

**Performance measurements for a Tomco BT01000-Gamma amplifier.**

**1 Performance below 5MHz**

The following three plots show the performance of a Tomco BT01000-Gamma amplifier below its rated lower cutoff frequency of 5MHz

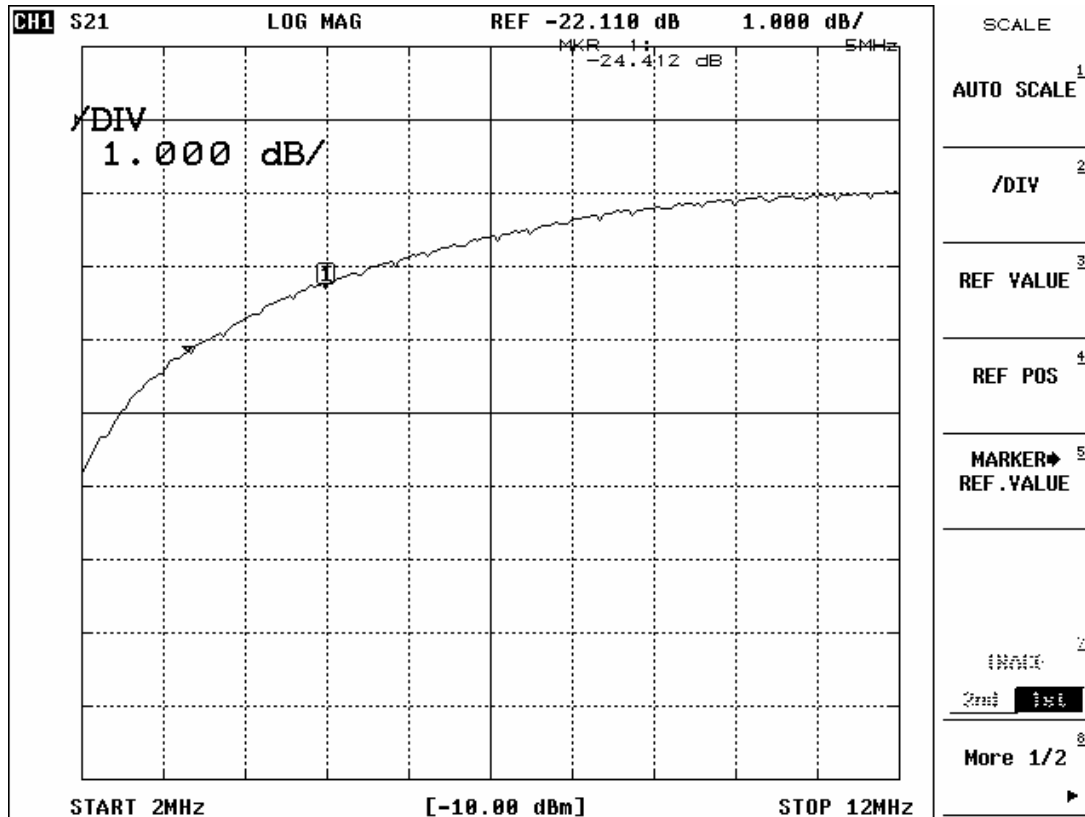


Fig 1: Small signal gain curve from 2MHz to 12MHz.

