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[54] **POLICE TRAFFIC RADAR USING FFT PROCESSING TO FIND FASTEST TARGET**

5,565,871 10/1996 Aker et al. 342/176
5,570,093 10/1996 Aker et al. 342/104

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OTHER PUBLICATIONS

Westlaw Search, Nov. 14, 1994.
Craig Peterson, "Speed Enforcement Technology", An explanation of the latest features and capabilities of speed detection equipment, *Law and Order*, vol. 41, No. 9, Sep. 1993, pp. 32-41.
MPH L55 Laser, Description and Specifications, M.P.H. Industries, Inc. pp. 1-8.
MPH L-55 Laser brochure with Stealth Instruction Manual, M.P.H. Industries, Inc., pp. 1-6.
Applied Concepts brochure on Stalker ATR, The First Major Innovation in Traffic Speed Radar in Ten Years, 4 pages.
Kustom Signals, Inc., H.A.W.K. Traffic Safety Radar brochure, 4 pages.
Muni quip MDR-1 X-Band Moving Track Radar brochure, 2 pages.

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[22] Filed: **Aug. 9, 1996**

Related U.S. Application Data

[63] Continuation of Ser. No. 386,552, Feb. 10, 1995, Pat. No. 5,570,093.

[51] Int. Cl.⁶ **G01S 13/50**

[52] U.S. Cl. **342/104; 342/115**

[58] Field of Search **342/104, 115**

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[56] References Cited

U.S. PATENT DOCUMENTS

Re. 29,401	9/1977	Aker et al.	343/8
3,438,031	4/1969	Fathauer	342/92
3,689,921	9/1972	Berry	343/8
3,936,824	2/1976	Aker et al.	343/8
4,214,243	7/1980	Patterson	343/8
4,236,140	11/1980	Aker et al.	343/8
4,293,859	10/1981	Sergent	343/702
4,335,382	6/1982	Brown et al.	343/8
4,335,383	6/1982	Berry	343/8
4,740,045	4/1988	Goodson et al.	342/112
4,743,908	5/1988	Brassfield et al.	342/113
5,504,488	4/1996	Henderson et al.	342/115
5,525,996	6/1996	Aker et al.	342/104
5,528,245	6/1996	Aker et al.	342/115
5,528,246	6/1996	Henderson et al.	342/115
5,563,603	10/1996	Aker et al.	342/115

[57] ABSTRACT

A police radar utilizing digital data transmission from the antenna unit to a separately housed counting and display unit. The antenna has a double balanced mixer to suppress even order harmonics. The counting and display unit has a computer programmed to perform digital signal processing on the digital data received from the antenna to improve the quality and accuracy of calculated speeds for patrol speed, strongest target speed and fastest target speed. Fastest target speed can be displayed simultaneously with strongest target speed. Signal processing techniques are used to suppress false signals caused by double and triple bounce, harmonics, intermodulation products, video display terminal interference, etc.

19 Claims, 48 Drawing Sheets

