Operational Description

FCC ID: SS6ISC-T5540

The following is an overview of the paging transmitter:

1.1 ISC-T5540 General Description

The ISC-T5540 is a 50-250 watt transmitter consisting of a DSP exciter assembly, 4-watt amplifier assembly, and a 250-watt power amplifier assembly.
The transmitter is capable of operating in the range of 406 to 470 MHz.

1.2 Exciter Interface

There are two types of exciter interface boards that allow connections to two different types of transmitter control equipment. The first type is referred to as the I20 interface and allows connection to the GL-C2000 for transmitter controller. The exciter equipped with this type interface is capable of digital modulation only.
The second interface type is the Standard Interface, which allows connection to a variety of external control equipment. This interface provides both an analog and a digital modulation path.

1.3 ISC-T5540 Clock Frequencies

All clock signals are contained within the DSP Exciter assembly and are identified as follows:

1. 10 MHz. Reference Oscillator. This signal provides clocking to various logic devices including the digital quadrature modulator ADSP2105 and Modulator DSP ADSP2101.
2. 16.38 MHz. This signal is the clock for the 68HC11 host processor.
3. I20 Option only. 8MHz. clock for a 68HC711 processor.
4. Standard Interface Option Only: 1.25 MHz. clock.

1.4 Emissions desiginators:

Approval is sought for both 25kHz. and 12.5kHz. channel bandwidths. Emissions designators follow:

F3E – analog voice modulation. (25 kHz Channels only)
F1D – data modulation(FSK). (12.5 and 25 kHz Channel Bandwidths)
F2D – data modulation using a modulated subcarrier (modem tones) (12.5 and 25 kHz Channel Bandwidths).

25kHz. Channel bandwidth – emissions designator 16k0F3E

F3E – 3kHz. is the highest modulating frequency, 5kHz. is the deviation limit.

Bn=2(M) + 2(D)
Bn=2(3) + 2(5)
Bn=16

25kHz. Channel bandwidth – emissions designator 16k0F2D

F2D – 3kHz. is the highest modulating frequency, 5kHz. is the deviation limit.

Bn=2(M) + 2(D)
Bn=2(3) + 2(5)
Bn=16

25kHz. Channel bandwidth – 14k4F1D

Highest data rate for two level modulation is 4800bps. 4800 bps represents a highest modulating frequency of 2400Hz. 4.8kHz. is the highest possible digital deviation.

Bn=2(2400) + 2(4800)
Bn=4800 + 9600
Bn= 14400

Note: 1 symbol=1 dibit= 2 bits. This results in a 4800 bps maximum data rate using 2 level FSK and 9600bps using 4 level FSK.

12.5kHz. Channel bandwidth – 9k6F1D

Highest data rate is 4800 symbols per second. This represents a highest modulating frequency of 2400Hz. 2.4kHz. is the highest possible digital deviation.

Bn=2(2400) + 2(2400)
Bn=4800 + 4800
Bn= 9600

Note: 1 symbol=1 dibit= 2 bits. This results in a 4800 bps maximum data rate using 2 level FSK and 9600bps using 4 level FSK.