

MSK CHIP MODULATION

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Key Technology for PC Card

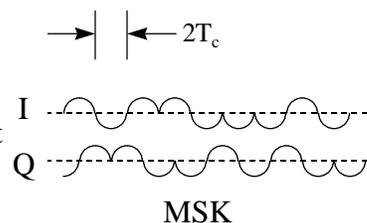
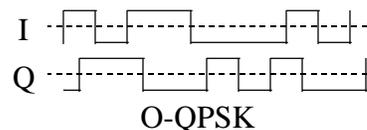
- **Allows Low-Drive-Level Power Amplifier**
 - Spectral Shaping Correct Without Filtering
 - Nearly Constant Time-Domain Envelope
 - Not Sensitive to PA Saturation
- **With Currently Available Components**
 - e.g., **70 mA** Instead of **270 mA** PA Supply Current
 - Single Supply Operation (3V Possible)

Other MSK Advantages

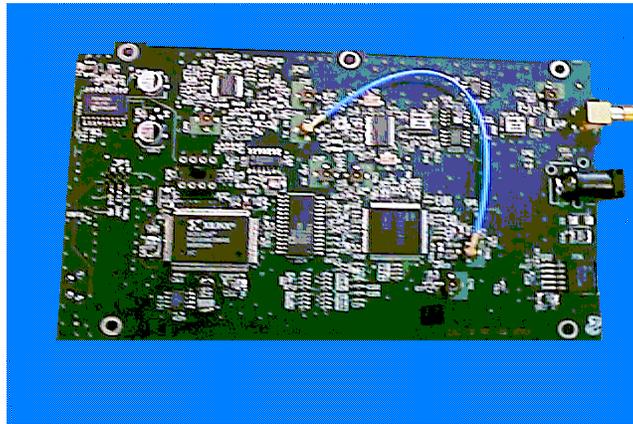
- Can Hard Limit on Receive
 - MSK has Nearly Constant Envelope
 - Heavily Filtered PSK has Large AM
- Two 32-Mchip/sec Channels at 2.4 GHz
 - Slight Overlap Before First Null
 - Isolation Under Study
- Supports 1 each 10- and 2-Mbps Channels

MSK Related to O-QPSK

- Requires Chip Shaping
- Difficult for Filter or Generator Alone
- Use Hybrid Generator/Filter
 - Generator Runs at $2f_c$
 - Modest Filtering Requirement
- Existing Digital Correlator
 - j^n Implemented in Multiplexer
- **Very Low Cost to Implement**



