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(71) Applicant: **PIONEER ELECTRONIC CORPORATION**
4-1, Meguro 1-chome
Meguro-ku
Tokyo (JP)

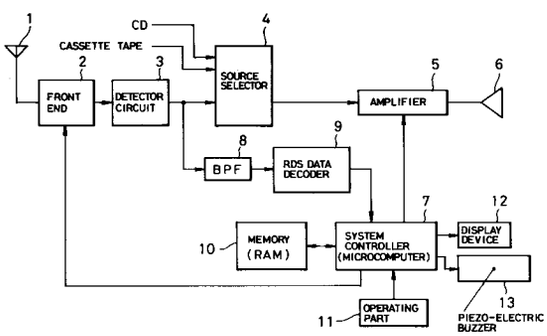
(72) Inventor: **Kasa, Koichi, c/o Pioneer Elec. Corp. Kawagoe Works,**
No. 25-1, Aza Nishi-machi
Ohaza Yamada,
Kawagoe-shi,
Saitama (JP)

(74) Representative: **Klingseisen, Franz, Dipl.-Ing. et al**
Patentanwälte,
Dr. F. Zumstein,
Dipl.-Ing. F. Klingseisen,
Postfach 10 15 61
D-80089 München (DE)

(54) RDS receiver using EON information

(57) In an RDS receiver the station being received during an interruption reception can be directly reset as a station of this network during the interruption reception, and the station of interruption reception can be continuously received after the completion of a particular information program. The RDS receiver comprises: interruption mode setting means for designating an interruption reception for the particular information program; data storing means for collecting broadcast station frequency data of other network included in the EON information; broadcast start detecting means for detecting a start of the broadcast of the particular information program of the other network based on a predetermined data included in the EON information; and switching instructing means for designating a switching between this and other networks. When a start of the broadcast of the particular information program is detected by the broadcast start detecting means, a station of other network is searched for based on the broadcasting station frequency data stored in the data storing means, then the searched station is received by the interruption reception. If a switching between this and other networks is designated by the switching instructing means during the interruption reception, returning to a station of this network before the interruption reception is inhibited.

FIG. 2



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BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to an RDS receiver capable of performing an automatic interruption reception of a designated information program of another network station by utilizing Enhanced Other Network Information (EON).

2. Description of Background Information

RDS (Radio Data System) is an FM multiplex broadcasting system recommended by International Radio Consultative Committee (CCIR). The RDS provides mainly car radios with a variety of services, such as the display of the broadcast station name, automatic tuning, and automatic reception of traffic information.

Conventionally, the automatic reception of traffic information in an RDS receiver was only possible for traffic information from a receiving station previously set in the receiver and stations associated with that station, i.e., the traffic information from stations of "this network". This has been resulting in a drawback that when no traffic information program is broadcasted in this network, the user cannot get any traffic information all the time.

To deal with this problem, the present applicant has filed a patent application for a method for receiving traffic information whereby traffic information programs from other network stations can be automatically received by an interruption reception (see Japanese Patent Application No. Hei 4-213910).

This traffic information receiving method utilizes newly established Enhanced Other Network (EON) information which comprises 14A and 14B groups to automatically detect that a traffic information program from other network stations has started, and automatically switch the receiving station of the RDS receiver from a previously set station of this network, to a station of another network thereby to receive the traffic information which is currently broadcasted on the other network, by an interruption reception.

This prior art system, however, was designed that the receiving station of the RDS receiver is automatically returned to the originally received station of this network when the traffic information broadcasted from another network station which was received by the interruption reception is completed. Therefore, if the user wishes to continuously receive the station being received during the interruption reception of the station of another network, then the user must perform complicated operations of: forcibly canceling the interruption mode by operating an interruption mode setting button provided in an operation part; performing a search operation; and adjusting the receiving frequency to the frequency of the station of the interruption reception. There also was a problem that the broadcasted program from the interruption reception station will be quit immediately when the interruption mode is canceled since the receiving frequency is once returned to the former station of this network which was received before the interruption reception. Therefore, it is desired to develop an RDS receiver in which the station being received during an interruption reception can be directly reset as a station of this network.

OBJECT AND SUMMARY OF THE INVENTION

An objective of the present invention is to provide an RDS receiver in which the station being received during an interruption reception can be directly reset as a station of this network during the interruption reception, and the station of the interruption reception can be continuously received by the receiver without returning to the station which was received before the interruption reception.

To achieve the above objective of the invention, an RDS receiver according to the first aspect of the invention comprises: interruption mode setting means for designating an interruption reception for a particular information program; data storing means for collecting broadcast station frequency data of other network included in said enhanced other network information; broadcast start detecting means for detecting a start of the broadcast of said particular information program of the other network based on a predetermined data included in said enhanced other network information; and switching instructing means for designating a switching between this and other networks, wherein a station of other network is searched for based on the broadcast station frequency data stored in said data storing means, then the searched station is received by the interruption reception when a start of the broadcast of said designated information program is detected by said broadcast start detecting means; and a return to a station of this network before the interruption reception is inhibited if a switching between this and other networks is designated by said switching instructing means during the interruption reception.

According to the second aspect of the invention, the RDS receiver according the first aspect of the invention is arranged that the interruption mode is canceled when an interruption cancel command is given by the interruption mode setting means during an interruption reception.

According to the third aspect of the present invention, the RDS receiver according to the first aspect of the invention is arranged that return to a station of this network received before the interruption reception is inhibited and also the interruption mode is canceled when the switching between this/other networks is instructed by the switching instructing means during an interruption reception.

RDS data consists of 16 groups, group 0 to group 15, including undefined groups. Recently, 14A and 14B groups belonging to the undefined groups of this RDS data have been defined newly for EON information as shown in Figs. 1A and 1B. This EON information permits the transmission of not only information of a currently receiving local or this network but also information of other non-receiving networks. This invention is designed to utilize the EON information in the newly defined 14A and 14B groups.

