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**SMURF  
User's Guide**

**Version 0.1  
5/13/2004**

**N. Pederson**

## Revision History

Version	Date	Author	Comments
0.1	04/19/2004	N. Pederson	First Draft

*Broadcast Sports Inc*  
Model HUB97 FCC ID:KTB-HUB97

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This device complies with Part 15 of the FCC Rules.  
Operation is subject to the following two conditions;  
(1) this device may not cause harmful interference,  
and (2) this device must accept any interference  
received, including interference that may cause  
undesired operation.

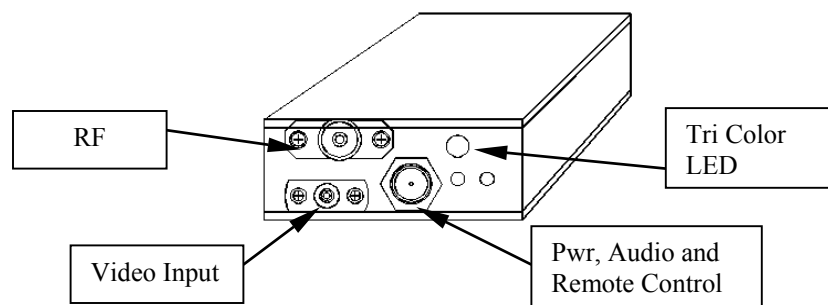
**Changes or modifications not expressly approved by the manufacture  
could void the user's authority to operate the equipment.**

## INTRODUCTION

The SMF-Xmtr is a portable video transmitter specifically designed to meet the growing needs of the mobile television broadcast industry. The unit is TYPE ACCEPTED per CFR 47, Part 74, Subpart F and functions as a stand-alone transmitter for a TV ENG station. The transmitter has 16 preset channels that are factory tuned to any frequency between 1999 to 2496 MHz in 250 kHz steps in accordance with FCC specifications.

The SMF-Xmtr has one video and one audio input. The programmable audio sub carrier provides for the transmission of voice or telemetry. A TTL level interface enables the unit to be remotely operated and provides control of all internal functions and status monitoring.

### SMF-XMTR RF FRONT VIEW



Note: Tri-LED.      1: Green indicates TX power amp is enabled.  
                          2: Amber indicates Audio Limit.  
                          3: Red indicates TX standby.

## SMF-XMTR Transmitter Specification TYPICAL SPECIFICATIONS

### Video Characteristics

Video Input Frequency	DC to 5.5 MHz
Video Input Impedance	75 ohms unbalanced
Video Input Level	1 Volt p-p
Video Pre-emphasis	CCIR 405-1 525

### Audio Characteristics

Audio Bandwidth	20 to 15 kHz
Audio Input Impedance	5k ohms
Audio Pre-emphasis	75 microseconds
Sub carrier Deviation	150 kHz p-p @ 1000 Hz
Sub Carrier Frequency	4 MHz to 7 MHz in 10 kHz steps

### Video Performance

Differential Phase	less than 1 deg.
Differential Gain	less than 1%
Frequency Response	- 1dB at 5.5 MHz
Signal to Noise	63 dB unweighted

### RF Characteristics

Video Deviation	8 MHz/Volt p-p @ 761.6 kHz
Frequency Stability	+/- .005 %
	Frequency Range
	1.999 GHz to 2496 GHz in
	250 kHz steps
RF output Power	+23 dBm ( 200 milliwatts) typ.

### General Characteristics

Operating Temperature	-10 to +50 °C
Power Requirements	+10.6 to 15 Vdc @ 0.25 amps

**WARNING: The SMF-XMTR Transmitter antenna must be installed in a manner that ensures a minimum separation distance of 20 centimeters between the antenna and the driver.**