

2.3.7. ANALOG BOARD SECTION

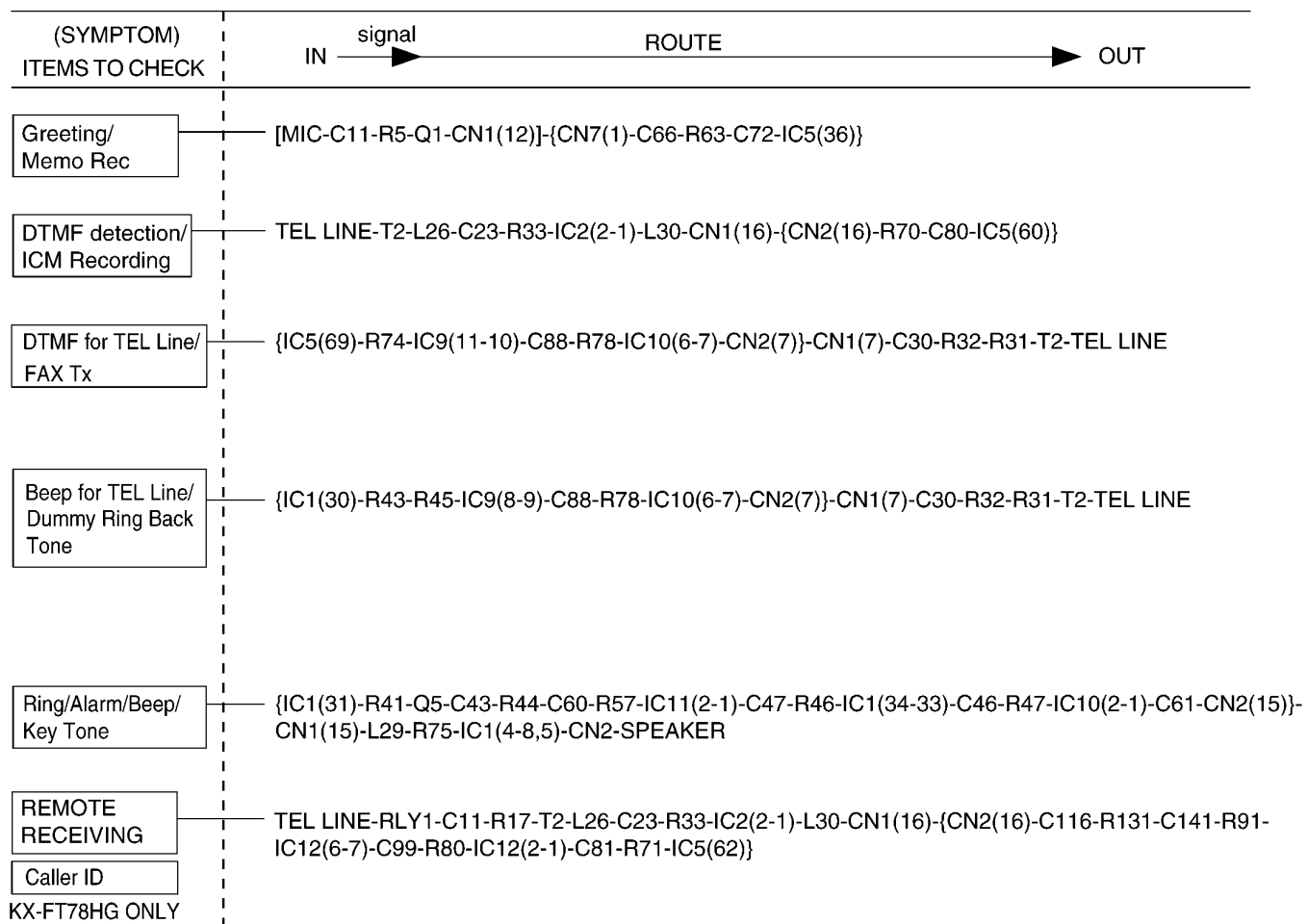
The analog parts check is actually different from the digital parts check. The signal route is determined by the purpose of the check. For example, the handset TX route begins from the handset microphone and is output in the telephone line. In this route, it is mainly an analog signal. Tracing the signal can be done easily using an oscilloscope. Each route is shown on the **CHECK SHEET** (P.70) here. If there is a problem with the unit (for example, you cannot communicate with the H/S, etc.), trace the signal in the area and determine the cause.

