

U.S. PATENTS FULLTEXT

1971 to 1975

FILE DESCRIPTION

U.S. Patents Fulltext, produced by Dialog, provides access to the complete text of all patents issued (in electronic form) by the U.S. Patent and Trademark Office (USPTO) from 1971 to 1975.

Each record contains all front-page information, including title, author(s), assignee(s), related applications, classification data, cited references, and abstract. The complete text of the original patent usually includes a description of drawings (but not the actual drawings), the background/field of invention, a brief summary of the invention, the detailed description/embodiment of the invention, examples, and all claims.

Additional post-issuance legal status information is supplied by IFI/Plenum Data Corporation for patents that have been reassigned, reexamined, granted an extension beyond the normal 17/20-year period, expired prior to the normal 17/20-year period, or reinstated after late payment of the maintenance fee.

SUBJECT COVERAGE

U.S. Patents Fulltext includes granted U.S. utility patents, defensive publications, reissue patents, and statutory invention registrations (S.I.R.s). Design and Plant patents are not included in this time period.

SOURCES

The full text of patents is obtained from the U.S. Patent and Trademark Office (USPTO). Post-issuance legal status information is supplied by IFI/Plenum Data Corporation.

TIPS

BEGIN 652

to search fulltext of all U.S. patents from 1971 to 1975.

USE DT=

to search USPTO areas of technology, e.g., mechanical, or for legal status

SELECT DT=M

SELECT DT=REASSIGNED

USE CT=

to determine if a U.S. patent has been cited in previous or subsequent patents

SELECT CT=US 3689845

USE RA=company

to locate patents reassigned to a company

SELECTE RA=VIELKA

USE RANK

for statistical analysis of a data field such as patent assignee

SELECT TOPIC; RANK PA

DIALOG FILE DATA

Inclusive Dates: 1971 to 1975

Update Frequency: Closed

File Size: Over 303,000 records as of October 2004

CONTACT

U.S. Patents Fulltext is provided by Dialog. Questions concerning file content should be directed to:

Dialog

The Knowledge Center

11000 Regency Parkway, Suite 10

Cary, NC 27511

Phone: 919-462-8600

Toll Free: 800-334-2564

Fax: 919-468-9890

E-Mail: dialogcustomer@thomson.com

DIALOG(R)File 652:US Patents Fulltext
(c) format only 2002 The Dialog Corp. All rts. reserv.

00803359

DT= Utility
/TI BIPOLAR DUAL-SLOPE ANALOG-TO-DIGITAL CONVERTER

PN= PATENT NO.: 3,930,252
PD=,PY= ISSUED: December 30, 1975 (19751230)
/AU,AU=,CY=,ST=,CN= INVENTOR(s): Storar, Robert C., Xenia, OH (Ohio), US (United States of America)
/PA,CO=,PA= ASSIGNEE(s): United Systems Corporation, (A U.S. Company or Corporation),
/CO,CO=,CN= Dayton, OH (Ohio), US (United States of America)
CK= EXTRA INFO: Assignment transaction [Reassigned], recorded February 18, 1987 (19870218)
Assignment transaction [Reassigned], recorded October 13, 1987 (19871013)

POST-ISSUANCE ASSIGNMENTS

/CO,CO=,RA= ASSIGNEE(s): VIELKA CO., 450 WEST WILSON BRIDGE ROAD, SUITE 350, COLUMBUS,
/CO,CO=,RG= OH., 43085, A CORP OF OH.

Assignor(s): DIGITEC CORPORATION, A CORP OF DE. -- signed: 12/16/1986

Recorded: February 18, 1987 (19870218)

Reel/Frame: 004679/0012

Brief: SECURITY INTEREST

Rep.: VORYS, SATER, ET AL SUITE 1111 1828 L STREET, N.W. WASHINGTON, DC., 20036

RK=

ASSIGNEE(s): DIGITEC CORPORATION

Assignor(s): VIELKA CO. -- signed: 10/09/1987

Recorded: October 13, 1987 (19871013)

Reel/Frame: 004781/0948

Brief: CHANGE OF NAME EFFECTIVE FEB. 27, 1987

Rep.: BIEBEL, FRENCH & NAUMAN 2500 KETTERING TOWER DAYTON, OHIO 45423

ASSIGNEE(s): SYCON CORPORATION, A CORP. OF DE.