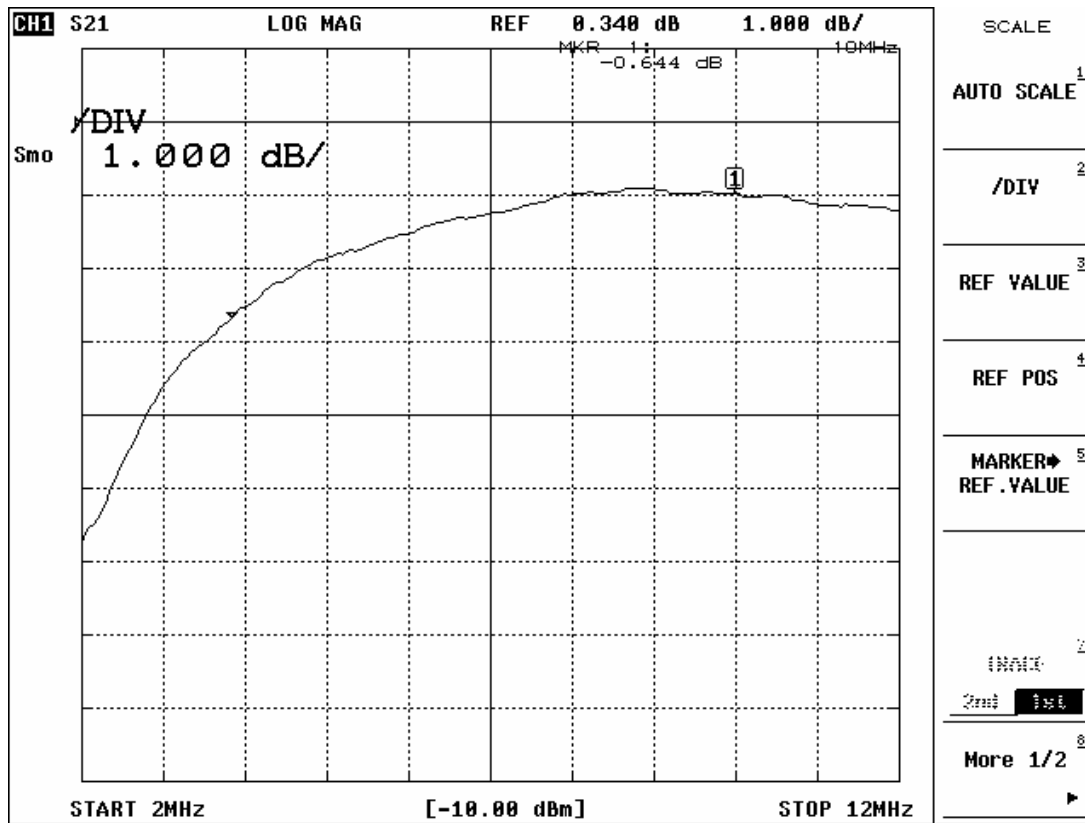


Fig 2: Large signal gain curve from 2MHz to 12MHz. The power level at the 10MHz marker is 1000W. The output power at 2MHz (for the same drive level) is about 4.5dB lower (350W), but this is just due to the reduced gain at that frequency.