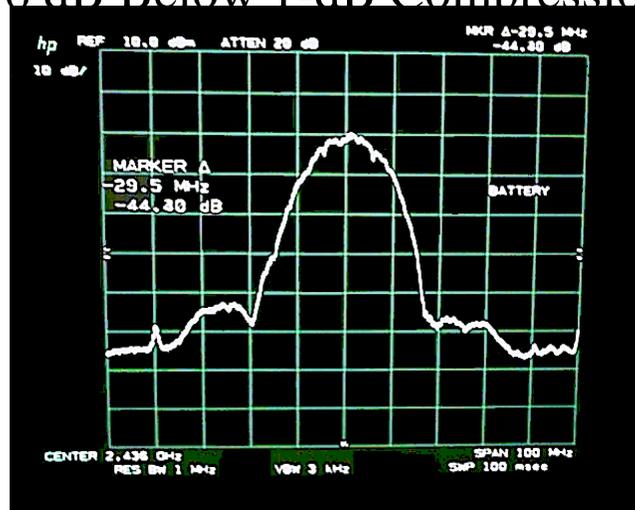
MSK Test Board



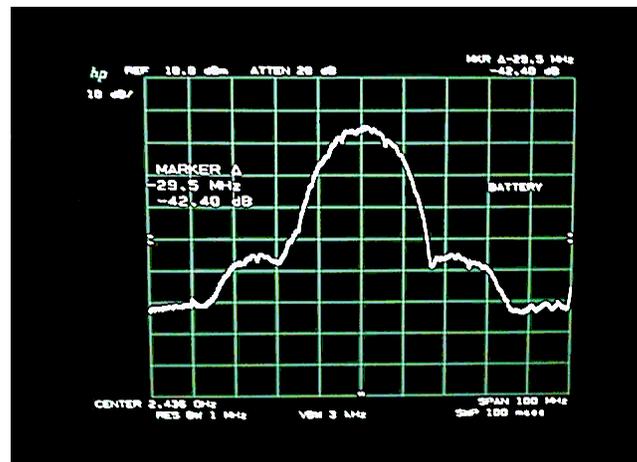
MSK Test Setup



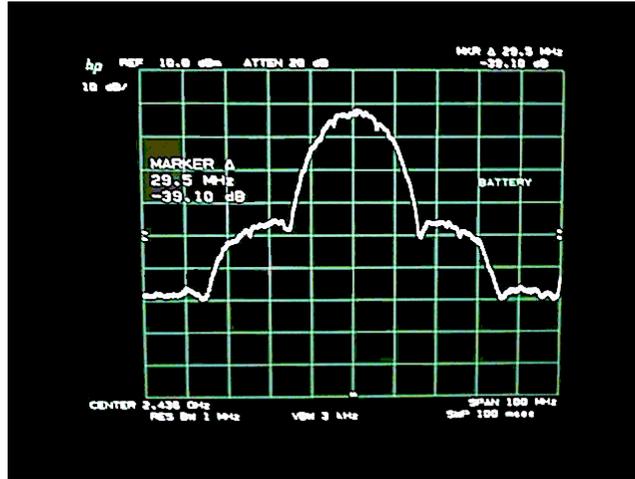
6 dB Below 1-dB Compression



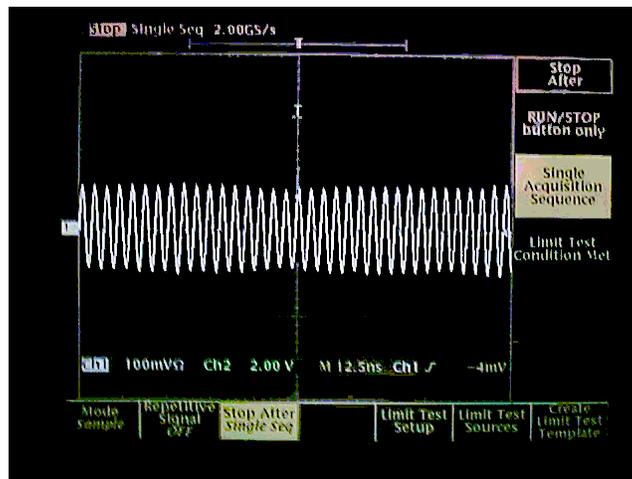
Right at 1-dB Compression



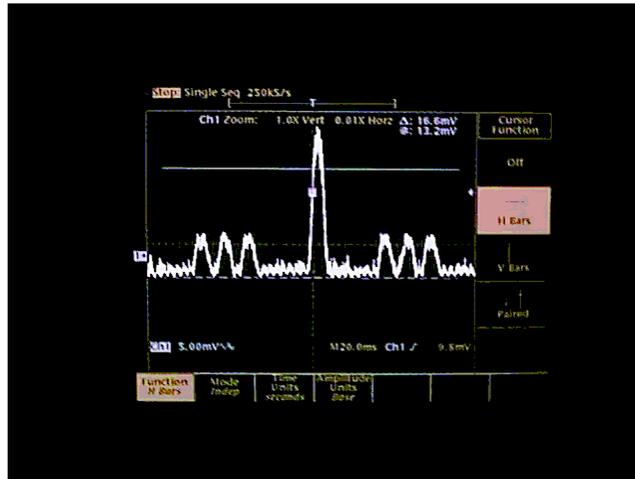
6 dB Above 1-dB Compression



MSK Time-Domain Waveform



PSK Correlation Spike



MSK Correlation Spike

