

BACKGROUND:

Practical applications of VHF E-skip (Es) radio propagation are few and rather limited. Amateur radio use of Es is common amongst many VHF hobbyists as well as SWL or DX listeners of radio and TV transmissions. Thus far, all propagation models that help predict Es propagation all fall short in completely predicting Es events.

One area of significant interest amongst VHF Es enthusiasts for both amateur and non-amateur radio operators is Trans-Atlantic propagation. Often, reliable mid to high-powered RF signal sources are required across the VHF spectrum to aid in detecting and determining the exact nature of Es propagation.

EXISTING Es PROPAGATION INDICATORS:

There are many amateur 28 & 50MHz CW beacons already in use to indicate Es propagation during the North American summer season at low-VHF. Domestic and Canadian FM broadcast stations cover the 100MHz region and can act as beacons, even despite being inherently wide-band FM modulated. A scant few high-powered 144MHz amateur beacons exist along the East Coast of the US with directional antennas aimed at Europe.

There is however a gap in the mid-VHF region of 70MHz where there are no current high-powered sources of narrowband RF signals that can be detected via weak signal methods to indicate Es since the recent transition from analog to digital TV took place. In the past, the AM video carriers could be used by radio operators monitoring the 70MHz region both domestic and abroad to give indication that Es propagation was taking place in that frequency region.

PROPOSED SYSTEM:

This application serves to provide a source of CW, medium power level, reliable, signal to act as a radio propagation beacon at 70.005MHz for domestic as well as possible Trans-Atlantic reception. With recent changes to EU radio allocations, more amateurs are actively utilizing the 70MHz spectrum. As such, the likelihood of detection of Es propagation in the EU and North America on that band has increased.

It is not the intent of this application to serve as a justification for a domestic amateur allocation at 70MHz. 2-way communication is not being proposed. Rather, this application is intentionally timed to best utilize the mid-VHF spectrum (i.e.: 70MHz) for radio propagation experimentation while decisions to determine future use of such 'Whitespace' are being made by the Commission.