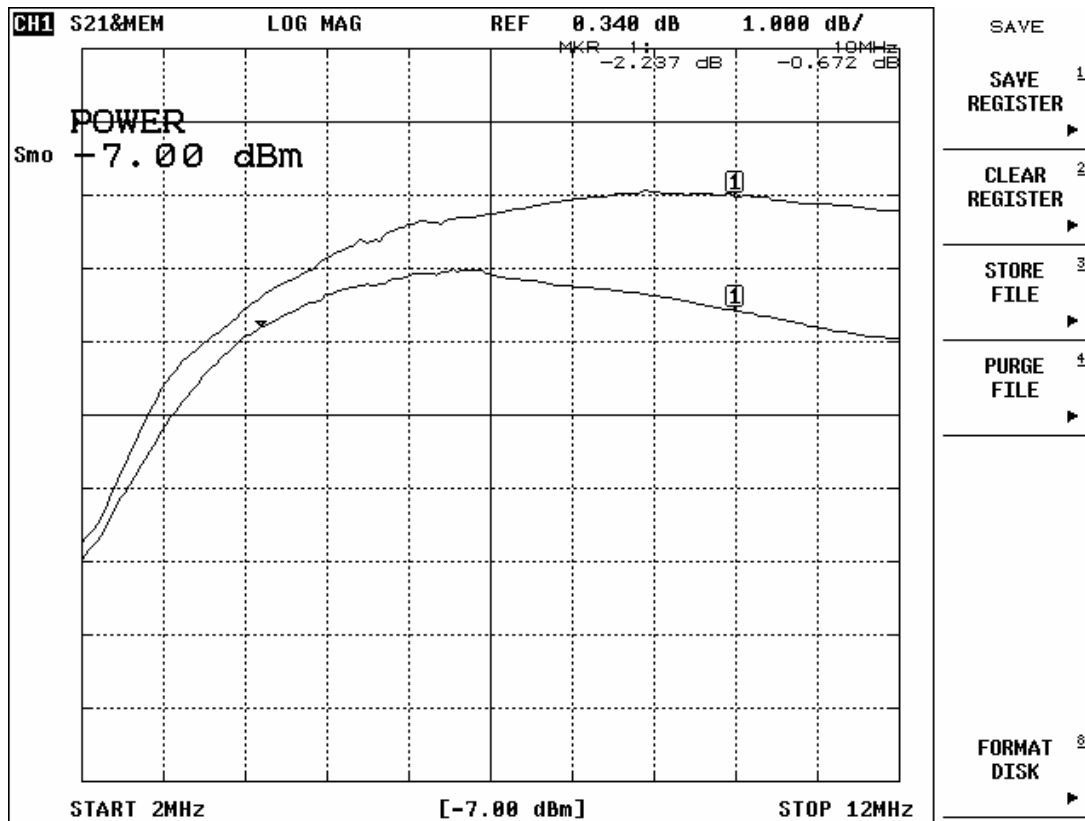


Fig 3: The upper trace is the curve of Fig 2. The lower trace is the result of increasing the amplifier drive level by 3dB. The amplifier shows 1-2dB of compression above 5MHz (well within its specification), and at low frequencies there is very little compression. This indicates that the output power at 2MHz is now about 700W and the amplifier is still well below compression.

## 2 Gating transients

In the oscilloscope trace below, the output of the BT01000 is connected directly to the scope input. The upper trace shows the gate signal applied to the amplifier (2V/div) and the lower trace shows the transients at the amplifier output (5V/div). There is no significant transient at the rising edge. The falling edge shows a very fast transient peaking at just over +5V. Timebase is 2 $\mu$ S/div.

