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(54) Signal multiplexing circuit.

(57) Bidirectional communication of voice analog and data message signals over a two wire telephone line (16) that inter-connects several electronic key telephone station sets (18) with a digital access circuit (13) of a central data and voice communication facility (19) is achieved by a multiplexing circuit that functions either as a set interface (17) for a telephone or as a line card interface (11) for the access circuit (13). Data messages originating at a key pad (52) of any set or which are input to an interface bus of the multiplexing circuit are stored in a shift register (23) for subsequent modulation of a high band carrier signal, but only one interface (11, 17) may enter a transmission mode at one time. Transmission priority is therefore assigned by a controller (25) to the interface (11, 17) that first attempts transmission on an inactive line (16), i.e., in the absence of the carrier signal. With transmission initiated, all other interfaces (11, 17) enter a monitor mode to listen but not act on the transmitted message. Errors in transmissions caused by line noise, or collison transmissions between two or more interfaces (11, 17) are resolved via message transactions between the interfaces. Retransmission priority based on the unique addresses of the calling interfaces (11, 17) resolves collision issues with priority going to the lowest address. Controllable transmit and receive equalizers (36', 37') define analog signal paths in the line card interface (11) and are always in an operational mode. Corresponding equalizers (36; 37) in the set interface (17) are normally quiescent and become fully operational only after a correct address match between calling and called interfaces (11, 17) occurs and the called interface responds with a line signal acknowledging receipt of a valid message. A codec (20) may then be enabled and bidirectional communication between a set (18) and the facility (19) is established with voice and signalling being frequency division multiplexed on the line (16).

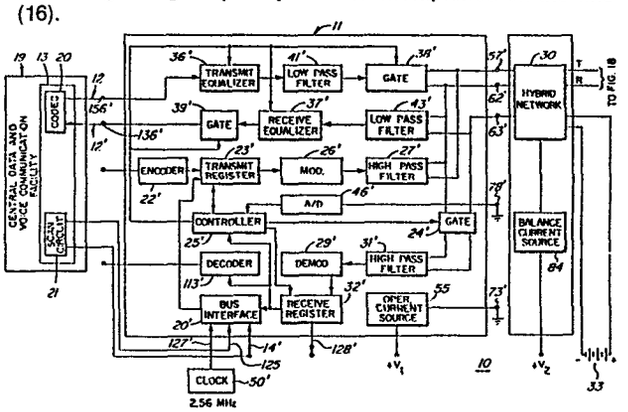

Fig. 1

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Application number

EUROPEAN SEARCH REPORT

EP 85304561.5

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.4)
			H 04 M 11/06
D,A	US - A - 4 178 480 (CARBREY) * Abstract; column 2, line 18 - column 3, line 39; column 3, line 55 - column 5, line 31; fig. 1 *	1	H 04 J 3/00
A	WO - A1 - 83/03 507 (NCR CORPORATION) * Abstract; page 1, lines 4-28; page 3, lines 1-29; page 7, line 5 - page 9, line 10; fig. 1-3D *	1,15, 16	
A	US - A - 4 044 307 (BORYSIEWICZ et al.)		

TECHNICAL FIELDS SEARCHED (Int. Cl.4)
H 04 M
H 04 J
H 04 L
H 04 Q

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
VIENNA	30-10-1986	HAJOS

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
O : non-written disclosure
P : intermediate document

T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
D : document cited in the application
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