

P1 CARRIER TELEPHONE SYSTEM
ADJUSTMENTS AND MAINTENANCE
CENTRAL OFFICE AND REMOTE TERMINAL
ABBREVIATED ADJUSTMENT PROCEDURE

1.00 GENERAL

- 1.01** Chart I contains the abbreviated adjustment procedure for the transmitting and receiving portion of the central office terminal. The detailed step-by-step procedure is covered in the sections entitled Central Office Terminal Tests—Transmitting and Central Office Terminal Tests—Receiving.
- 1.02** Chart II contains the abbreviated adjustment procedure for the transmitting and receiving portions of the remote terminal. The detailed step-by-step procedure is covered in the sections entitled Remote Terminal Tests—Transmitting and Remote Terminal Tests—Receiving.
- 1.03** Either the transmitting or the receiving tests and adjustments may be performed without performing the other; however, the terminal must be prepared for either test as indicated under Preparation on the charts.
- 1.04** When performing the transmitting or the receiving tests, all of the tests listed under transmitting or receiving must be performed. For example, if the transmitting section of the central office terminal tests are to be performed, Tests A, B, C, and D must all be performed and in that order.
- 1.05** Preparations made for previous tests will remain in effect until the end of the section (ie, Transmitting or Receiving) unless otherwise specified.
- 1.06** After completion of the tests, the terminal should be prepared for connection to the line by re-establishing the connections removed under Preparation on the charts. For detailed procedure, see Section 363-101-507.
- 1.07** This section is being reissued to include abbreviated test information for the Model D (804D Network).
- 1.08** Due to extensive changes marginal arrows have been omitted.

CHART I
ABBREVIATED ADJUSTMENT PROCEDURE
CENTRAL OFFICE TERMINAL
TRANSMITTING AND RECEIVING

Test or Adjustment Central Office Terminal			Preparation (See Notes 1, 2, and 3)	Send				Adjust		Receive					
				Freq	DB Level	Board	Test Point	Board	Pot. Desig	Board	Test Point	Test Set REC Switch	DB Level		
Transmitting	A	Signaling Tone Oscillators	2500~	Terminate VF test points on board A in 600Ω.					G	OSC-1	A	2500~	DET HI-IMP	-4.0	
			1750~					G	OSC-2	A	1750~	DET HI-IMP	-4.0		
			1150~					G	OSC-3	A	1150~	DET HI-IMP	-4.0		
	B	Transmitted Carrier Power	CARR Level						B	CARR	A	CARR	DET 600Ω	+6.0	
			CARR Leak	Short MOD test point on board B.								A	CARR	DET 600Ω	-14 (max)
	C	Compressor	Voice Side Bands	Remove 600Ω from VF test points. Remove <i>K101(DL)</i> relay on board J. Short TST test points on board J.	1000~	0	A	VF	E	COMP	A	CARR	DET 600Ω	-3.5	
			DEMOD VF Side Bands	Remove short on MOD test points.	1000~	0	A	VF			A	CARR	DEMOD	M (Record) -17 to -20	
	D	Signaling Tone Amplifier	DEMOD SIG Side Bands	Replace <i>K101(DL)</i> relay on board J. Remove short on TST test points on board J. Short SIG test points on board J.					J	SIG	A	CARR	DEMOD	M -6	
	Receiving	E	Regulator	REC FLT	Terminate VF test points on board A in 600Ω. Send at the frequency of the receiving filter of the terminal under test. Carrier modulated 50 per cent with 1000~.	MOD CARR*	-27	A	CARR			A	REC	DET HI-IMP	-26.5 to -30.0
				Regulator Sensitivity		MOD CARR*	-27	A	CARR	D	REC	F	EXP IN	DET HI-IMP	+7.0
Regulator Range					MOD CARR*	-20	A	CARR			F	EXP IN	DET HI-IMP	+6.5 to +9.0	
					MOD CARR*	-32	A	CARR			F	EXP IN	DET HI-IMP	+6.0 to +7.5	
					MOD CARR*	-40	A	CARR			F	EXP IN	DET HI-IMP	+2.0 to -2.0	
F		Expander	VF	Remove 600Ω from VF test points on board A.	MOD CARR*	-27	A	CARR	F	EXP	A	VF	BAL 600Ω VF	-5.0	
G		Supervisory	Supv Output	Remove board H if present. Strap screw terminals 15 and 16 on board D.	MOD CARR*	-27	A	CARR			D	SUPV	DET HI-IMP	+9 to +13	
			Supv Relay Operate	On the test set, operate and hold the A key. Change attenuator setting to 38. On the test set, release the A key.	MOD CARR*	-38	A	CARR			J	TST	Ohm Meter (KS-14510)	Short	
			Supv Relay Release	Remove send cord from the test set. Place 600-ohm termination on CARR test point on board A.							J	TST	Ohm Meter (KS-14510)	Open	

Note 1: If terminal is connected to central office line circuit, insert a 258C plug in the DERIVED jack on equipment frame; or open tip and ring toward central office line circuit at screw terminals 11 and 26 on board A. Open strap between screw terminals 9 and 24 on board A. Remove input pad if present, and strap screw terminals 31 and 33 (0-db pad value) together on board A. Remove output pad, and strap screw terminals 34 and 36 (0-db pad value) together on board A. Measure voltage between screw terminals 14 and 15 on board A (22.5 volts) and between screw terminals 30 and 15 on board A (6 volts).