BRIEF DESCRIPTION OF THE DRAWINGS

Figs. 1A and 1B are diagrams showing the data formats of EON information;

Fig. 2 is a block diagram illustrating an embodiment of the RDS receiver according to the present invention;

Figs. 3 and 4, when combined, are a flow chart showing a first example of operations of the embodiment of the present invention; and

Fig. 5 is a flowchart showing a second example of operations of the embodiment of the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Before going into the description of preferred embodiments of the present invention, the data formats of EON information in Figs. 1A and 1B, on which this invention is premised, will be discussed first. In Figs. 1A and 1B, "(TN)" affixed to the end of each code indicates that it is data of a local network (This Network), and "(ON)" likewise indicates that it is data of other networks (Other Network).

In the 14A group in Fig. 1A, a program identification (ID) code PI(TN) of this network is given in the first block. This PI(TN) code consists of a country code (4 bits), a broadcasting area code (4 bits), and a program reference number code (8 bits), a total of 16 bits. An RDS receiver searches this PI(TN) code for any other station with the same code. That is, this PI(TN) code serves to allow the user to continuously listen to the same program from another network station having the same code even while the user is driving outside the service area of this network.

The second block in the 14A group includes a group type code (Group type code), a version bit B_0, a traffic program station code TP(TN), a program type code PTY(TN), a traffic program station code TP(ON) and an information classification code (Usage code).

The group type code (Group type code) is a 4-bit code to identify what data follows this code, and specifies 16 groups 0 to 15 using four bits. The subsequent version bit B_0 (1 bit) specifies either the version A or B. $B_0 = 0$ indicates the A version and $B_0 = 1$ indicates the B version. Therefore, the group type code in the 14A group is given by "11100" as shown in Fig. 1A and the group type code in the 14B group is given by "11101" as shown in Fig. 1B.

The traffic program station code TP(TN) is a 1-bit code indicating if a traffic program station is presently located in this network. The program type code PTY(TN) is a 5-bit code to identify 32 types of program types 0 to 31 (music program, news program, sports program, etc.). Program types are assigned based on previously determined regulations.

The traffic program station code TP(ON) is a 1-bit code indicating if a traffic program station is presently located in other networks. By always monitoring this TP(ON) code, it is possible to find out in real time if there is a traffic program station presently in other networks.

The information classification code (Usage code) is a 4-bit code indicating the type of information sent in the next third block. As shown in Fig. 1A, 16 types of information (0) to (15) are defined by using 4-bit codes "0000" to "1111".

The character codes of the names of broadcasting stations (char.1 to char.8) are described in areas (0) to (3) in the third block. The broadcasting frequency data AF(ON) of other networks is described in a method A format in an area (4) in the third block, and the broadcasting frequency data (Tuning freq.(TN)) of this network and the broadcasting frequency data (Mapped PM freq.(ON)) of other networks are described in a mapped frequencies format in areas (5) to (9). The format of the broadcasting frequency data in the area (4) or the areas (5) to (9) is previously selected by each broadcasting station, so that broadcasting frequency data is transmitted in the selected format.

Areas (10) and (11) are undefined, an area (12) is for linking information, an area (13) includes program type code PTY(ON) and traffic announce code TA, and an area (14) includes a program initiation number PIN(ON) for other networks. An area (15) is a data area reserved for a broadcasting station. The fourth block includes a program ID code PI(ON) for other network.

In the 14B group in Fig. 1B, a program identification (ID) code PI(TN) of this network is given in the first block. The second block in the 14B group includes a group type code "11101" indicating the 14B group, a traffic program station code TP(TN), a program type code PTY(TN), a traffic program station code TP(ON) and a traffic announce code TA-(ON). By monitoring the traffic announce code TA-(ON) of other networks, therefore, it is possible to find out in which station in other networks the traffic information is broadcasted.

The third block in the 14B group includes a program ID code PI (TN) of this network, and the fourth block includes a program ID code PI (ON) for other networks.

The RDS receiver according to the present invention is devised to utilize the EON information described above, and a station of other network is searched for based on the broadcast station frequency data stored in the data storing means, then the station broadcasting that information program is received by the interruption reception when a start of the broadcast of a particular information program is detected from the EON information by the broadcast start detecting means.

When the switching between this and other networks is instructed by the switching instructing means, the station of the other network received by the interruption reception is reset as a station of this network. Thereafter, the network of the station being received by the interruption reception is newly determined as this network.

Generally, particular information programs (for example, a traffic information program) are broadcasted at certain regular intervals. Therefore, once the broadcast of a particular information program is completed, the possibility that the particular information program is broadcasted again in the pertinent station within a short period of time is very low. Therefore, the RDS receiver according to the first aspect of the present invention is designed that, upon completion of an interruption reception, the transmitting station received by the interruption reception is reset as a station of this network, so that a station of another network in which it is very likely that the particular information program is broadcasted can be efficiently detected. In this way, the particular information program of other network stations can be received by an interruption reception within a shorter period of time.

According to the second aspect of the invention, the RDS receiver according the first aspect of the invention is arranged that the interruption mode is canceled when an interruption cancel command is given by the interruption mode setting means during an interruption reception. The station received by the interruption reception can be continuously received after the broadcast of the particular information program by the station of interruption reception is completed.

According to the third aspect of the present invention, the RDS receiver according to the first aspect of the invention is arranged that return to a station of this network received before the interruption reception is inhibited and also the interruption mode is canceled when the switching between this and other networks is instructed by the switching instructing means during an interruption reception. Thus, by a more simple operation, the station received by the interruption reception can be continuously received after the broadcast of the particular information program by the station of interruption reception is completed.

The embodiment of the RDS receiver according to the present invention will be described hereinafter with reference to the accompanying drawings.

Fig. 2 is a block diagram of an embodiment of the RDS receiver according to the present invention. In the figure, the part denoted by the reference numerals 1 through 6 is a so-called super heterodyne receiver for the FM reception, or the AM/FM reception. The reference numeral 1 denotes an antenna, 2 denotes a front end, 3 denotes a detector circuit, 4 denotes a source selector, 5 denotes an amplifier, and 6 denotes a speaker. The front end 2 is controlled by a system controller 7 so that the oscillation frequency of a PLL circuit (not illustrated) provided therein is variably controlled, thereby it is tuned at a station of which the reception is desired.