Assignor(s): DIGITEC CORPORATION, A CORP. OF OHIO -- signed: 10/09/1987

Recorded: October 13, 1987 (19871013)

Reel/Frame: 004781/0952

Brief: MERGER OHIO, EFFECTIVE MAY 7, 1987

Rep.: BIEBEL, FRENCH & NAUMAN 2500 KETTERING TOWER DAYTON, OHIO 45423

AN= APPL. NO.: 5-427,953
AD=,AY= FILED: December 26, 1973 (19731226)
CL= U.S. CLASS: 341-128 cross ref: 324-99 D
IC= INTL CLASS: [2] H03K 13-20

References Cited

U.S. PATENT DOCUMENTS

CT= 2,798,667 7/1957 Spielberg et al. 235-154
/RF,RF= 2,824,285 2/1958 Hunt 340-347NT
2,951,203 8/1960 Tillman et al. 340-347AD
3,051,939 8/1962 Gilbert 340-347NT

(...)

EX= PRIMARY EXAMINER: Sloyan, Thomas J.
LR= ATTORNEY, AGENT, OR FIRM: Gilster, Peter S.

CLAIMS: 27

EXEMPLARY CLAIM: 1

DRAWING PAGES: 2

DRAWING FIGURES: 2

AR= ART UNIT: 236

FULL TEXT: 779 lines

ABSTRACT

/AB,TX A bipolar analog-to-digital converter system is disclosed which is

SAMPLE RECORD (cont'd)

particularly suited as a digital volt meter or digital multimeter. The system includes an integrator and a solid state switching circuit alternately connecting to and is directly proportional to the integrator either an analog input signal of unknown magnitude and of either polarity or an analog reference signal of preselected magnitude and fixed polarity. A pulse generator supplies pulses at a constant rate to a digital counter. Provision is included for resetting the counter to a predetermined first count and for causing the switching means to apply the input signal to the integrator so that its output signal increases linearly from a reset value while the counter advances from the first count to a predetermined second count. Circuitry responsive to the second count causes the switching circuit to apply the reference signal to the integrator so that its output signal decreases linearly toward the reset value while the counter advances from the second count toward a predetermined third count. The reset value is reached prior to the third count for an analog input signal of a first polarity but after the third count if of an opposite polarity. A digital display and associated digital circuitry cause display of a decimal number corresponding to the complement of the count in the counter when the output signal from the integrator reaches the reset value prior to the third count but are responsive to the counter reaching the third count for causing a display of a decimal number corresponding to the true count in the counter when the integrator output signal then reaches the reset value. The decimal number displayed thus digitally corresponds to the true magnitude of the analog input signal.

DESCRIPTION OF THE DRAWINGS

/DW, TX FIG. 1 is a schematic circuit diagram of an analog-to-digital converter of the present invention;

FIG. 2 constitutes a series of traces which are representative of signals at various points in the circuit.

Corresponding reference characters indicate corresponding parts throughout the drawings.

BACKGROUND OF THE INVENTION

/SU, TX This invention relates generally to analog-to-digital signal conversion systems and more particularly to such systems of the bipolar type, i.e., those which convert either positive or negative analog input signals.

The present disclosure is especially concerned with analog-to-digital (A-to-D) converters of the type used for digital volt meters (DVM's) or digital multimeters which indirectly, through time integration, first convert an analog input signal to a function of time and subsequently convert by means of a digital counter from the time function to a digital number representative of the magnitude of the analog input signal.