2.3.7.1. CHECK SHEET

(SYMPTOM) ITEMS TO CHECK		IN	signal	ROUTE	OUT
SP-PHONE Tx				[MIC-C11-R5-Q1-CN1(12)]-{CN7(1)-C66-R63-C72-IC5(36-69)-R74-IC9(11-10)-C87-R77-IC10(6-7)-CN2(7)}-CN1(7)-C30-R32-R31-T2-TEL LINE	
SP-PHONE Rx				TEL LINE-T2-L26-C23-R33-IC2(2-1)-L30-CN1(16)-{CN2(16)-R70-C80-IC5(60-47)-C58-R55-IC11(2-1)-C47-R46-IC1(34-33)-C46-R47-IC10(2-1)-C61-CN2(15)}-CN1(15)-R75-IC1(4-5, 8)-CN2-SPEAKER	
HANDSET Tx				HANDSET MIC-CN3-FLT1-[L5-C54-R49 L8-C53-R48]-IC2(5,6,-7)-C57-R53-L20-L31-CN1(17)-{CN2(17)-C82-R73-R79-C148-R133-IC10(6-7)-CN2(7)}-CN1(7)-C30-R32-R31-T2-TEL LINE	
HANDSET Rx				TEL LINE-T2-L26-C23-R33-IC2(2-1)-L30-CN1(16)-{CN2(16)-IC9(1-2)-C59-R56-IC11(2-1)-C47-R46-IC1(34-33)-C46-R47-IC10(2-1)-R58-C63-IC9(3-4)-C70-CN2(18)}-CN1(18)-R67-L19-C50-R64-Q2-C47-L6-FLT1-CN3-HANDSET SPEAKER	
DTMF Monitor	Speaker			{IC5(47)-C58-R55-IC11(2-1)-C47-R46-IC1(34-33)-C46-R47-IC10(2-1)-C61-CN2(15)}-CN1(15)-R75-IC1(4-5,8)-CN2-SPEAKER	
	Handset			{IC5(47)-C58-R55-IC11(2-1)-C47-R46-IC1(34-33)-C46-R47-IC10(2-1)-R58-C63-IC9(3-4)-C70-CN2(18)}-CN1(18)-R67-L19-C50-R64-Q2-C47-L6-CN3-HANDSET SPEAKER	
FAX Rx/ CNG detection				TEL LINE-T2-L26-C23-R33-IC2(2-1)-L30-CN1(16)-{CN2(16)-R70-C80-IC5(60)}	
VOX detection				TEL LINE-T2-L26-C23-R33-IC2(2-1)-L30-CN1(16)-{CN2(16)-R70-C80-IC5(60)}	
Greeting for TEL Line MSGs for TEL Line				{IC5(69)-R74-IC9(11-10)-C87-R77-IC10(6-7)-CN2(7)}-CN1(7)-C30-R32-R31-T2-TEL LINE	

Note:

- { }: Inside the digital board
- []: Inside the operation board

**Note:**

{ }: Inside the digital board

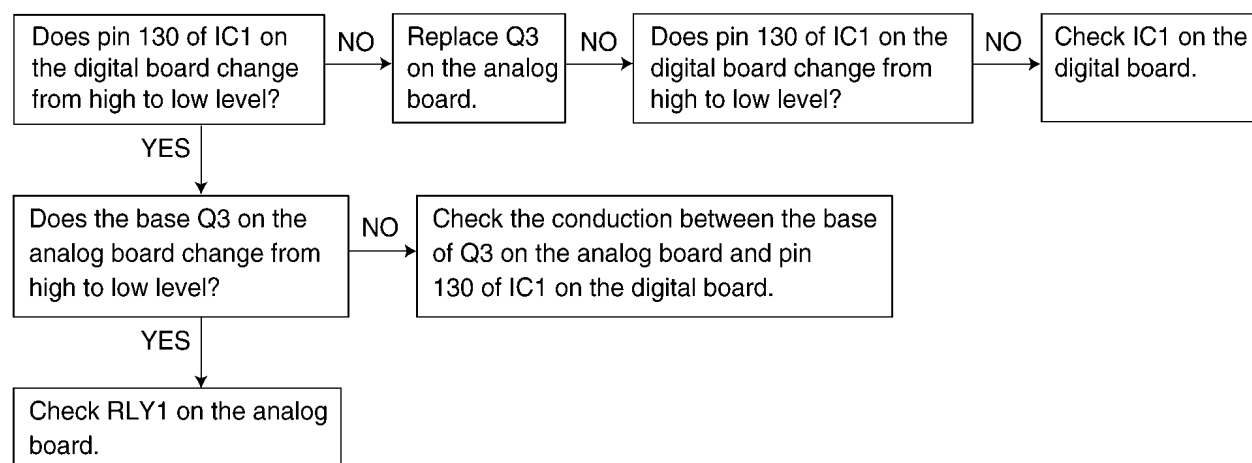
[]: Inside the operation board

2.3.7.2. DEFECTIVE ITS (INTEGRATED TELEPHONE SYSTEM) SECTION

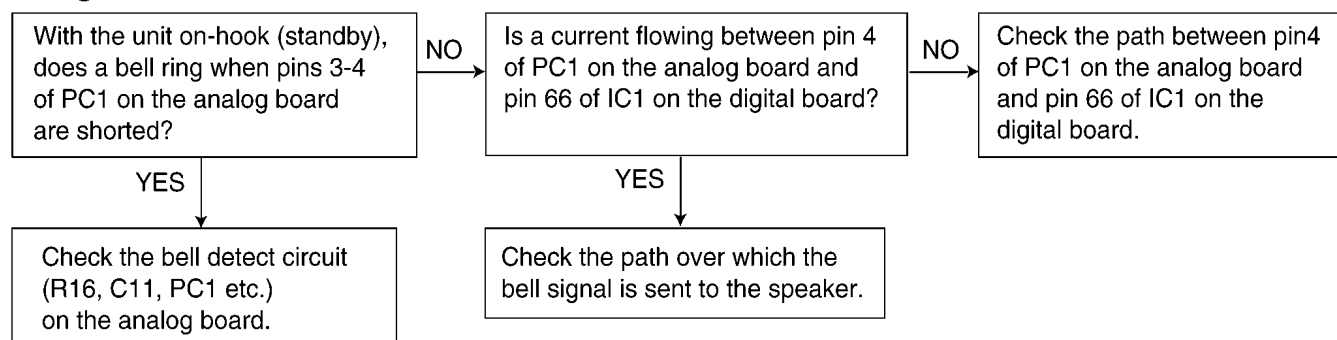
a. No handset and monitor transmission/reception

Following the ITS section or NCU section, search for the route between the microphone and the telephone line (sending) or between the telephone line and the speaker (receiving) where the signal disappears. Check the components at that point.

