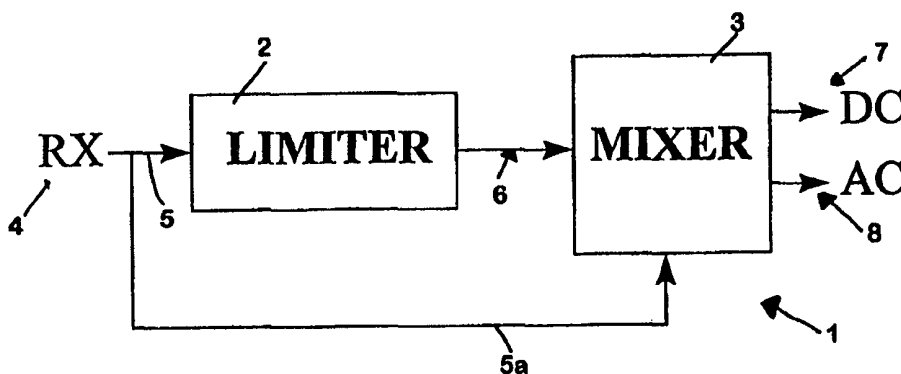




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<p>(21) International Application Number: PCT/DK99/00076 (22) International Filing Date: 23 February 1999 (23.02.99) (30) Priority Data: 0247/98 23 February 1998 (23.02.98) DK (71) Applicant (for all designated States except US): TSS TRAFFIC SUPERVISION SYSTEMS A/S [DK/DK]; Lundtoftegårdsvej 97, DK-2800 Lyngby (DK). (72) Inventors; and (75) Inventors/Applicants (for US only): PETERSEN, Freddy [DK/DK]; Dragevej 6, DK-4040 Jyllinge (DK). MIDT-GAARD, Arne [DK/DK]; Gundestedvej 32, DK-4330 Hvalsø (DK). PEDERSEN, Heine, Ewi [DK/DK]; Sydskråningen 1, DK-2800 Lyngby (DK). (74) Agent: HOFMAN-BANG & BOUTARD, LEHMANN & REE A/S; Hans Bekkevolds Allé 7, DK-2900 Hellerup (DK).</p>		<p>(81) Designated States: AL, AM, AT, AT (Utility model), AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, CZ (Utility model), DE, DE (Utility model), DK, DK (Utility model), EE, EE (Utility model), ES, FI, FI (Utility model), GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SK (Utility model), SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).</p> <p>Published <i>With international search report. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments. In English translation (filed in Danish).</i></p> <p>(88) Date of publication of the international search report: 28 October 1999 (28.10.99)</p>

(54) Title: A METHOD AND A CIRCUIT FOR AM DEMODULATION



(57) Abstract

The invention relates to a method for simultaneous AM demodulation of data which are transferred between a transponder and an interrogator in connection with metal detection. The carrier wave signal is amplitude modulated by the information signal and is fed to an input of a receiver where it is branched into two parts, so that the first part is fed to a severe limiter, while the second part is fed to a first input of a mixer whose second input receives the output signal from the severe limiter. The two signal parts are multiplied in the mixer. A DC signal used for metal detection and an AC signal used for determining a possible information signal occur on the output of the mixer. The AM signal is fed to the receiver from an antenna which contains an adjusted circuit, which receives a signal galvanically separated from a generator. Signals from objects which partly contain a tag with identification data and partly do not contain a tag, may be used for detection and identification of objects.

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/DK 99/00076

A. CLASSIFICATION OF SUBJECT MATTER		
IPC6: H04L 27/06, G01V 3/10 According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED		
Minimum documentation searched (classification system followed by classification symbols)		
IPC6: G01V, H04L, H03D		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
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C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 9807052 A1 (WEAVER, JON NEAL), 19 February 1998 (19.02.98), page 2, line 30 - page 4, line 5 --	1-6
A	Derwent's abstract, No SU-115059/06, week SU06, ABSTRACT OF SU, 1150596 (GEOPHYS PROSPECTING), 15 April 1985 (15.04.85) --	1-6
A	US 4147973 A (HAROLD J. WEBER), 3 April 1979 (03.04.79), column 1, line 6 - line 67 --	1-6
A	US 5418447 A (CHRISTIAN BEHA ET AL), 23 May 1995 (23.05.95), abstract --	1-6
<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C. <input checked="" type="checkbox"/> See patent family annex.		
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Name and mailing address of the ISA/ Swedish Patent Office Box 5055, S-102 42 STOCKHOLM Facsimile No. +46 8 666 02 86		Authorized officer Peder Gjervaldsaeter/MN Telephone No. +46 8 782 25 00

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PCT/DK 99/00076

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5257403 A (LUIS A. ROVIRA ET AL), 26 October 1993 (26.10.93), column 3, line 46 - column 4, line 3; column 4, line 55 - column 5, line 19, figure 3 -- -----	3-5

INTERNATIONAL SEARCH REPORT

Information on patent family members

01/07/99

International application No.

PCT/DK 99/00076

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WO 9807052 A1	19/02/98	AU 4070697 A EP 0919002 A US 5703566 A US 5900816 A	06/03/98 02/06/99 30/12/97 04/05/99
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