Among such integration converters, one of two different techniques has typically been employed, viz., the so-called single slope technique or the so-called dual slope technique.

(...)

SUMMARY OF THE INVENTION

/SU, TX Among the objects of the present invention may be noted the provision of an improved bipolar analog-to-digital converter; a provision of such a converter of the dual slope type; the provision of such a converter employing a single reference source; the provision of such a converter which does not require analog polarity determining or analog polarity sensing circuits but which nevertheless converts an analog input signal of either polarity, the polarity being unknown, to a digital number which is

(...)

DESCRIPTION OF THE PREFERRED EMBODIMENT

/EM, TX Referring now to FIG. 1, a preferred embodiment of the bipolar A-to-D converter system of this invention is adapted to convert an analog input signal, i.e., a voltage E_{in} , of unknown magnitude (but within a preselected range) to a digital form and to display this magnitude digitally as a decimal number. For this purpose, it is preferred to employ multi-segment LED display devices. Illustrated are seven-segment LED numerical display devices ND1, ND2, ND3 and ND4 for the four digits to the right of a decimal point (not shown), each such device being adapted to

SAMPLE RECORD (cont'd)

play digits 1 through 0. These may each be of the commercial type MAN 1A for example, available from Monsanto Commercial Products Company. A four-segment polarity and numerical overflow LED display device ND5 (such as commercial type MAN 1001A from the same source) displays the digit 1 to the left of the decimal point and the polarity (+) or (-) of the input signal. Hence, a number from -1.9999 to +1.9999 can be displayed.

(...)

What is claimed is:

/CM, TX

1. A bipolar dual-slope analog-to-digital converter system for converting an analog input signal of unknown polarity to a decimal number which is directly proportional to said analog input signal, said system comprising:
 - a. an integrator for providing an output signal which is proportional to the time integral of the magnitude with respect to a single analog reference of preselected magnitude and polarity of signal applied to the input thereof;
 - b. solid state switching means for alternately connecting to the input of said integrator either a first signal corresponding to an analog input signal of unknown magnitude and of either positive or negative polarity or a second signal constituting said single analog reference;
 - c. a pulse generator for supplying pulses at a substantially constant pulse repetition rate;
 - d. a digital counter for counting said pulses;
 - e. automatic means for effecting determination of the polarity of said

(...)

SEARCH OPTIONS

BASIC INDEX

SEARCH SUFFIX	DISPLAY CODE	REPORT (FIELD LENGTH)	FIELD NAME	INDEXING	SELECT EXAMPLES
—	—	—	All Basic Index Fields	Word	S ANALOG
/AB	AB	—	Abstract	Word	S ANALOG(1W)DIGITAL/AB
/AN	AN	—	Application Number ^{1,2}	Word	S 427953/AN S 427,953/AN
/AU	AU	—	Author/Inventor ¹	Word	S ROBERT(1N)STORAR/AU
/CM	CM	—	Claims	Word	S CONVERTER(W)SYSTEM/CM
/CO	CO	—	Company (Assignee) ¹	Word	S UNITED(W)SYSTEMS/CO
/DW	DW	—	Brief Description of Drawings	Word	S CIRCUIT(W)DIAGRAM/DW
/EM	EM	—	Preferred Embodiment	Word	S ANALOG(W)INPUT/EM
/PA	PA	—	Patent Assignee ¹	Word	S UNITED(W)SYSTEMS/PA
/PN	PN	PN (14)	Patent Number ^{1,2}	Word	S 3930252/PN S 3,930,252/PN
/RF	RF	—	Cited References ³	Word	S HUNT/RF
/SU	SU	—	Summary/Background of Invention	Word	S DIGITAL(W)VOLT(W)METER?/SU
/TI	TI	TI (60)	Title	Word	S ANALOG(W)DIGITAL(W)CONVERTER/TI
/TX	TX	—	All Text	Word	S DISPLAY(W)DEVICE?/TX

¹ Searchable in the Basic Index and in the Additional Indexes.