Note 2: If only the receive portion of terminal adjustment is to be performed, the terminal should be prepared as shown under Note 1.

Note 3: Preparations made for previous tests will remain in effect until the end of the section (ie, Transmitting or Receiving) unless otherwise specified.

* Send at the frequency of the receiving filter of the terminal under test. Carrier modulated 50 per cent with 1000 cycles. (Adjust carrier level to 0 db. Adjust 1000-cycle level to -26 db.)

CHART II
ABBREVIATED ADJUSTMENT PROCEDURE
REMOTE TERMINAL
TRANSMITTING AND RECEIVING

Test or Adjustment Remote Terminal			Preparation (See Notes 1, 2, and 3)	Send				Adjust		Receive				
				Freq	DB Level	Board	Test Point	Board	Pot. Desig	Board	Test Point	Test Set REC Switch	DB Level	
Transmitting	B	Transmitted Carrier Power	CARR Level	Terminate VF test points on board A in 600Ω.					B	CARR	A 386A	CARR 14-22	DET 600Ω	+6.0
			CARR Leak	Short MOD test point on board B.							A 386A	CARR 14-22	DET 600Ω	-14 (max)
	C	Compressor	Voice Side Bands	Remove 600Ω from VF test points on board A.	1000~	0	A	VF	E	COMP	A 386A	CARR 14-22	DET 600Ω	-3.5
Receiving	E	Regulator	REC FLT	Terminate VF test points on board A in 600Ω. Send at the frequency of the receiving filter of the terminal under test. Carrier modulated 50 per cent with 1000 cycles.	MOD CARR*	-27	A	CARR			A 386A	REC 17 or 16†-22	DET HI-IMP	-26.5 to -30.0
			Regulator Sensitivity		MOD CARR*	-27	A	CARR	D	REC	F	EXP IN	DET HI-IMP	+7.0
			Regulator Range		MOD CARR*	-20	A	CARR			F	EXP IN	DET HI-IMP	+6.5 to +9.0
					MOD CARR*	-32	A	CARR			F	EXP IN	DET HI-IMP	+6.0 to +7.5
					MOD CARR*	-40	A	CARR			F	EXP IN	DET HI-IMP	+2.0 to -2.0
	F	Expander	VF	Remove 600Ω from VF test points on board A.	MOD CARR*	-27	A	CARR	F	EXP	A 386A	VF 7-8	BAL 600Ω VF	-5.0

Note 1: If terminal is at in-service location, open strap between binding posts 13 and 14 on 386A apparatus case terminal block. Remove VF line from binding posts 7 and 8 on 386A apparatus case terminal block, remove input pad, and place a strap between screw terminals 31 and 33 (0-db pad value) on board A. Remove output pad, and place a strap between screw terminals 34 and 36 (0-db pad value) on board A. Measure voltage between screw terminals 14 and 15 (2 and 4) on board A (22.5 volts), between 25 and 10 (12 and 1) on board A (22.5 volts), and between 30 and 15 (3 and 4) on board A (6 volts).

Note 2: If only the receive portion of terminal adjustment is to be performed, the terminal should be prepared as shown under Note 1.

Note 3: Preparations made for previous tests will remain in effect until the end of the section (ie, Transmitting or Receiving) unless otherwise specified.

* Send at the frequency of the receiving filter of the terminal under test. Carrier modulated 50 per cent with 1000 cycles. (Adjust carrier level to 0 db. Adjust 1000-cycle level to -26 db.)

† On some earlier models of 386A apparatus cases the REC test point is binding post 16; on later models it is 17. To find out which binding post is the REC test point, measure the resistance between binding post 2 and either 16 or 17. If the resistance measured is about 650 ohms, that binding post is the REC test point. If the resistance measured is 19,000 ohms, that binding post is the RING test point. Mark the 386A apparatus case terminal block binding posts 16 and 17 with proper designation.

