TOUCH-TONE CALLING

RECEIVER

EQUIPMENT DESIGN REQUIREMENTS

COMMON SYSTEMS

1. GENERAL

Scope

1.01 This specification, together with the supplementary information listed herein, covers the equipment design requirements for the equipment and circuits to be used in the manufacture and installation of a receiver arranged to accept TOUCH-TONE calling tone signals.

1.02 This section is reissued to change the input amplifier to provide the 626B filter in place of the F-53463 filter, and to make changes in the signal timer and steering unit. The filter change in the input amplifier has been made to permit receiver operation with the new 350- to 440-cps dial tone recommended for offices having TOUCH-TONE calling. The signal timer and steering unit has been changed to improve signaling performance in the presence of impulse noise and echoes on customer lines, particularly remote exchange lines.

Description

1.03 The TOUCH-TONE calling receiver is designed to be bridged across the input terminals of a dial pulse subscriber sender, originating register, or equivalent common dial pulse equipment without interfering with normal operation on dc dial pulses. The receiver is designed to respond to two simultaneous voice-frequency tones, one from a high group and one from a low group of frequencies generated by the operation of a button on a TOUCH-TONE calling subscriber set or similar device. The use of two widely separated frequencies for each digit provides for various operating features and permits less severe design requirements for the subscriber set tone oscillator. The assignment of the signaling frequencies is as follows.

LOW GROUP		HIGH GROUP	
L1	697~	H1	1209~
L2	770~	H2	1336~
L3	852~	H3	1477~
L4	941~	H4	1633~ (optional)

1.04 The frequency combinations for indicating individual digits are shown below.

DIGIT	FREQUENCY
1	L1-H1
2	L1-H2
3	L1-H3
4	L2-H1
5	L2-H2
6	L2-H3
7	L3-H1
8	L3-H2
9	L3-H3
0	L4-H2

1.05 The circuit components of the receiver are mounted on modular-type cards in slides which plug into a cabinet-type frame work. This type of construction facilitates maintenance, since each slide may be tested and/or replaced as necessary. The defective slide may then be either repaired at a bench or sent to a centralized maintenance point for repair as desired by the operating company. In addition, all connections to the receiver are made through a single connector so that the entire receiver may be dismounted and replaced easily at locations where maintenance facilities are not available.

1.06 The receiver occupies 6 inches of a standard 23-inch relay rack and is 9-3/4 inches deep. The mounting details are adjustable from front to rear so as to ensure that the receiver will be wholly within the guardrails on any of the various types of bays in which it is likely to be installed. All wiring in the receiver is covered

to protect it against damage during transportation or from front or rear aisle traffic when installed.

1.07 The only power supply required is the regular —48 volt central office battery. All other operating voltages required are derived from the —48 volt supply within the receiver.

1.08 The TOUCH-TONE calling receiver in itself is not sufficient to adapt an existing office for TOUCH-TONE calling. In addition to the receiver, a converter designed to accept the output of the receiver is necessary to pass the calling pulses to the existing dial machine. This converter is of necessity different for each type of switching machine and is covered in separate specifications associated with the specific switching system.

2. SUPPLEMENTARY INFORMATION

AA128.002 — List of Equipment Design Requirements
800-600-000 — List of General Equipment Requirement Sections
801-000-000 — Equipment Design and General Equipment Requirements and Engineering Information — Common Systems
J27907 — 815-035-150 — Panel Systems — TOUCH-TONE Converter Frame
J27951 — 816-503-150 — Crossbar System No. 1 — Originating Sender Frame
J27962 — 817-110-150 — Crossbar System No. 5 — Originating Register Frame
J33024 — 822-202-151 — Step-by-Step System — Converter Frame

3. DRAWINGS

WECo J drawings should be ordered by referring to the prefix and base number and requesting the current dash (—) number.

J99266A-( ) — TOUCH-TONE Receiver Cabinet
J99266B-( ) — TOUCH-TONE Receiver Input Amplifier Unit
J99266C-( ) — TOUCH-TONE Receiver Group Limiter Unit
J99266D-( ) — TOUCH-TONE Receiver Channel Circuit Unit
J99266E-( ) — TOUCH-TONE Receiver Signal Timer and Steering Unit
J99266F-( ) — TOUCH-TONE Receiver Output Timer and Detector Bias Unit
SD-95287-01 — TOUCH-TONE Calling Receiving Circuit

4. EQUIPMENT

J99266A — AT&TCo Std — TOUCH-TONE Receiver Cabinet

Equipment — J99266A-( )

List 1 — Framework assembly, wiring and common equipment for one TOUCH-TONE receiver cabinet.