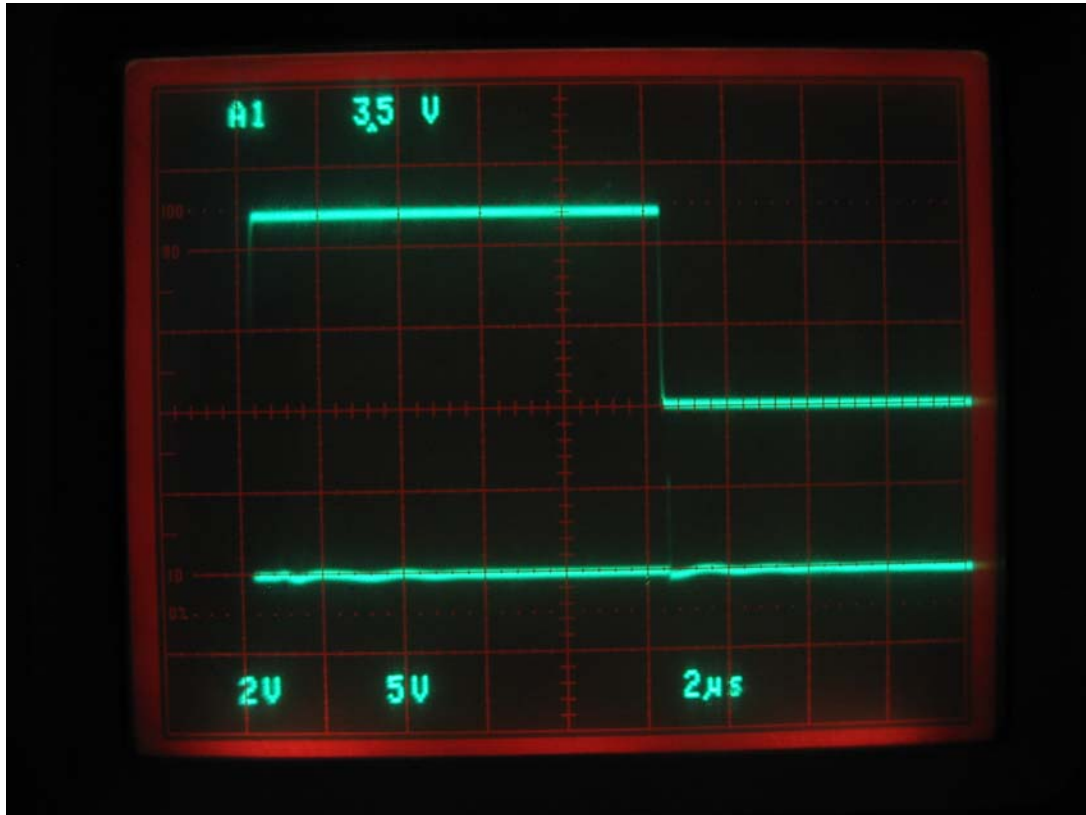


Fig 4.

3 Low-power fast pulse performance

The oscilloscope trace below shows the output of the BT01000 operating at an output power of approximately 10W at 100MHz. The RF input to the amplifier is pre-gated, so the gate delay (approximately 1 microsecond) is not shown. Timebase is 200nS/div.

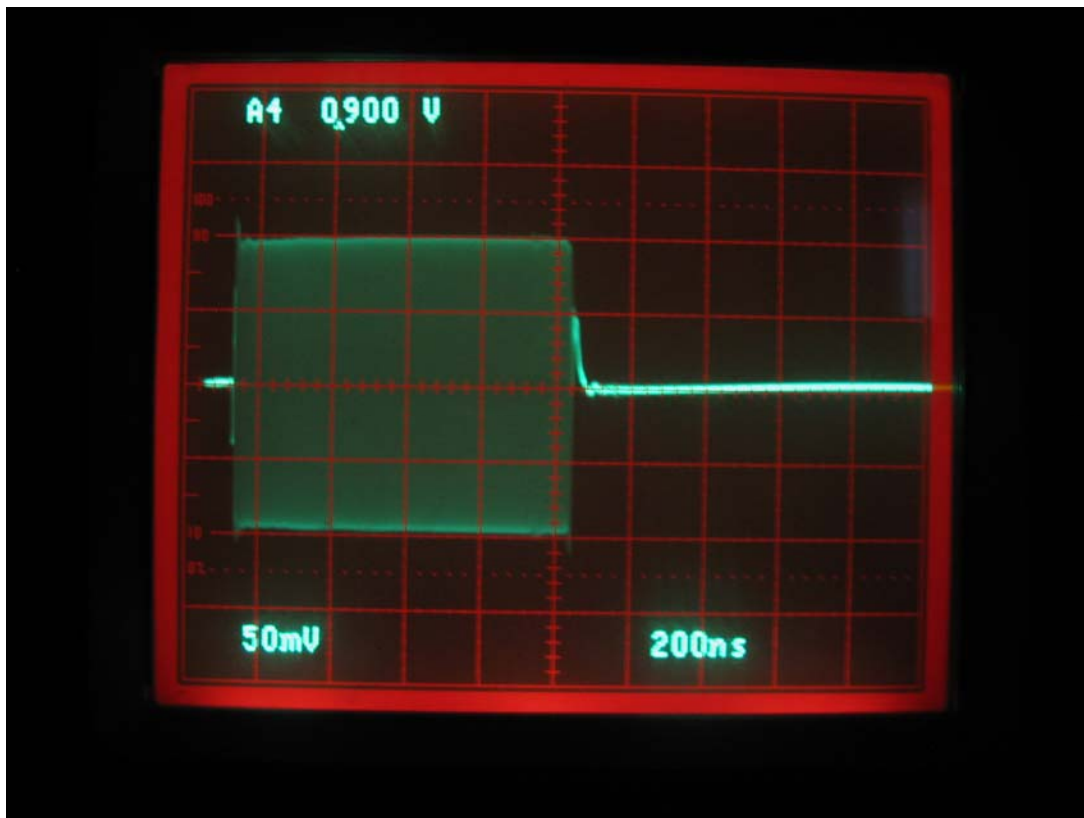


Fig 5

4 Fast pulse performance at high power

The trace below shows the falling edge of a sub-microsecond pulse, with the amplifier running at 1kW output at 100MHz. The RF input signal was gated before being applied to the amplifier, and the timing of this gating relative to the amplifier's gate signal was adjusted for best response. Timebase = 30nS/div.