² Application numbers and patent numbers can be searched with or without the country code and with or without punctuation. In addition, application numbers can be searched with the USPTO series number, e.g. S AN=7-403,972 or with a trailing year, e.g., S AN=US 403972-1989.

³ To search information pertaining to cited patents, i.e., inventor, U.S. class, and publication date, use RF=. To search text of non-patent citations, use /RF.

ADDITIONAL INDEXES

SEARCH PREFIX	DISPLAY CODE	REPORT (FIELD LENGTH)	FIELD NAME	INDEXING	SELECT EXAMPLES
AC=	AC	—	Application Country	Phrase	S AC=US
AC=	PR	—	Priority Application Country	Phrase	S AC=FR/PR
AD=	AD	—	Application Date ^{4,5}	Phrase	S AD=19731226 S AD=197312 S AD=1973
AD=	AD	—	Application Date (Main) ^{4,5}	Phrase	S AD=19731226/MP S AD=197312/MP
AD=	PR	—	Priority Application Date ^{4,5}	Phrase	S AD=19731226/PR S AD=197312/PR
AD=	RA	—	Related Application Date ^{4,5}	Phrase	S AD=19651019/RA S AD=196510?/RA

ADDITIONAL INDEXES (cont'd)

SEARCH PREFIX	DISPLAY CODE	REPORT (FIELD LENGTH)	FIELD NAME	INDEXING	SELECT EXAMPLES
AD=	RE	—	Application Date of Original Patent in Reissue Records ^{4,5}	Phrase	S AD=19651007/RE S AD=196510??/RE
AN=	AN	—	Application Number ^{1,2,5}	Phrase	S AN=427953 S AN=5-427,953 S AN=US 427953-1973
AN=	AN	—	Application Number (Main) ^{1,2,5}	Phrase	S AN=427953/MP S AN=5-427,953/MP
AN=	PR	—	Priority Application Number ^{1,2,5}	Phrase	S AN=1-123455/PR S AN=JP 73113457/PR
AR=	AR	—	Art Unit	Phrase	S AR=236
AU=	AU	—	Author/Inventor ¹	Phrase	S AU=STORAR ROBERT?
AU=	AU	—	Author/Inventor Country	Phrase	S AU=US
AY=	AD	—	Application Year	Phrase	S AY=1973
CE=	CE	—	Field of Search	Phrase	S CE=340-384 S CE=340680 S CE=340
CK=	CK	—	Assignee Code (Original Assignee) ⁶	Phrase	S CK=42458
CL=	CL	—	U.S. Class	Phrase	S CL=340-384 S CL=340384 S CL=340
CN=	CN	—	Named Country ⁷	Phrase	S CN=JP S CN=UNITED STATES?
CO=	CO	—	Company (Assignee) ¹	Phrase	S CO=VIELKA?
CT=	CT	—	Cited Patents ^{2,3,5,8}	Phrase	S CT=2798667 S CT=US 2279667 S CT=DE 474900
CY=	CY	—	City ⁹	Phrase	S CY=SCOTTSDALE
DD=	DD	—	Disclaimer Date	Phrase	S DD=19741105
DT=	DT	—	Document Type	Phrase	S DT=REEXAMINED
EN=	PA	—	Entity of Assignee	Phrase	S EN=NON U S INDIVIDUAL S EN=U S COMPANY?
EX=	EX	—	Name of Examiner	Word & Phrase	S EX=(SLOYAN(2N)THOMAS) S EX=SLOYAN, THOMAS J.
GI=	GI	—	Statement of Government Interest	Word	S GI=(SUPPORT(S)GOVER?)
IC=	IC	—	International Patent Class ¹⁰	Phrase & Phrase	S IC=H03K 13-20 S IC=H03K
—	LI	—	Line Count		
LR=	LR	—	Legal Representative	Word & Phrase	S LR=(GILSTER(2N)PETER) S LR=GILSTER, PETER S.
PA=	PA	—	Assignee Country	Phrase	S PA=US
PA=	PA	—	Patent Assignee ¹	Word & Phrase	S PA=(UNITED(W)SYSTEMS) S PA=UNITED SYSTEMS?
PD=	PD	—	PCT Publication Date ^{4,5}	Phrase	S PD=19751230
PD=	PD	—	Publication Date ^{4,5}	Phrase	S PD=920421 S PD=9204
PD=	RA	—	Related Patent Date ⁵	Phrase	S PD=19721124/RA S PD=7411?/RA
PD=	RE	—	Patent Date of Original Patent in Reissue Records ^{4,5}	Phrase	S PD=19730814/RE S PD=7308?/RE
PN=	PN	PN (14)	PCT Publication Number ^{1,2,5}	Phrase	S PN=3,930252 S PN=US 3930252
PN=	PN	PN (14)	Patent Number ^{1,2,5}	Phrase	S PN=5,107,540 S PN=US 5107540
PN=	PN	PN (14)	Patent Number (Main) ^{1,2,5}	Phrase	S PN=3,930,252/MP S PN=US 3930252/MP
PN=	PN	PN (14)	Patent Number of Original Patent in Reissue Records ^{1,2,5}	Phrase	S PN=4,654,419/RE S PN=US 4654419/RE
PN=	RA	PN (14)	Related Patent Number ^{1,2,5}	Phrase	S PN=3901948/RA S PN=US 3901948/RA
PY=	PY	—	Publication Year (All, Including Reissue and PCT Dates)	Phrase	S PY=1975
PY=	PY	—	Publication Year (Main Patent)	Phrase	S PY=1975/MP
RF=	RF	—	Cited References	Phrase	S RF=HUNT S RF=TILLMAN? S RF=235-154 S RF=235154000
ST=	ST	—	State ⁹	Phrase	S ST=ARIZONA
UD=	—	—	Update	Phrase	S UD=9999 S UD=19740122
Post-Issuance Legal Status Fields					

