

**“Squad MOUT Radio”  
and  
“Radar Vision”**

**Alan Petroff**

**Executive VP of Engineering**

**Time Domain Corporation**

**Huntsville, AL**

**[www.time-domain.com](http://www.time-domain.com)**

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# **Time Domain's Perspective :**

- **Technology Inventors & Developers**
- **Background : Commercial Business**
- **Unique Technical Approach Having Special Features**
- **Not Compatible with “Legacy” Radios**
- **Radar Scaled to the Requirements of Small Unit Operations**

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# Time Modulated - Ultra Wideband

## How is it Different ?

- **PULSES !**

**Not Continuous Waveform**

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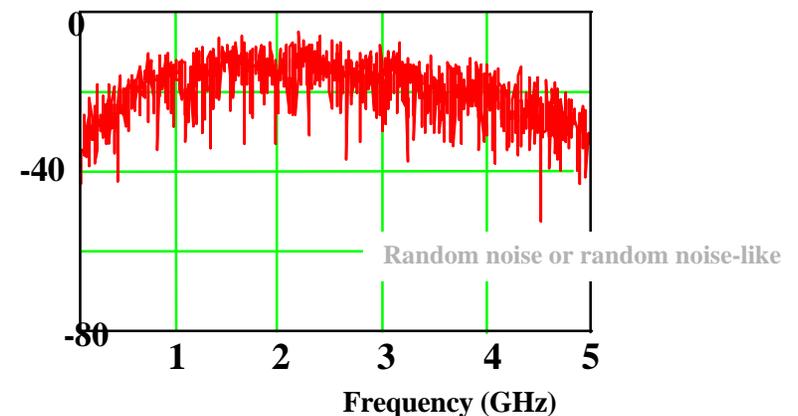
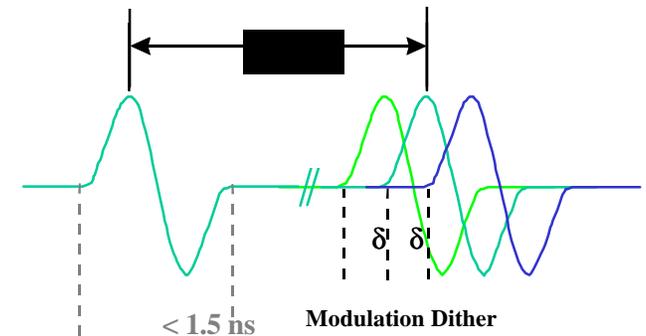
- **Spectrum Sharing,**  
**“Noise-Like” Signal**

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- **Extremely Low Probability Detection**

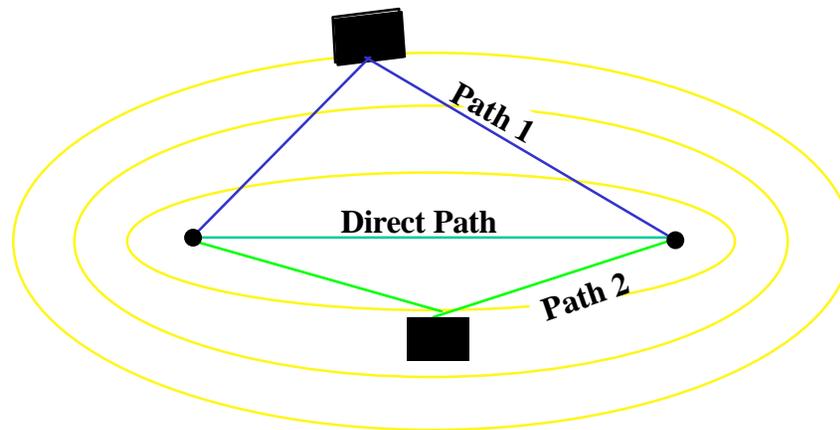
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# TM - UWB : How is it Different ?

- **Immune to Multipath Fading :**

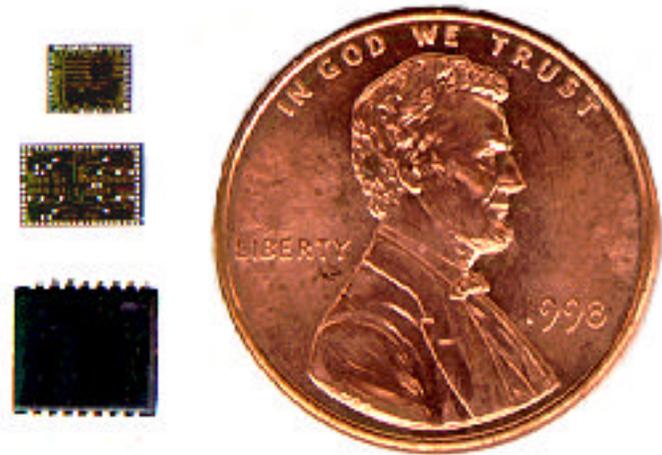


- “Time Ranging” :  
Built-In Geo-Positioning

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# TM - UWB : “Pure Digital”

- **Simplicity of SiGe ASIC Design**
- **Low Power Draw**
- **Low Weight**
- **Small Antenna**
- **Low Cost**
- **Small Radio**
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Top: Timing Delay Generator ASIC