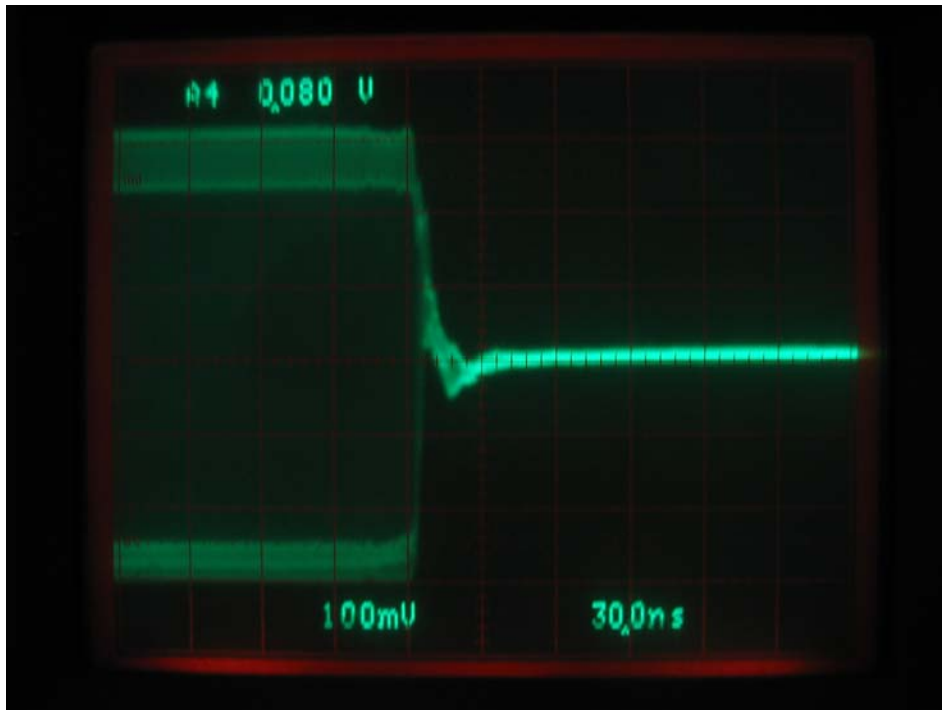


Fig 6.

The trace below shows the same signal as for Fig 6, passed through an envelope detector to make it clearer.

