Purpose of Experimental Program

The purpose of the experimental program is to determine whether the equipment will support the coverage range required for application to seismic telemetry work. The equipment in question was initially developed for video surveillance purposes by police and security personnel. Use of this equipment in the geophysical industry for seismic telemetry is a novel approach. If the results of the program prove positive, an additional method of conducting geophysical exploration at reduced cost will have been shown to be available. This in turn will facilitate the location of oil and gas reserves.

4. (F) For Complex Emissions

The system is made up of four full duplex transceivers (or multiples thereof) used in pairs and operated such that a 256Kbs channel carrying clock/command data will be transmitted while a 5Mbs channel carrying digitized seismic data will be received and vice versa. The transceivers must also have simultaneously available a voice grade channel for setup and operation of an audio tone encoded seismic source synchronizer.

The main carriers are FM modulated by AMI encoded, nyquist filtered, digital data with a peak deviation of ½ the bit rate (2.5MHz pk for 5Mbs and 128KHz pk for 256Kbs). The two carriers (2459.0 and 2474.5MHz) used for the 5Mbs data contain a voice grade (300 to 3000Hz) FM subcarrier of 5.5MHz with peak deviation of 5KHz injected onto the main carrier at -27dBC, while carriers (2453.0 and 2480.5MHz) used for the 256Kbs data contain a 2.5MHz FM subcarrier of the same characteristics.