The numeral 8 denotes a band-pass filter (BPF) having a center frequency of 57KHz for extracting the RDS signal only from an output signal of the detector circuit 3. The numeral 9 denotes an RDS data decoder for decoding the RDS signal fed from the BPF 7 into original data. The numeral 10 denotes a memory (RAM) for storing the decoded RDS data, and the numeral 11 denotes an operating part, 12 denotes a display device consisting, for example, of a liquid crystal display, and the numeral 13 denotes an alarm device consisting, for example, of a piezo-electric buzzer.

Referring now to flowcharts of Figs. 3 and 4, a first example of the operation of the interruption reception in the embodiment described above will be described.

In the following examples of operation, explanation will be given for a case where traffic information programs are selected as particular information programs of other network which are to be received by the interruption reception. It is assumed that the information classification code (User Code) in the second block of the 14A group of the EON information is "0100" (= 4), and broad-

casting station frequency data AF(ON) of other network is described in the third block in accordance with this information classification code (4).

It is also assumed that the power current of a car-stereo incorporating the RDS receiver illustrated in Fig. 2 has been thrown in (step S1), and the signal source position of the selector 4 is placed at the CD position (step S2), and a reproduction sound of the CD is being generated by the speaker 5 (step S3). Furthermore, it is assumed that an interruption setting key provided in the operating part 11 (not shown in the figure) is operated at a set position so that an interruption reception of traffic information is enabled.

Under the condition described above, the front end 2 of the RDS receiver is tuned at an FM station which was selected at a previous time, or an FM station selected by a preset operation, and the radio wave from the FM station having been set is received at all times (step S4). The FM station being received in this way is the so-called "This Network" (TN) station.

The FM radio wave of the above-mentioned this network station being received is detected by the detector circuit 3, and only the RDS signal component of 57kHz is extracted at the band-pass filter 8, then decoded to original data at the RDS data decoding circuit 9 (step S5). The system controller 7 then continuously monitors the traffic program station code TP(TN), and the traffic announce code TA(TN) in the 0A group of the decoded RDS data (step S6). If a traffic information broadcasting station exists in the other network, values are set in such a way that TP(TN) = 0, TA-(TN) = 1.

The system controller 7 judges that a traffic information program station exists in the other network when the traffic program station code TP(TN) is 0, and traffic announce code TA(TN) is 1 in the 0A group (step S7), and continuously monitors the data in the 14A group which are being supplied successively (step S8). When the traffic program station code TP(ON) is 1 (step S9), the system controller 7 gathers the broadcast frequency data AF(ON) described in the third block of the 14A group, and stores it into the memory 10 (step S10).

Subsequently, the system controller 7 monitors the data in the 14A group (step S11). When the traffic announce code TA(ON) in the 14B group equals 1, it judges that the broadcast of traffic information has started in any one station in the other network (step S12), and sets the receiving frequency in the front end 2 to frequency of the station of the other network according to the stored frequency data AF of broadcasting stations of the other network (step S13).

Subsequently, the system controller 7 judges the receiving condition of the station which has been set, for example by using the reception level thereof (step S14), and the reception is continued if the receiving condition is good. Otherwise, the system controller sets the next station based on the broadcasting station frequency data AF, and repeats the operations in steps S13 and S14.

If a station of a good receiving condition is received, the system controller then monitors the RDS data of the received station (step S15), and the traffic program station code TP(TN) and the traffic announce code TA (TN) in the 0A group of the RDS data being transmitted by the received station (step S16). If the condition of TP(TN) = 1 and TA = 1 does not exist, the system controller 7 judges that the received station is currently broadcasting traffic information, and starts an interruption reception of the traffic information of the received station (step S17).

More particularly, the system controller operates the source selector 4 to select a CD position to a detector circuit 3 position, and operates the piezoelectric buzzer 13 to generate a notification sound (step S18). After this operation, the traffic information of the other network station received by the interruption reception is generated by the speaker 6 via the amplifier 5 in place of the CD playback signal which has been reproduced until the switching of signal source (step S19).

The provision of the notification sound by the piezoelectric buzzer 13 described above is made so that the driver who is listening to the broadcast is able to distinguish whether the traffic information received by the interruption reception is from a station of this network or a station of the other network which is received by using the EON information. The piezo electric buzzer 13 is controlled, for example, to generate a sound once ("bleep") when the traffic information is of this network, and generate the sound twice ("bleep, bleep") when the traffic information is of the other network by the EON information.

Of course, the method of notification is not limited to the use of the piezoelectric buzzer 13 described above, and for example, the volume level of the traffic information being reproduced from the speaker 6 may be raised from a reproduction level up to that time. If the display device 12 is of a type that can change the display color, different colors may be used for different receiving station, and otherwise the blinking of the display may be adopted.

Furthermore, the frequency response characteristic of the amplifier 5 may be switched to change the reproduction sound from the speaker 6 to be a particular tone, and there are various ways which can be adopted. The essential point is that the user can distinguish whether the traffic information being received is of this network or of the

other network which is received by the interruption reception performed by using the EON information.

When the interruption reception of the traffic information of the other network station has started in the way described above, the system controller 7 then performs the operations in the control loop of the steps S19, S20, S21 and S19 for monitoring whether or not a switch command for the switching between this network and other network is generated by the operation of the this and other networks switching instruction key (not shown) until the broadcasting of the traffic information from the other network station has been completed.

A key may be provided exclusively for the switching of this and other networks, and otherwise the interruption setting key can be used also for this purpose. When the interruption setting key is commonly used for this purpose, the generation of the this and other network switching command may be discriminated when the interruption setting key is depressed for more than a normal period.

If the this/other network switching command is not generated by the this/other network switching command key before the completion of the traffic information received by the interruption reception, the traffic announce code TA(TN) of the 0A group being transmitted from the other network station received by the interruption reception will switch from "1" to "0" ("Y" of step S21). The system controller 7 will identify the completion of the traffic information broadcast by this change in the code TA(TN) (step S22).

In step S23, the system controller 7 operates the source selector 4 to select the original CD position, and at the same time switches the reception frequency of the front end 3 to the frequency which was selected before the interruption reception, and again reproduces the formerly selected CD playback sound from the speaker 6 (step S3).