ADDITIONAL INDEXES (cont'd)

SEARCH PREFIX	DISPLAY CODE	REPORT (FIELD LENGTH)	FIELD NAME	INDEXING	SELECT EXAMPLES
DD= DT=	DD DT	— —	Disclaimer Date Legal Document Type	Phrase Phrase	S DD=19740911 S DT=EXPIRED S DT=REASSIGNED
— RA=	LS RA	— —	All Post-Issuance Legal Status Fields Present Reassignment Data/Post Issue Assignee ^{1,11}	Word & Phrase	S RA=VIELKA S RA=VIELKA CO? S RC=B1D273843 S RC=304
RC=	RC	—	Reexamination Certificate Number and Sequence	Phrase	S RE=90-003000
RE=	RE	—	Reexamination Request Date	Word & Phrase	S RG=DIGITEC?
RG=	RG	—	Reassignment Assignor ¹¹	Word & Phrase	S RG=(DIGITEC(W)CORP?) S RK=(SECURITY(W)INTEREST) S RK=SECURITY INTEREST?
RK=	RK	—	Reassignment Kind	Word & Phrase	S RQ=INTERNATIONAL FLAVORS? S RQ=(FLAVORS(W)FRAGRANCES)
RQ=	RQ	—	Reexamination Requestor ¹¹	Word Phrase	S UL=9999
UL=	—	—	Update - Legal Status		

⁴ Dates can be searched with either 2-digit or 4-digit years, e.g., S AD=199011 or S AD=9011; S PD=19901128 or S PD=901128.

⁵ Special suffixes can be used to further restrict retrieval, as noted: /AU (Inventor), /CO (Patent Assignee), /MP (Main Patent), /PA (Patent Assignee), /PR (Priority Application), /RA (Related Application), /RE (Reissue Records), and /RF (Cited Reference).

⁶ Assignee code is also searchable using the PA= index.