CHART II (Cont)

Test or Adjustment Remote Terminal		Preparation (See Notes 1, 2, and 3)		Send				Adjust		Receive					
				Freq	DB Level	Board	Test Point	Board	Pot. Desig	Board	Test Point	Test Set REC Switch	DB Level		
Receiving Signaling	Model C (804B Network)	2500 ~	<i>Caution: High voltage.</i> Terminate binding posts 7 and 8 on 386A apparatus case terminal block or VF test points on board A in 3900Ω. Send at the frequency of the receiving filter of the terminal under test. Carrier modulated 25 per cent with proper signal tone.	MOD CARR‡ 2500~	-27	386A A	14-22 CARR	None		386A	7-22	KS-14510 300 volts dc + Lead 7	+100 volts (min)		
		1750 ~	Strap binding posts 1 and 16 or 17† on 386A, or screw terminals 10 and 29 on board A.	MOD CARR‡ 1750~	-27	386A A	14-22 CARR			386A	8-22			KS-14510 300 volts dc + Lead 8	+100 volts (min)
		1150 ~		MOD CARR‡ 1150~	-27	386A A	14-22 CARR			386A	7-22			KS-14510 300 volts dc - Lead 7	-100 volts (min)
	Model D (804D Network)	2500 ~	<i>Caution: High voltage.</i> Terminate binding posts 7 and 8 on 386A apparatus case terminal block or VF test points on board A in 3900Ω. Send at the frequency of the receiving filter of the terminal under test. Carrier modulated 25 per cent with proper signal tone.	MOD CARR‡ 2500~	-27	386A A	14-22 CARR	None					Observe R relay operation. Listen for 3-kc squeal.		
			If position G in 803 connector is equipped with 803A or 803AA network, remove N relay from network in J position. Place 1011-type hand test set on MON. Connect test set between binding posts 1 and 16 or 17,† or screw terminals 10 and 29 on board A. Switch test set to TALK, and dial zeros as fast as possible. (Do not force dial.) Read KS-14510 meter as dial returns to normal.	None	(Remove send cord from test set.)		386A							7-22	KS-14510 300 volts ac - Lead 7
		1750 ~	1011-type hand test set on MON. Send carrier modulated 25 per cent with 1750~.‡ Switch test set to TALK, and dial zeros as fast as possible. (Do not force dial.) Read KS-14510 meter as dial returns to normal.	MOD CARR‡ 1750~	-27	386A A	14-22 CARR	None		386A	8-22	KS-14510 300 volts ac - Lead 8	120 volts (min)		
1011-type hand test set on MON. Replace N relay in J position network. Switch test set to TALK, and dial zeros as fast as possible. (Do not force dial.) Read KS-14510 meter as dial returns to normal.			MOD CARR‡ 1750~	-27	386A A	14-22 CARR	386A			8-22	KS-14510 300 volts dc - Lead 8	-95 volts (min)			
1150 ~		1011-type hand test set on MON. Send carrier modulated 25 per cent with 1150~.‡ Switch test set to TALK, and dial zeros as fast as possible. (Do not force dial.) Read KS-14510 meter as dial returns to normal.	MOD CARR‡ 1150~	-27	386A A	14-22 CARR	None		386A	7-22	KS-14510 300 volts dc - Lead 7	-75 volts <i>Note: Ignore needle kick at instant dial returns to normal.</i>			
	1011-type hand test set on MON.		(Remove send cord from test set.)												
	Switch test set to TALK, and dial zeros as fast as possible. (Do not force dial.) Read KS-14510 meter as dial returns to normal.	None			386A	7-22			KS-14510 300 volts dc + Lead 7	+95 volts (min)					

Note 1: If terminal is at in-service location, open strap between binding posts 13 and 14 on 386A apparatus case terminal block. Remove VF line from binding posts 7 and 8 on 386A apparatus case terminal block, remove input pad, and place a strap between screw terminals 31 and 33 (0-db pad value) on board A. Remove output pad, and place a strap between screw terminals 34 and 36 (0-db pad value) on board A. Measure voltage between screw terminals 14 and 15 (2 and 4) on board A (22.5 volts), between 25 and 10 (12 and 1) on board A (22.5 volts), and between 30 and 15 (3 and 4) on board A (6 volts).

Note 2: If only the receive portion of terminal adjustment is to be performed, the terminal should be prepared as shown under Note 1.

Note 3: Preparations made for previous tests will remain in effect until end of the section (ie, Transmitting or Receiving) unless otherwise specified.

† On some earlier models of 386A apparatus cases the REC test point is binding post 16; on later models it is 17. To find out which binding post is the REC test point, measure the resistance between binding post 2 and either 16 or 17. If the resistance measured is about 650 ohms, that binding post is the REC test point. If the resistance measured is 19,000 ohms, that binding post is the RING test point. Mark the 386A apparatus case terminal block binding posts 16 and 17 with proper designation.

‡ Send at the frequency of the receiving filter of the terminal under test. Carrier modulated 25 per cent with proper signal tone. (Adjust carrier level to 0 db. Adjust signal tone level to -32 db.)