If, on the other hand, the switching command for commanding the switching between this and other networks is generated in step S20 before the completion of the broadcast of the traffic information, the processing step proceeds to the step S24, so that the station of the other network currently being received by the interruption reception will be set as this network station. By this operation, the station broadcasting the traffic information received by the interruption reception will thereafter be this network station, so that returning to the former receiving station selected before the interruption reception is inhibited.

If the interruption setting key is depressed to cancel the interruption reception ("Y" position of step S25) before the completion of the broadcast of the traffic information, then the process goes to the step S28 so that the RDS receiver will continuously receive the station received by the interruption reception even after the completion of the broadcast of the traffic information. Under this condition, the position of the selector 4 is also maintained so that the program of the pertinent station will be continuously reproduced from the speaker 6. Therefore, even though the user wishes to receive the station received by the interruption reception, it is no more required to perform complicated operations such that the receiving station is tuned by searching the reception frequency of the desired station after once forcibly canceling the interruption reception mode.

If the canceling of the interruption mode is not instructed ("N" position of the step S25), the process proceeds to the step S26 whereat the source selector 4 is operated back to the CD playback position. Thus, the CD reproduction sound is again reproduced from the speaker 6 (step S3), and thereafter the station of the other network received by the interruption reception will become a this network station, and monitoring of the RDS data will be started in a state wherein the pertinent station is selected as this network station (step S4).

Fig. 5 shows a second example of the operations in the embodiment described above.

In this example, the operations of steps S1 through S18 are the same as those in the example shown in Figs. 3 and 4, those program steps are omitted in the flowchart of Fig. 5.

In this second example, when the switching instruction between this and other networks is received from the switching instruction key, the receiving station received by the interruption reception is switched as this network station (step S24), and the position of the source selector 4 is maintained even after the completion of the broadcast of traffic information so that the broadcast of the station selected by the interruption reception is received continuously (step S28). By adopting this processing operations, the broadcast of the station received by the interruption reception can be continuously received after the completion of the broadcast of traffic information.

In the foregoing, two types of operations have been described by way of examples in which traffic information is received as particular information program by the interruption, the interruption reception according to the present invention is not limited to the traffic information. Rather, the present invention is applicable to any type of information program as far as the start of the broadcast of a program can be detected by using the EON information.

More particularly, the program type code PTY-(ON) about the other network is transmitted with information classification code (Usage code) in the second block of the 14A group = (13), the type of information program (for example, music program,

news program, and sports program) of the other network to be received by the interruption can be designated by using this PTY(ON).

Furthermore, in order to know the broadcast time of such a designated information program, the transmission pattern of the start time of the particular program may be standardized such that the EON information of the 14A group is transmitted predetermined times when the broadcast of the program is started. With such a feature, the interruption reception can be performed for any information program in the other network by monitoring the EON information of 14A and 14B groups.

As described in the foregoing description, according to the first aspect of the present invention, the broadcasting station which is currently received by the interruption reception can be reset as this network station. Accordingly, during the standby period for the next interruption reception, the station received by the interruption reception which has completed the broadcast of the designated particular information program is set as a this network station and the monitoring of the start of the broadcast of a particular information program of a station of the other network can be newly performed. With these operations, a particular information program can be received by an interruption reception within a shorter time.

According to the second aspect of the invention, the broadcast of the station received by the interruption reception can be continuously received even after the completion of the broadcast of the particular information program in the station received by the interruption reception.

According to the third aspect of the invention, only a simple operation is needed for the continuous reception of the broadcast of the station received by the interruption reception after the completion of the broadcast of the particular information program in the station received by the interruption reception.

Claims

1. An RDS receiver capable of receiving an RDS broadcast wave including enhanced other network (EON) information, comprising:

interruption mode setting means for designating an interruption reception for a particular information program;

data storing means for collecting broadcast station frequency data of other network included in said enhanced other network information;

broadcast start detecting means for detecting a start of the broadcast of said particular information program of the other network based on a predetermined data included in said enhanced other network information;

switching instructing means for instructing a switching between this and other networks;

interruption reception means for searching for a station of other network based on the broadcast station frequency data stored in said data storing means and interruption reception when a start of the broadcast of said designated information program is detected by said broadcast start detecting means; and

control means for inhibiting a return to a station of this network before the interruption reception if a switching between this and other networks is designated by said switching instructing means during said interruption reception.

2. An RDS receiver as claimed in claim 1, wherein said control means is operative to cancel said interruption mode if an interruption cancel instruction is given by said interruption mode setting means during said interruption reception.

3. An RDS receiver as claimed in claim 1, wherein said control means is operative to inhibit said returning to said this network station before the interruption reception and to cancel said interruption mode if an interruption cancel instruction is given by said interruption mode setting means during said interruption reception.

