GREEN** so can talk to any other Green or Amber radio icon which is on the correct channel.
- Radio 5: Coloured **AMBER** so can talk to any other Green or Amber radio icon which is on the correct channel.

The STATUS BOX shows the quality of connection between each radio. If the radio icon is Red there is no link, amber some restricted link and if it is green it can talk easily to the other radio. Any radio sets must be set to the same channel to allow any communication. The display shows that Radio 3 cannot talk to anyone and all of the others can either talk well or with some difficulty.

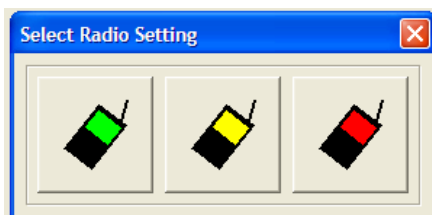
The MANUAL SETTINGS box allows any particular connection to the satellite to have additional attenuation set into that particular link. This allows the instructor to vary the status of a particular link as required.

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Below is the individual Radio settings display. By clicking on the different coloured icons sets the attenuation values within that particular radio connection. 'GREEN' is 'GOOD' connectivity, 'AMBER' is 'POOR' connectivity and 'RED' is 'NO' connectivity.



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Specification:

Matrix Specification

Parameter

Number of RF Port Connections	5	
Impedance	50Ω	
Frequency Range	Uplink Frequencies	292MHz to 318MHz
	Downlink Frequencies	243MHz to 270MHz
Maximum Input Power	44dBm (25W)	
Matrix Dimensions	480mm x 450mm x 400mm max	
Weight	25kg	
Power Requirements	50 watts maximum, AC Mains 100-230V, 50-60Hz Or 12V-24V DC supply	
Control	Touch panel PC build into the unit controlling channel selection and quality of connection	
Connectors	RF	BNC-Type Sockets
	DC Power	Jack socket or Spade Terminals
Environmental	IP54 environmental for water and dust.	
User Interface	Power on/off switch and indicator and fuse	



The whole system is housed in a hard polymer case which allows for transportation between relevant sites.