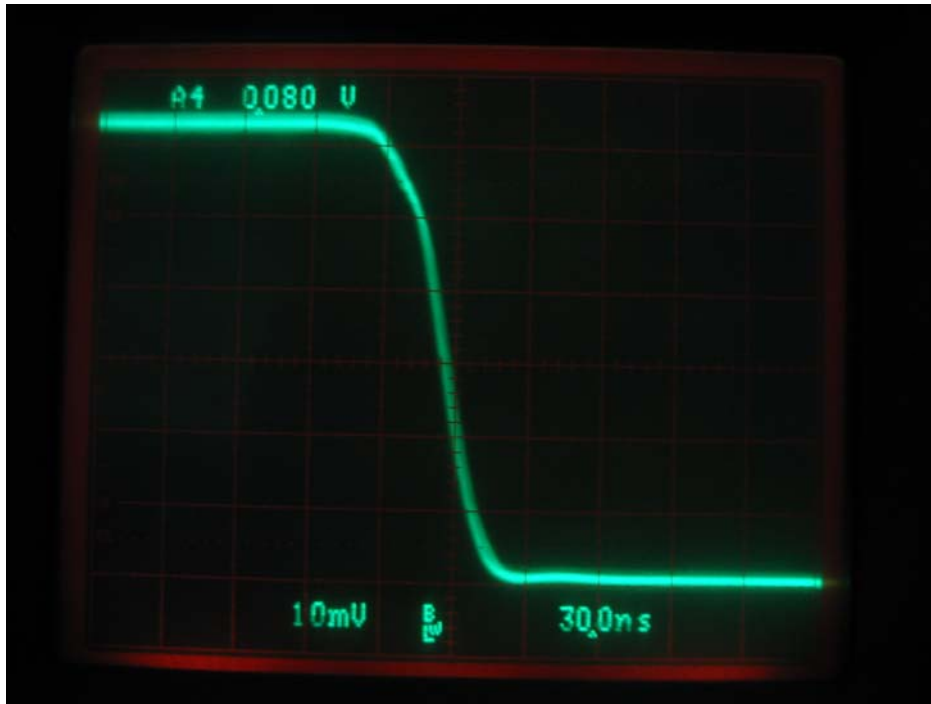


Fig 7.

The trace below shows the output of the amplifier without pre-gating of the RF input signal (that is, CW RF input). The gate signal is also shown.

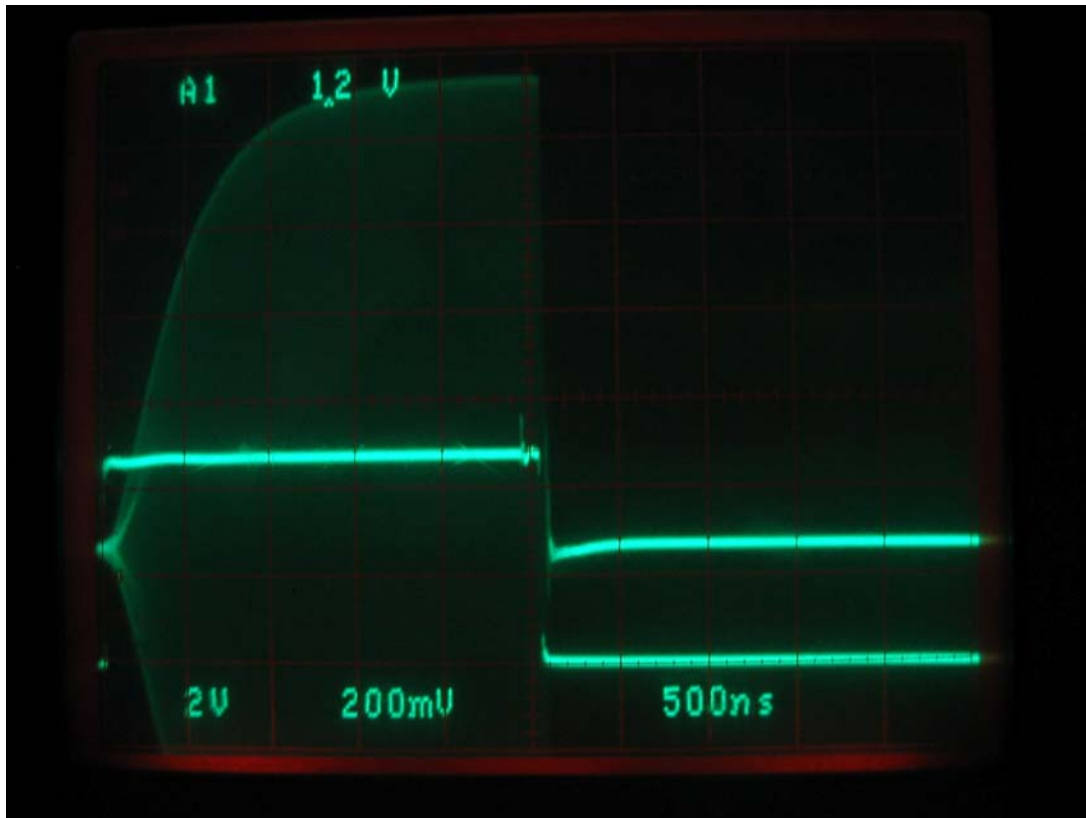


Fig 8.