FIG.1A

14A GROUP

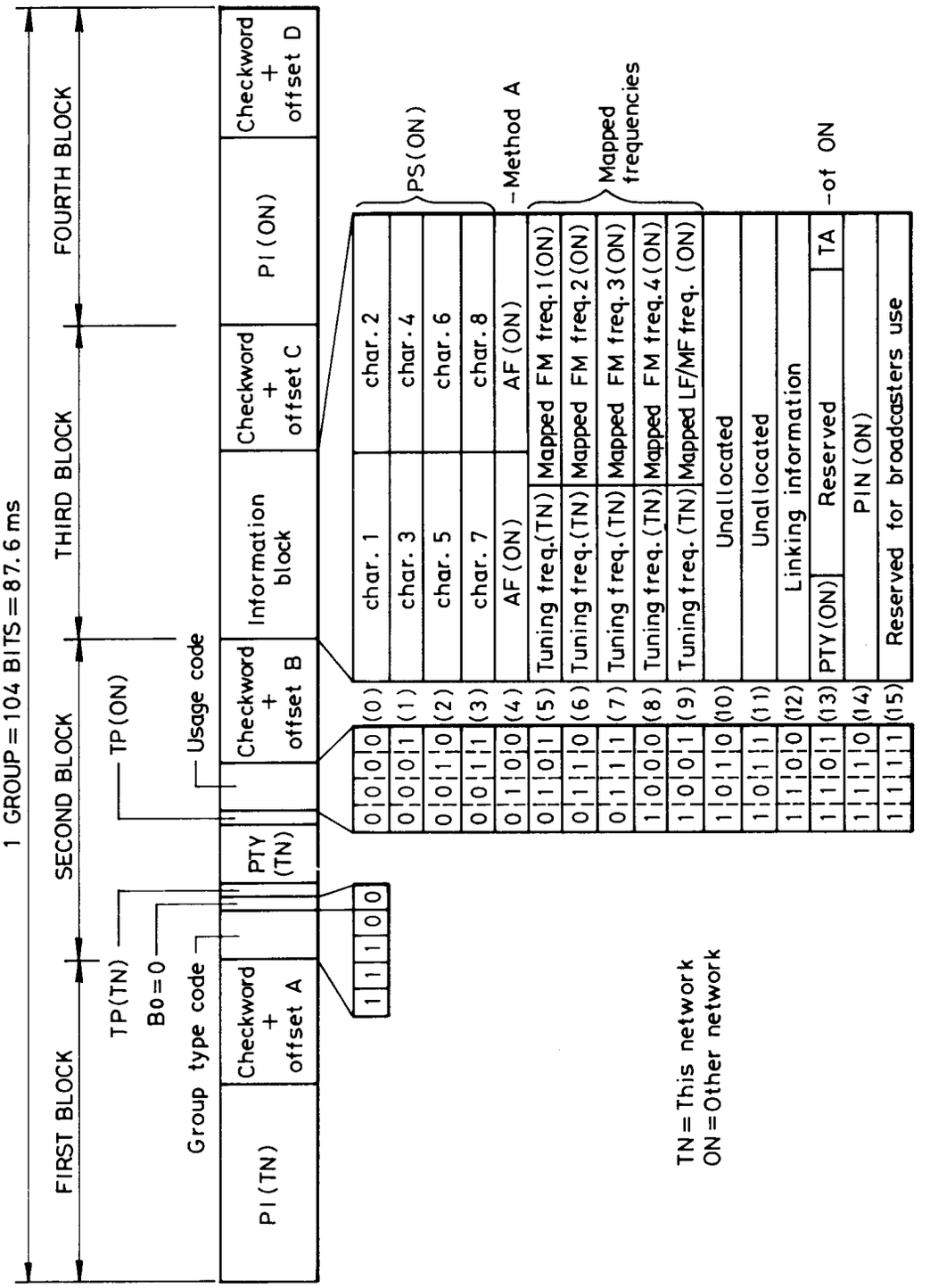


FIG.1B

14B GROUP

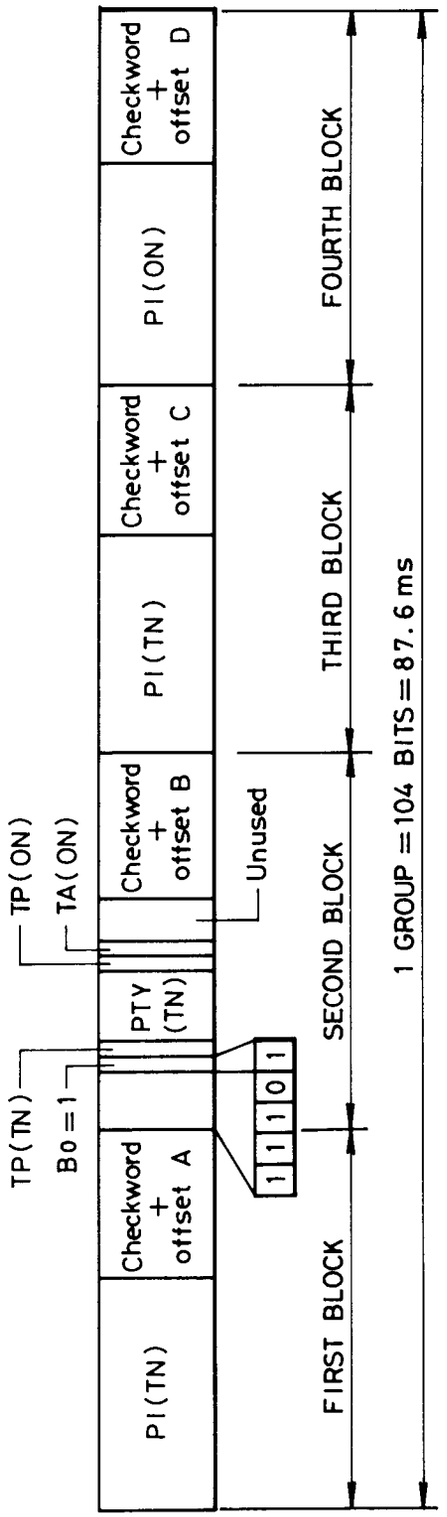


FIG. 2

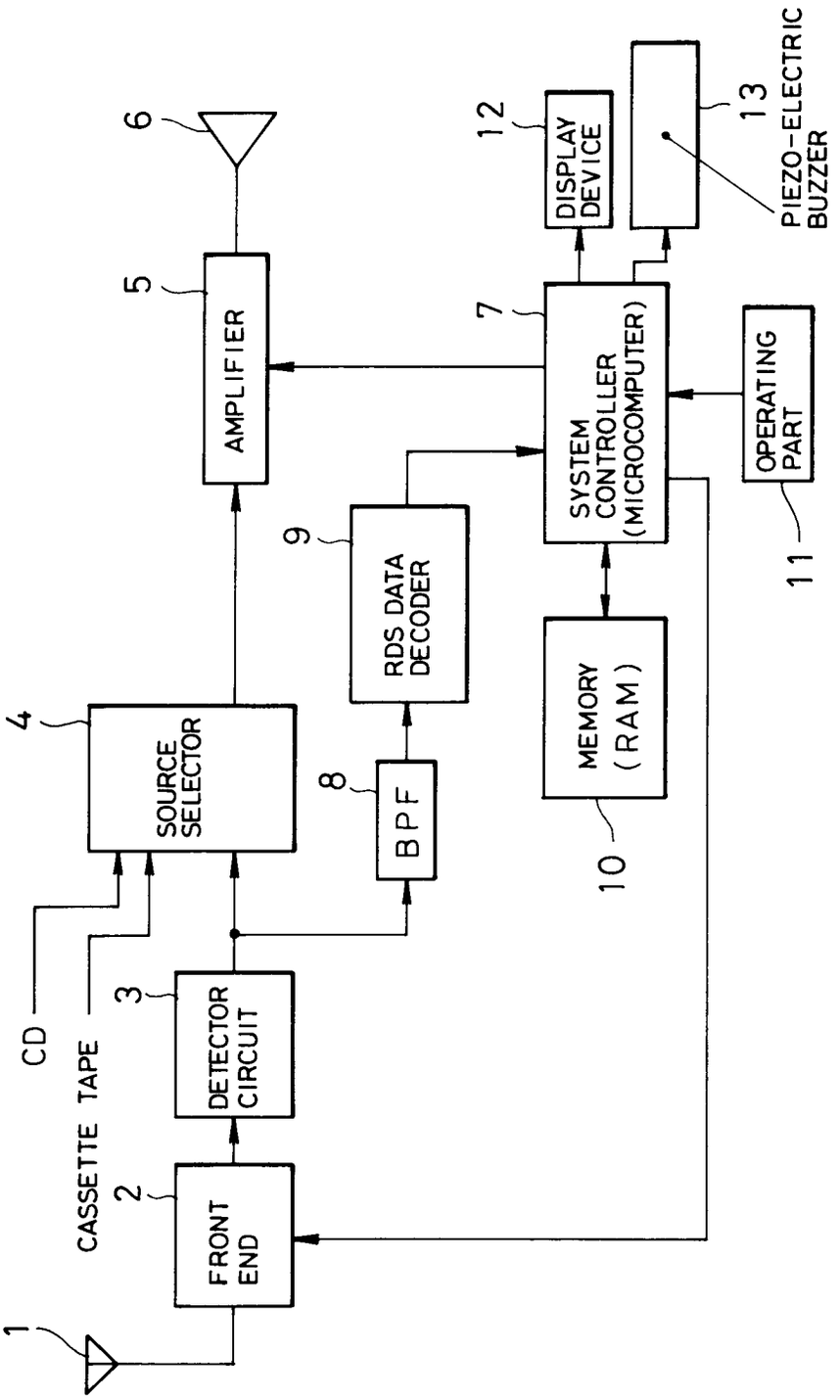

1
2
FRONT END
3
DETECTOR CIRCUIT
CASSETTE TAPE
CD
4
SOURCE SELECTOR
5
AMPLIFIER
6
8
BPF
9
RDS DATA DECODER
10
MEMORY (RAM)
7
SYSTEM CONTROLLER (MICROCOMPUTER)
11
OPERATING PART
12
DISPLAY DEVICE
13
PIEZO-ELECTRIC BUZZER