	WIRE	EQUIP	NOTES
Framework Assembly, Receiver Cabinet		1	
Band Elimination Filter and Framework Connectors, SD-95827-01, Fig. 2 and 11	1	1	

List 4 — Mounting details for 23-inch bay.
List 5 — KS-16476, List 1 plug per SD-95287-01, Fig. 12 to be furnished with the N receptacle of the receiver cabinet per list 1 when associated equipment does not provide a mating plug as part of the connecting wiring.
List 6 — Plug-in units necessary to complete list 1 for 7-channel operation consist of the following:

	WIRE	EQUIP	NOTES
Input Amplifier Unit, J99266B, L2		1	
Group Limiter Unit, J99266C, L7		1	
Channel Circuit Units:			
J99266D, L1		1	
J99266D, L2		1	
J99266D, L3		1	
J99266D, L4		1	
Signal Timer and Steering Unit, J99266E, L2		1	
Output Timer and Detector Bias Unit J99266F, L1		1	

List 7 — Plug-in units necessary to complete list 1 for 8-channel operation consist of the following:

	WIRE	EQUIP	NOTES
Input Amplifier Unit J99266B, L2		1	
Group Limiter Unit J99266C, L1		1	

	WIRE	EQUIP	NOTES
Channel Circuit Units:			
J99266D, L1		1	
J99266D, L2		1	
J99266D, L3		1	
J99266D, L5		1	
Signal Timer and Steering Unit, J99266E, L2		1	
Output Timer and Detector Bias, J99266F, L1		1	

J99266B — AT&TCo Std — TOUCH-TONE Receiver Input Amplifier Unit

Equipment — J99266B-( )

List 2 — Framework assembly, wiring, and equipment for one plug-in input amplifier unit.

	WIRE	EQUIP	NOTES
Framework Assembly, Die-Cast Cardholder	1		
Auxiliary Front for Cardholder	1		
Input Amplifier Circuit, SD-95287-01, Fig. 1	1	1	

J99266C — AT&TCo Std — TOUCH-TONE Receiver Group Limiter Unit

Equipment — J99266C-( )

List 1 — Framework assembly, wiring, and equipment for one plug-in group limiter unit.

	WIRE	EQUIP	NOTES
Framework Assembly, Die-Cast Cardholder		1	
Group Limiter Circuit, SD-95287-01, Fig. 3	1	1	

J99266D — AT&TCo Std — TOUCH-TONE Receiver Channel Circuit Unit

Equipment — J99266D-( )

List 1 — Framework assembly, wiring, and equipment for one plug-in dual channel unit for channels 1 and 2 of the low group.

	WIRE	EQUIP	NOTES
Framework Assembly, Die-Cast Cardholder		1	
Channel Circuit, SD-95287-01, Fig. 4	1	1	

List 2 — Framework assembly, wiring, and equipment for one plug-in dual channel unit for channels 3 and 4 of the low group.

	WIRE	EQUIP	NOTES
Framework Assembly, Die-Cast Cardholder		1	
Channel Circuit, SD-95287-01, Fig. 5	1	1	

List 3 — Framework assembly, wiring, and equipment for one plug-in dual channel unit for channels 1 and 2 of the high group.

	WIRE	EQUIP	NOTES
Framework Assembly, Die-Cast Cardholder		1	
Channel Circuit, SD-95287-01, Fig. 6	1	1	

List 4 — Framework assembly, wiring, and equipment for one plug-in single channel unit for channel 3 of the high group.

	WIRE	EQUIP	NOTES
Framework Assembly, Die-Cast Cardholder		1	
Auxiliary Front for Cardholder, Group 4		1	
Channel Circuit, SD-95287-01:			
Fig. 7	1	1	
Fig. 8	1		

List 5 — Framework assembly, wiring, and equipment for one plug-in dual channel unit for channels 3 and 4 of the high group.

	WIRE	EQUIP	NOTES
Framework Assembly, Die-Cast Cardholder		1	
Auxiliary Front for Cardholder, Group 4		1	
Channel Circuit, SD-95287-01, Fig. 7 and 8	1	1	

List 6 — Equipment required to convert List 4 to List 5.

	WIRE	EQUIP	NOTES
Channel Circuit, SD-95287-01, Fig. 8		1	

J99266E — AT&TCo Std — TOUCH-TONE Receiver Signal Timer and Steering Unit

Equipment — J99266E-( )

List 2 — Framework assembly, wiring, and equipment for one plug-in signal timer and steering unit.

	WIRE	EQUIP	NOTES
Framework Assembly, Die-Cast Cardholder		1	
Signal Timer and Steering Circuit, SD-95287-01, Fig. 13	1	1	

J99266F — AT&TCo Std — TOUCH-TONE Receiver Output Timer and Detector Bias Unit

Equipment — J99266F-( )

List 1 — Framework assembly, wiring, and equipment for one plug-in output timer and detector bias unit.

	WIRE	EQUIP	NOTES
Framework Assembly, Die-Cast Cardholder		1	
Output Timer and Detector Bias Unit, SD-95287-01, Fig. 10	1	1	

5. GENERAL NOTES

List of Mfr Disc. Equipment

EQUIP	RATING	DETAILS LAST SHOWN IN ISSUE	REPLACING EQUIPMENT
J99266A,L2	Mfr Disc.	1	J99266A,L6
J99266A,L3	Mfr Disc.	1	J99266A,L7
J99266B,L1	Mfr Disc.	1	J99266B,L2
J99266E,L1	Mfr Disc.	1	J99266E,L2

The above equipment has been replaced as indicated.

Bell Telephone Laboratories, Incorporated

Dept 2191