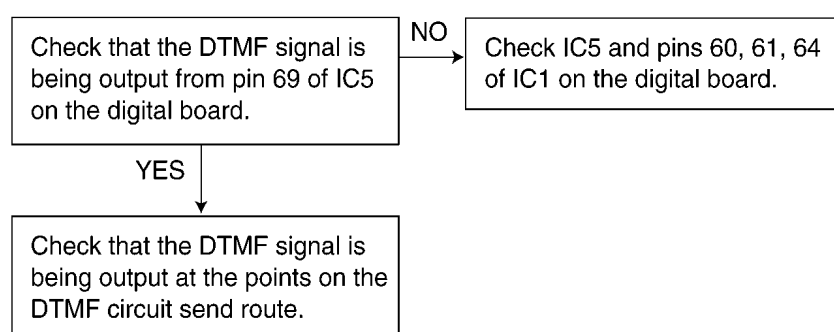
b. No pulse dialling



c. No ring tone



d. No tone dialling



2.3.8. DIGITAL SPEAKERPHONE

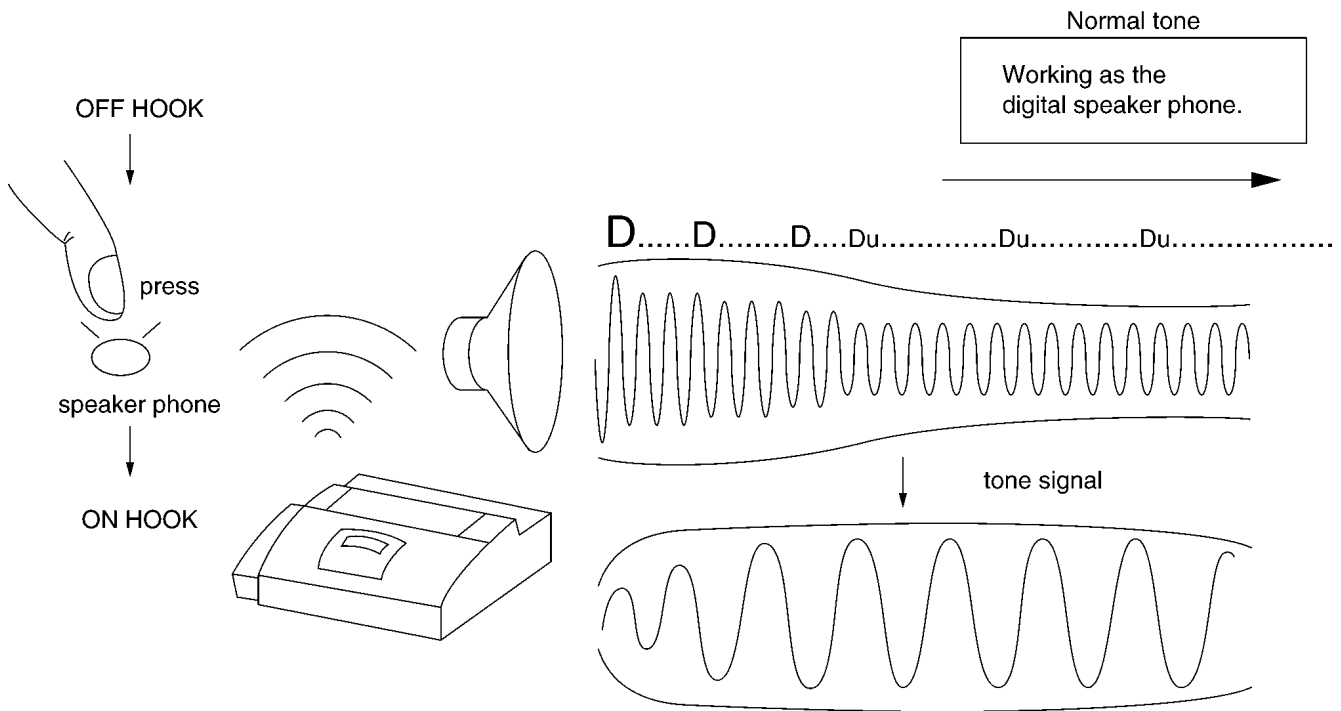
The digital speakerphone has different features from the analog speakerphone.

The analog speakerphone switches between Tx or Rx. Either Tx or Rx is able to pass through a telephone line or speaker, depending on the Tx and Rx signal (voice) level. The higher-level signal (either TX or RX) can pass through the route.

Therefore, you never hear the other party's voice while you are talking. However, the digital speakerphone allows you to hear the other party's voice while you are talking. So both Tx and Rx are active at the same time. There is also a difference in the troubleshooting procedures between the two types.

At the start of communication, during the initial 2~3 correspondences, the digital speakerphone performs half-duplex operation, alternating between transmission (Tx) and reception (Rx). Then duplex communication becomes available.

Learning occurs during the initial 2~3 correspondences in order to set the appropriate parameters for duplex communication.