FIG.3

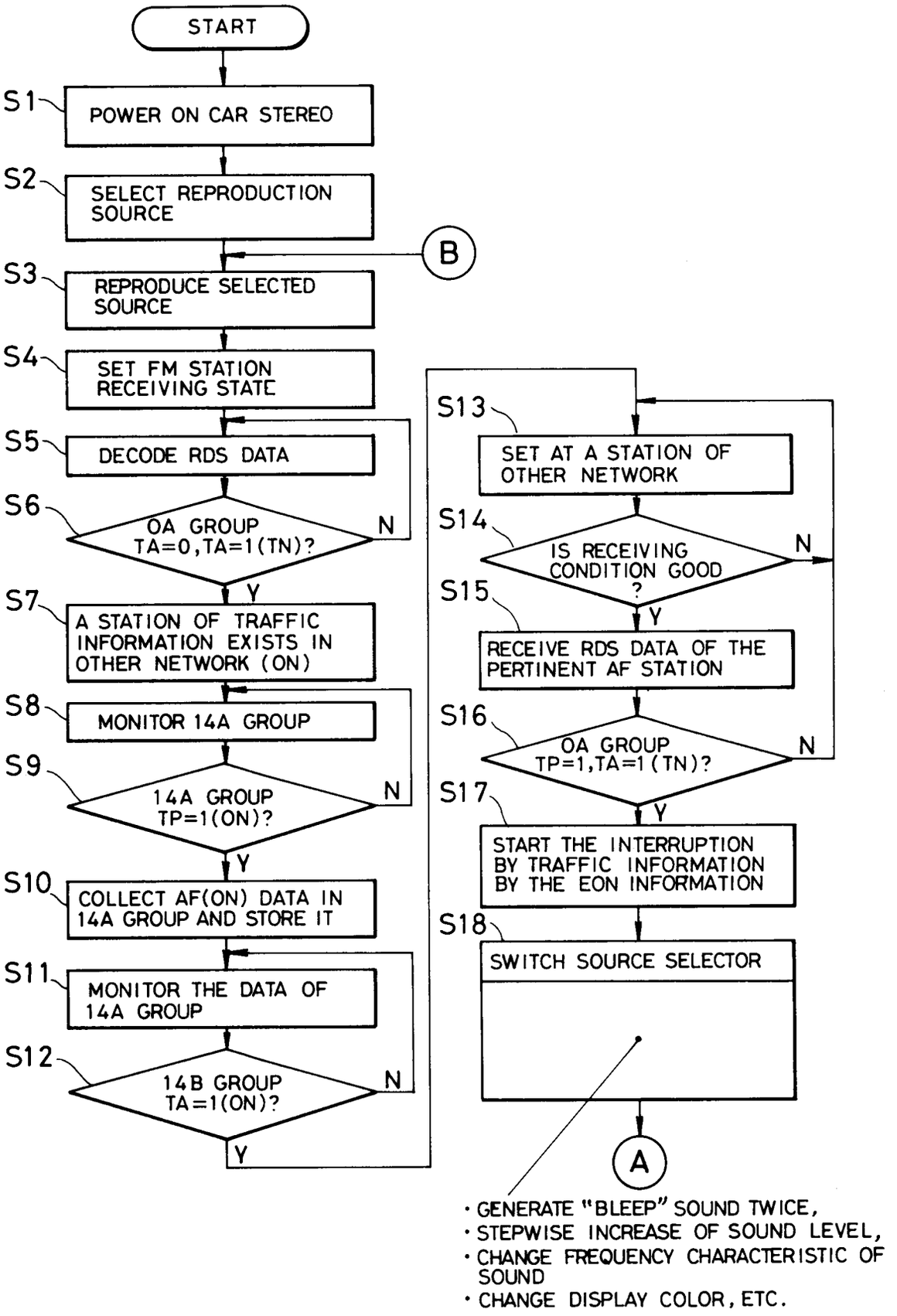

START
S1
POWER ON CAR STEREO
S2
SELECT REPRODUCTION SOURCE
B
S3
REPRODUCE SELECTED SOURCE
S4
SET FM STATION RECEIVING STATE
S5
DECODE RDS DATA
S6
OA GROUP TA=0,TA=1(TN)?
N
Y
S7
A STATION OF TRAFFIC INFORMATION EXISTS IN OTHER NETWORK (ON)
S8
MONITOR 14A GROUP
S9
14A GROUP TP=1(ON)?
N
Y
S10
COLLECT AF(ON) DATA IN 14A GROUP AND STORE IT
S11
MONITOR THE DATA OF 14A GROUP
S12
14B GROUP TA=1(ON)?
N
Y
S13
SET AT A STATION OF OTHER NETWORK
