



US005341146A

United States Patent [19]

[11] Patent Number: **5,341,146**

Vennum et al.

[45] Date of Patent: **Aug. 23, 1994**

[54] **COVERT REMOTE ELECTRONIC WARFARE SIMULATOR**

5,133,663 7/1992 Willingham et al. 432/2
 5,134,412 7/1992 Baseghi et al. 342/169
 5,150,127 9/1992 Aw 342/169

[75] Inventors: **Michael D. Vennum; Mark Hynes; Gary Conover**, all of Sierra Vista, Ariz.

Primary Examiner—John B. Sotomayor
Attorney, Agent, or Firm—Freda L. Krosnick; Frank J. Dynda; Muzio B. Roberto

[73] Assignee: **The United States of America as represented by the Secretary of the Army**, Washington, D.C.

[57] ABSTRACT

[21] Appl. No.: **103,268**

A covert remote electronic warfare simulator is disclosed which includes receiving and signal processing apparatus for incorporating various electronic signal parameters and variables representing propagation effects from the environment borne by a low power control signal for redirection from a "victim" antenna into a "victim" receiving apparatus. The invention includes methods and apparatus for the subsequent replay of stored data representing the resulting signal(s) for data collection and detailed analysis in a laboratory setting. The simulator apparatus is interconnected between a "victim" receiving antenna and a "victim" transceiver to provide a simulated jamming signal.

[22] Filed: **Aug. 4, 1993**

[51] Int. Cl.⁵ **G01S 7/40; G01S 7/38**

[52] U.S. Cl. **342/170; 342/13; 434/2**

[58] Field of Search **342/170, 13, 82, 83; 434/2**

[56] References Cited

U.S. PATENT DOCUMENTS

4,192,082 3/1980 Deaton et al. 434/2
 4,666,407 5/1987 Jones 434/2
 5,010,342 4/1991 Jones, Jr. 342/169

23 Claims, 2 Drawing Sheets