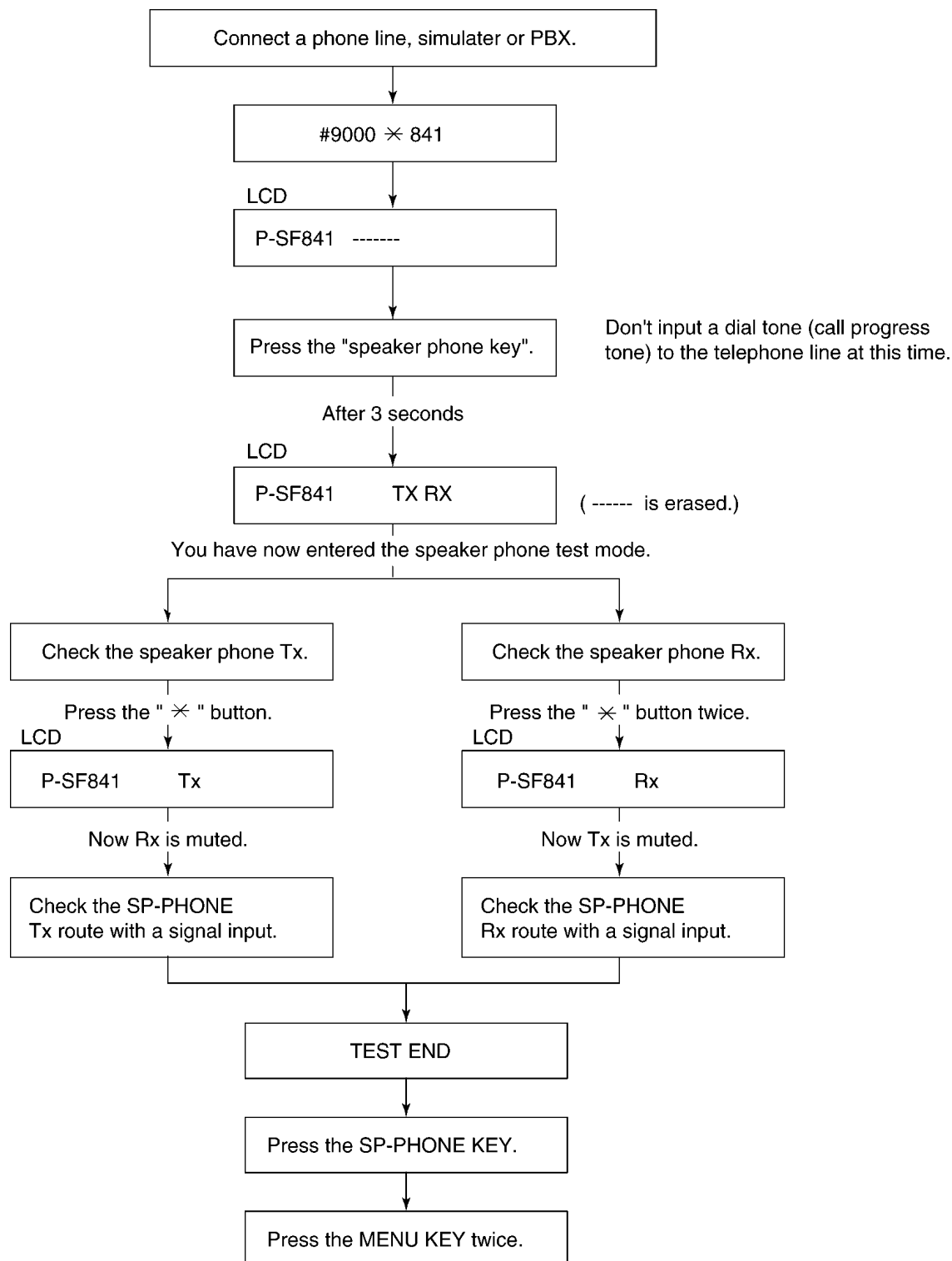


You cannot check the digital speaker phone by the signal route test mentioned in the Analog Board Section because the level is always changing as stated above.

Therefore, there is a service function for this troubleshooting. In this service mode, you can set the mute to either Tx or Rx. Then you can check the signal route of the speaker phone Tx or the speaker phone Rx without any disturbances.

HOW TO USE THE **841** SERVICE FUNCTION for THE DIGITAL SPEAKER PHONE

Please check by using the service function #9000 ✕ 841.



Refer to **ANALOG BOARD SECTION** (P.70).