S14
IS RECEIVING CONDITION GOOD ?
N
Y
S15
RECEIVE RDS DATA OF THE PERTINENT AF STATION
S16
OA GROUP TP=1,TA=1(TN)?
N
Y
S17
START THE INTERRUPTION BY TRAFFIC INFORMATION BY THE EON INFORMATION
S18
SWITCH SOURCE SELECTOR
A
• GENERATE "BLEEP" SOUND TWICE,
• STEPWISE INCREASE OF SOUND LEVEL,
• CHANGE FREQUENCY CHARACTERISTIC OF SOUND
• CHANGE DISPLAY COLOR, ETC.

FIG. 4

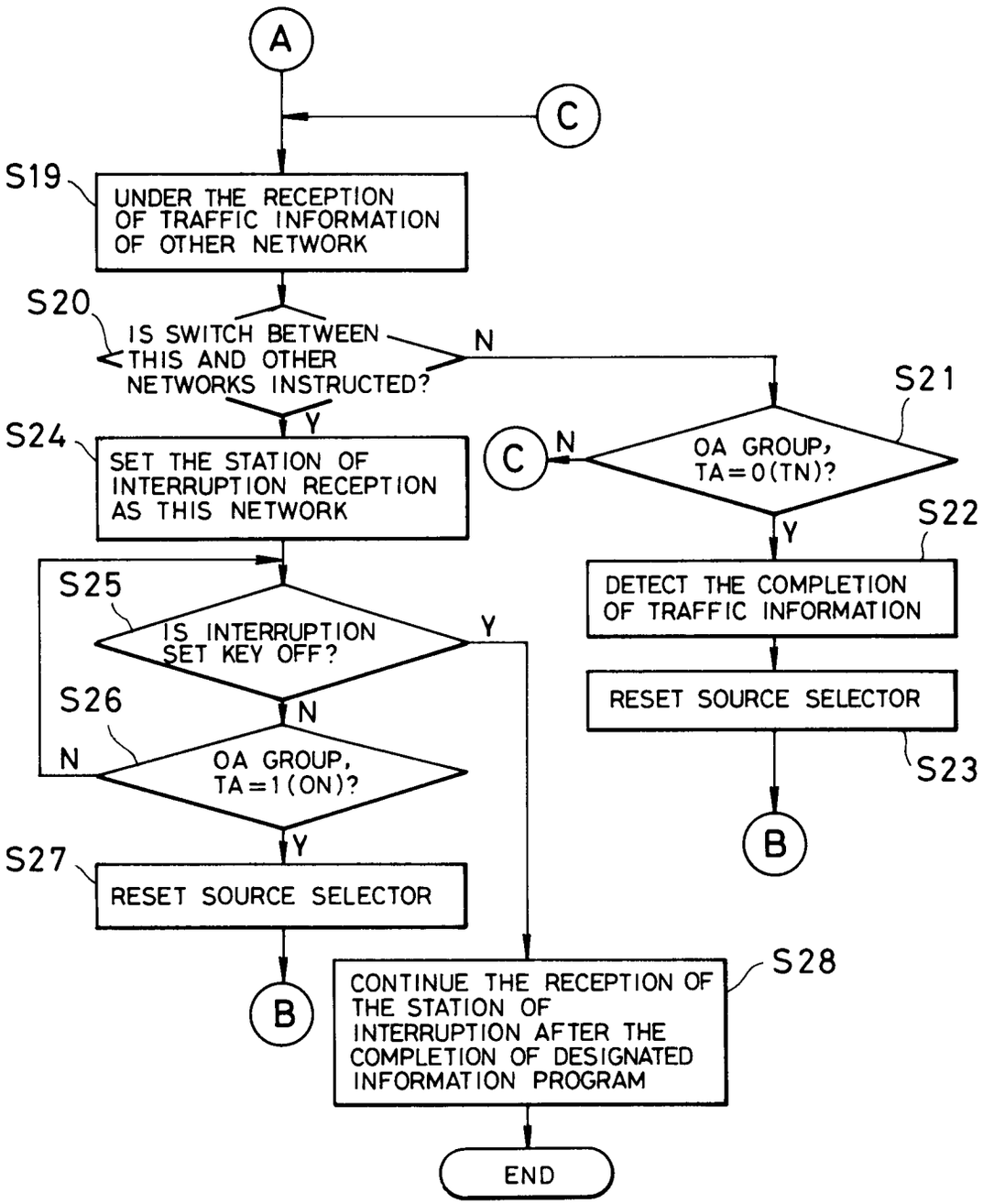
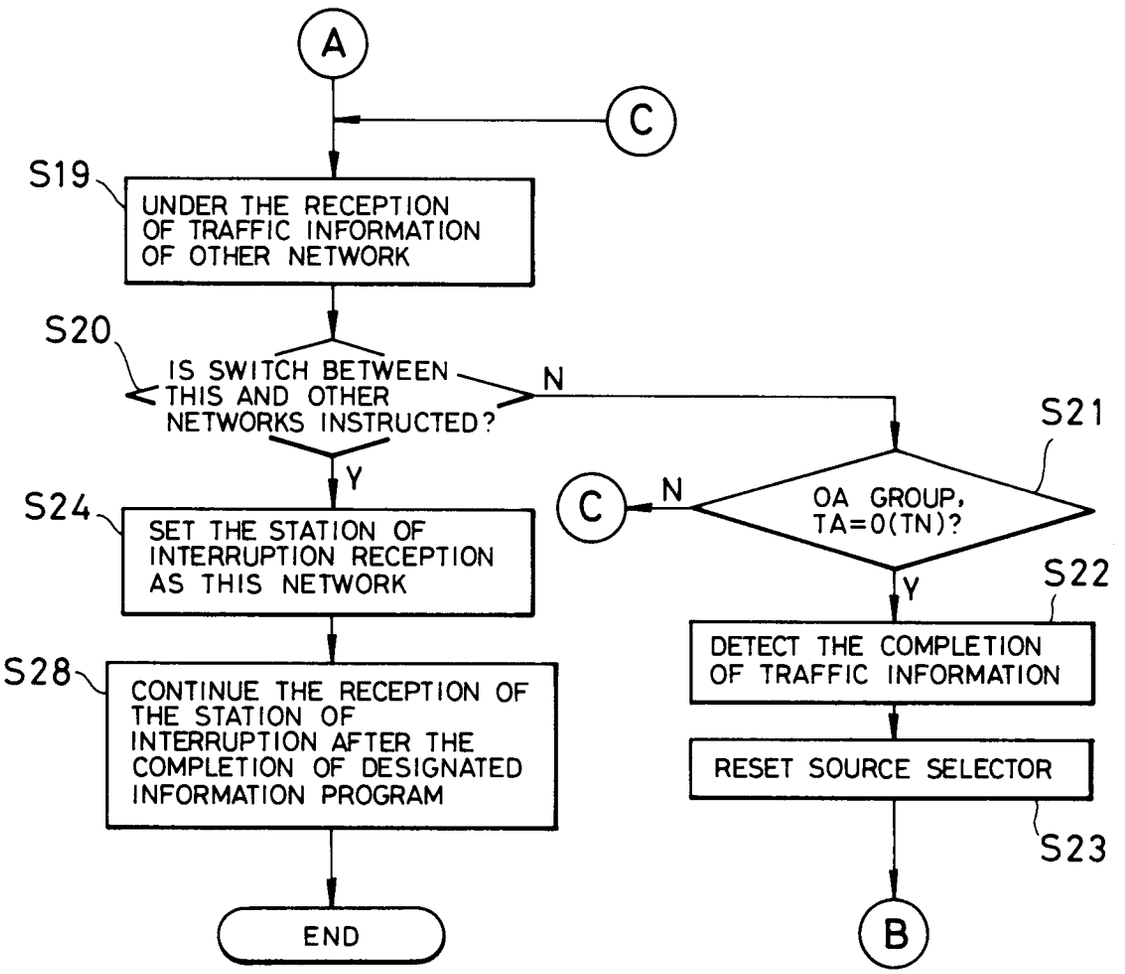

