FREQUENTLY ASKED QUESTIONS - OTHER TRANSMITTERS

The GI-100 is one of many Part 15 certified transmitters for sale in the US. The offerings cover a wide range of prices and features. The following questions address the differing features of various transmitters.

Q. Some Part 15 transmitters will tune up to 1710 KHz. Will the GI-100 tune to this extended frequency?
A. The GI100 synthesizer will tune in 10 KHz steps from approximately 350 KHz to 2540 KHz. It does not have FCC certification to transmit over the full synthesizer band, but it can be used as a non-radiating signal generator.

Q. Some Part 15 transmitters can be tuned to run at a output powers well in excess of 100mW. Is this true for the GI-100?
A. The GI-100 has a modulation feedback control that maintains a constant high level (95%) of modulation for maximum legal signal strength when tuned per the operational instructions. Tuning it in an effort to increase power will change the operational characteristics of the modulation control and will distort the signal and give degraded performance (in addition to being against FCC regulations.)

Q. Some Part 15 transmitters use distorted modulation to increase the effective output power and to increase the signal range. Can these techniques be used with the GI-100?
A. The GI-100 uses internal high voltage converters and operational amplifiers in conjunction with modulation feedback to insure **maximum power** with **minimum audio distortion**, employing no audio transformers that add distortion and no RF output transformers which decrease radiated power. Because of the care taken to provide high quality audio at the maximum legal power, it seems counter-productive to insert distortion to degrade performance in a effort to extend the range by a small amount. We do not offer that option.

Q. Some Part 15 transmitters have the ability to synchronize the RF carrier among a number of transmitters to increase the total power and range. Can the GI-100 do this?
A. No. Radiating a synchronized RF carrier from various elements constitutes a phased array. This is a technique widely used in radar applications, and requires complex modeling to achieve deterministic radiation patterns. The signals will effectively add in some directions while canceling in others, causing areas of high strength signal and area of no reception. With this type of installation, there is also a question of legality, as the entire array is treated as a single transmitter, and is no longer Part 15 compliant. For those persons wishing to get wide coverage from Part 15 transmitters, we would suggest employing frequency re-use, as is done with cell phone towers. By placing transmitters over an area, all operating on the same frequency, they should be spaced in a honeycomb pattern so that there are holes in the service between them. These holes can be filled with a second group of transmitters, all operating on an alternate frequency. Thus, an area can be fully covered by using two frequencies, without holes in reception (and questionable legalities) caused by implementing phased arrays.