EME/Weak Signal Test Report
and
ARRL 425-435 BAND PLAN

Introduction

The following is the ARRL band plan for the 425-435 MHz frequency range, the Savi operating frequency and test results obtained while operating the Savi system co-located with a 70 cm EME (Earth-Moon-Earth) amateur station.

The EME station was able to receive the co-located (30 meters) Savi interrogator and tags when tuned to their operating frequency while in the SSB mode of operation. The EME station was not able to receive the signals while in the FM mode unless the receiver squelch was defeated and it was not able to receive the Savi system signals when a truck blocked the line of sight (LOS).

The EME station was able to operate normally in the EME/weak signal band segment (432.00-433.00 MHz) in both the CW and SSB mode during Savi interrogator and tag transmissions

425-435 MHz

425.00-432.00	ATV repeater or simplex.
432.00-432.07	EME (Earth-Moon-Earth)
432.07-432.10	Weak-signal CW
432.10	Calling Frequency
432.10-432.30	Mixed-mode and Weak-signal
432.30-432.40	Propagation Beacons
432.40-433.00	Mixed-mode and weak signal
433.00-435.00	Auxiliary/Repeater links

* Weak Signal band segment: 432.00-433.00 MHz

Savi Interrogator and Tag operating Frequency: 433.92 MHz

EME Test Report

EME Test: January 26, 2002

Location: K5GW EME Station 45 miles North East of Dallas, Texas

Equipment:
Savi Mobile Interrogator and Savi 400 Series Tags
Savi Interrogator and Tag operating Frequency: 433.92 MHz

EME Station K5GW
Antenna Array : 64 X 10 element with 30-dB gain.
Preamp: 25 dB gain, 0.2 dB Noise Figure
Exciter/Receiver: Yaesu FT-736
Power Amplifier: 1500 Watts
Test Frequencies: TX/RX 432.00-432.07 MHz
RX 433.92 MHz

Test Results:

- EME Station in the SSB detection mode and tuned to 433.92 MHz and Savi Interrogator and three Tags placed 30 meters from front of antenna array indicated a received signal strength of S9 (~50 microvolts).
- During EME station transmissions the Savi Interrogator reported no tags found when activated and during tag data transmissions the link was lost by the interrogator and the system ceased data transmissions.
- The 433.92 MHz signal was lost by the EME station during the time that a truck was placed between interrogator and tags and the EME antenna array. This indicated that line of sight (LOS) is required for signal reception.
- The EME Station was not able to receive either Interrogator or Tag transmissions when operating at the ARRL band plan EME/Weak signal frequencies of 432.00-433.00 MHz.
- The EME Station was also operated in the FM receive mode on 433.92 MHz and it was observed that the Interrogator and Tags did not break the squelch of the Yaseu FT-736 receiver.