Middle: Multiple Correlator ASIC

Bottom: Digital Baseband ASIC

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## **Developments:**

- **Theoretical Proof in 80's**
- **First Contracts in Early 90's**
- **Prototypes for Marines / CECOM, INS**
- **Miniaturized & Manufacturable**
- **Ready for Applications Development & Systems Integration**

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## **“Squad MOUT Radio” Features :**

- **Transmit Voice / Data / Imagery**
- **Superior Performance in “MOUT”,  
Underground and Heavy Foliage**
- **Range Resolution to 5 cm Precision**
- **“JTRS” Compliant**
- **Law Enforcement & Public Safety Market  
Versions**

## **“Radar Vision 1000” Features:**

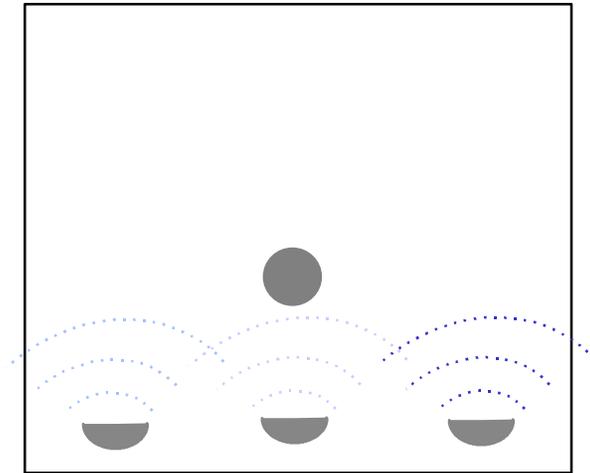
- **Detection of Motion Through Walls**
- **Overall Range : 30’ (FCC Limit)**
- **Motion Detection Resolution to 5 cm**
- **16 Lbs. Weight, 2 Hrs. Batt. Operation**
- **Development Platform for Other Uses**
- **Law Enforcement & Public Safety**  
**Market Versions**



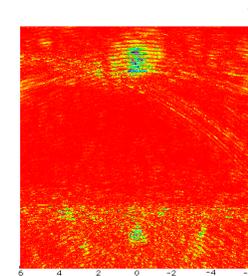
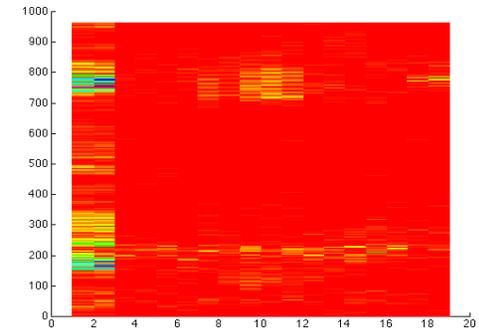
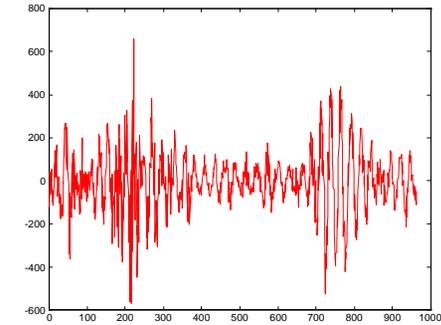
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# Building Imaging Radar

- **An Array of Radar Antennas Can Image a Structure**



- **Simple, Low Cost Design & Signal Processing**



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## **TM - UWB Addresses :**

- **Need for Dedicated, Robust, “Safe” Wireless Communications**
- **Need for “Free Spectrum” & High Data Bandwidth**
- **Need for LPI / LPD / AJ**
- **Need for Efficiency in Size, Power Use, Low Cost & Minimal Support**
- **Need for “Leap Ahead” Situational Awareness for the Warfighter**

# **Status of the Technology**

- **Building New Radios w/ SiGe ASICs**
- **Proposals to Defense Industry & Commercial Business**
- **RadarVision 1000 Product Introduction**
- **Target : Low Cost, High Reliability**
- **Partnerships & Licensing**
- **Application & Market Driven Business**

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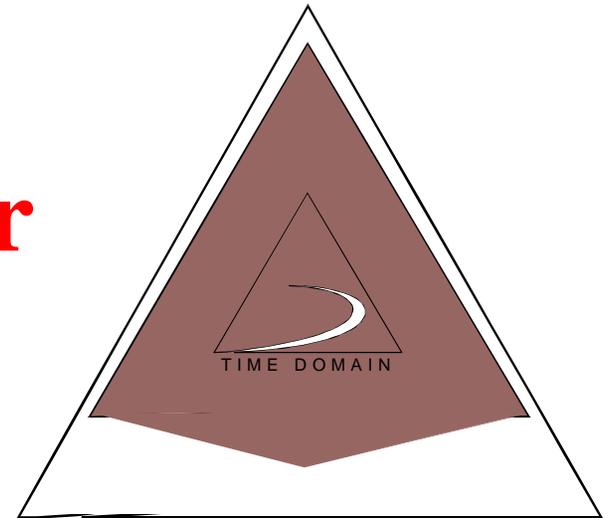
## **Lessons Learned :**

- **Need for Well-Built, Reliable Radio that Works When & Where They Must**
- **Soldiers & Marines Want a Radio that Won't Make Them Targets**
- **Size, Weight & Simple Ruggedness is Key !**
- **Resistance to “Disruptive” Technology**
- **Enables Creative Operational Applications**

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**6700 Odyssey Drive Huntsville, AL 35806**

**[www.time-domain.com](http://www.time-domain.com)**

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