

### III-1. PROGRESS IN SOLID STATE MICROWAVE POWER SOURCES\*

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The state-of-the art of cw microwave solid state power sources is still rapidly advancing. Progress during the past year to be discussed includes: transistor amplifiers delivering more than 10w at 400 mc and more than 1w at 1 gc, transistor amplifier-multipliers and transistor oscillator-multipliers producing several watts at L-band frequencies (in these devices the transistor acts as both an amplifier or an oscillator, and as a frequency converter), transistor driven varactor harmonic generator chains producing over 1 watt at X-band frequencies and several watts at C- and S-band frequencies, varactor multipliers with efficiencies of 80 percent, compact and rugged sources capable of operating in missile and outer space environments, and electronically tuned sources with tuning characteristics superior to that of reflex klystrons.

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\*Invited paper.

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