A
C
S19
UNDER THE RECEPTION OF TRAFFIC INFORMATION OF OTHER NETWORK
S20
IS SWITCH BETWEEN THIS AND OTHER NETWORKS INSTRUCTED?
N
Y
S21
OA GROUP, TA=0(TN)?
C
N
Y
S24
SET THE STATION OF INTERRUPTION RECEPTION AS THIS NETWORK
S22
DETECT THE COMPLETION OF TRAFFIC INFORMATION
RESET SOURCE SELECTOR
S23
B
S25
IS INTERRUPTION SET KEY OFF?
Y
N
S26
OA GROUP, TA=1(ON)?
N
Y
S27
RESET SOURCE SELECTOR
B
S28
CONTINUE THE RECEPTION OF THE STATION OF INTERRUPTION AFTER THE COMPLETION OF DESIGNATED INFORMATION PROGRAM
END

FIG.5


A
C
S19
UNDER THE RECEPTION OF TRAFFIC INFORMATION OF OTHER NETWORK
S20
IS SWITCH BETWEEN THIS AND OTHER NETWORKS INSTRUCTED?
N
Y
S21
C
N
OA GROUP, TA=0(TN)?
Y
S22
DETECT THE COMPLETION OF TRAFFIC INFORMATION
RESET SOURCE SELECTOR
S23
B
S24
SET THE STATION OF INTERRUPTION RECEPTION AS THIS NETWORK
S28
CONTINUE THE RECEPTION OF THE STATION OF INTERRUPTION AFTER THE COMPLETION OF DESIGNATED INFORMATION PROGRAM
END

European Patent Office

EUROPEAN SEARCH REPORT

Application Number
EP 95 10 8641

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
A	RUNDFUNKTECHNISCHE MITTEILUNGEN, vol.35, no.1, January 1991, NORDERSTEDT DE pages 17 - 22 S. PARNALL 'Erweiterte Informationen über andere Programmketten.' * page 21, column 1, line 14 - page 22, column 1, line 40; figures 3,5 *	1	H04H1/00
A	EP-A-0 446 985 (N.V. PHILIPS GLOEILAMPENFABRIEKEN) * page 2, line 1 - page 3, line 13; claims 1,4 *	1	
A	EP-A-0 582 939 (PIONEER ELECTRONIC CORP.) * column 1, line 1 - column 3, line 26; claim 1; figure 1 *	1	
A	EP-A-0 386 835 (N.V. PHILIPS GLOEILAMPENFABRIEKEN) * column 1, line 1 - column 3, line 13; claim 1 *	1	
			TECHNICAL FIELDS SEARCHED (Int.Cl.6) H04H

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	15 September 1995	De Haan, A.J.

CATEGORY OF CITED DOCUMENTS

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