⁷ Includes country of inventor, assignee, and cited patent. Use suffixes /AU, /PA, or /RF to restrict data to a particular type of country.

⁸ Non-U.S. cited patents are not in DIALOG standard format.

⁹ Includes city or state of either the inventor or the assignee.

¹⁰ Although not searchable, the edition of the International Patent Classification in use at the time that the class was assigned displays in brackets preceding the class code.

¹¹ New Assignees and Assignors can also be searched using CO= , or in the Basic Index as single words without suffix qualification.

U.S. PATENTS FULLTEXT

File 652

SPECIAL FEATURES

For command descriptions, enter HELP LIMIT, HELP SORT, HELP RANK, HELP MAP, HELP IDPAT online.

LIMIT	/ -- DIALOG Accession Number /C -- Chemical Patents /E -- Electrical Patents /M -- Mechanical Patents /YYYY -- Publication Year	S S3/02068202-9999999 S S4/C S S2/E S S4/M S S2/1992
SORT	AU, CL, CO, IC, PA, PD, PN	PRINT S5/5/1-24/PN
RANK	All phrase- and numeric-indexed fields in the Additional Indexes can be ranked. Additional RANK codes include: ANPR, CLOR, ICOR, PNMP	RANK ANPR
MAP	ALLREF, AN, ANPR, ANYY, CE, CL, CLOR, CO, CT, IC, ICOR, PA, PN, PNMP, REF	MAP PN TEMP S1 MAP ANPR TEMP S4
IDPAT	Identify patent duplicates and display all or selected patent groups.	IDPAT IDPAT S1 SHORT

PREDEFINED FORMAT OPTIONS

NO.	DIALOGWEB FORMAT	RECORD CONTENT
0	--	Bibliographic Citation plus Abstract, All Post-Issuance Legal Status Fields Present, Cited References, Summary of Invention, Brief Description of Drawings and Claims
1	--	DIALOG Accession Number
2	--	Bibliographic Citation plus the following Front Page Information: U.S. Class Codes; International Class Codes; Field of Search; Cited References; Name of Examiner; Name of Attorney, Agent, or Firm; PTO Art Unit; Number of Claims; and Line Count
3	Medium	Bibliographic Citation (includes Document Type, Title, Patent Number, Patent Date, Inventor(s), Assignee(s), Application Number, Application Date, PCT Data, Related Applications, and Word Count)
4	--	Bibliographic Citation plus Abstract
5	--	Full Record except Text of Specification (All Data in Format 2 plus Abstract, Claims, and All Post-Issuance Legal Status Fields Present)
6	Short	Title, Number of Claims and Word Count
7	Long	Bibliographic Citation plus Abstract, Claims, and All Post-Issuance Legal Status Fields Present)
8	--	Title, U.S. Class Codes, International Class Codes, Number of Claims and Word Count
9	Full	Full Record
K	--	KWIC (Key Word In Context) displays a window of text; may be used alone or with other formats

OTHER OUTPUT OPTIONS

For an explanation, enter HELP TYPE, HELP REPORT, HELP UDF, HELP TAG online.

REPORT	Output can be displayed in table format. REPORT codes with field lengths in parentheses are listed in the Search Options tables. Default table width is 72 characters; use SET H 132 to set maximum table width.	REPORT S2/PN, TI/ALL
USER DEFINED FORMATS	User-defined formats can be specified using the display codes indicated in the Search Options tables.	TYPE S3/TI, PA/1-5
TAG	Output can be displayed with tags identifying each display field.	TYPE S2/3/1-5 TAG
DIRECT RECORD ACCESS	DIALOG Accession Number	TYPE 02068202/5 DISPLAY 0074483/TI, PA PRINT 0301964/5

FOR ONLINE HELP:

See HELP FIELDS 652 for searchable fields; HELP FORMAT 652 for output formats; HELP LIMIT 652 for limits; HELP RATES 652 for cost information; HELP SORT 652 for sorts.