2.3.9. POWER SUPPLY BOARD SECTION

1. Key components for troubleshooting

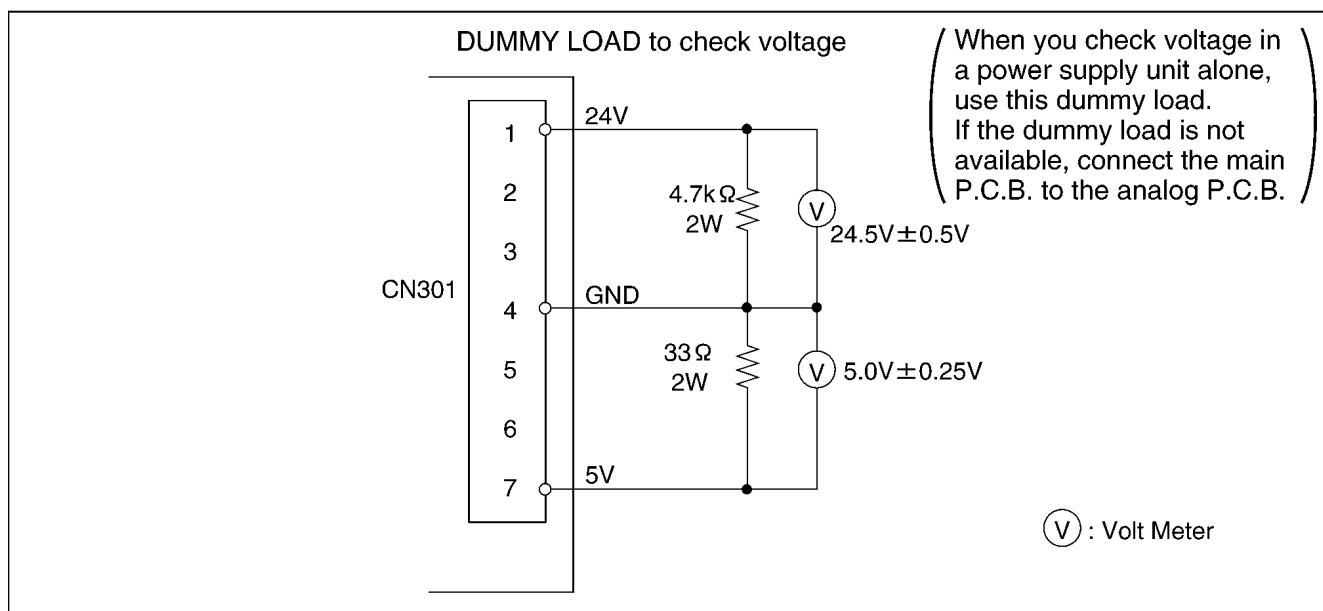
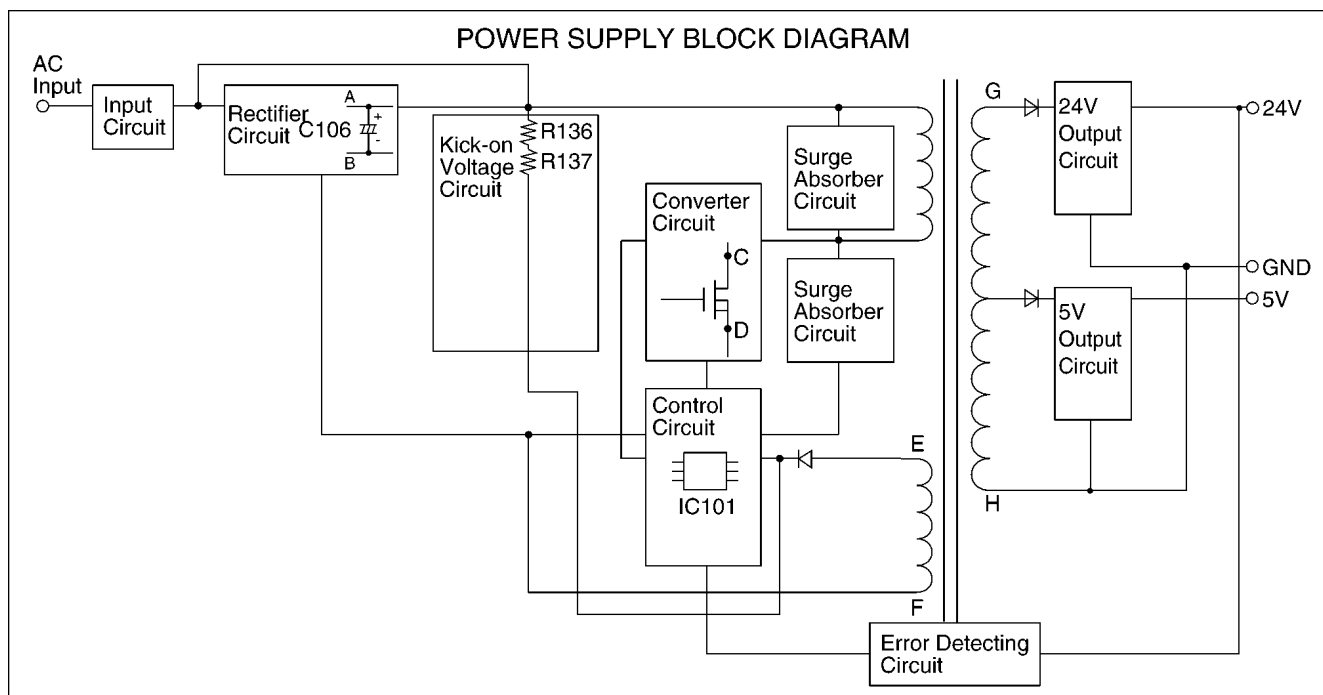
Check the following parts first: F101, D101-D104, C106, Q101, PC101 and IC101.

This comes from our experience with experimental tests. For example: power supply and lightning surge voltage test, withstanding voltage test, intentional short circuit test, etc.

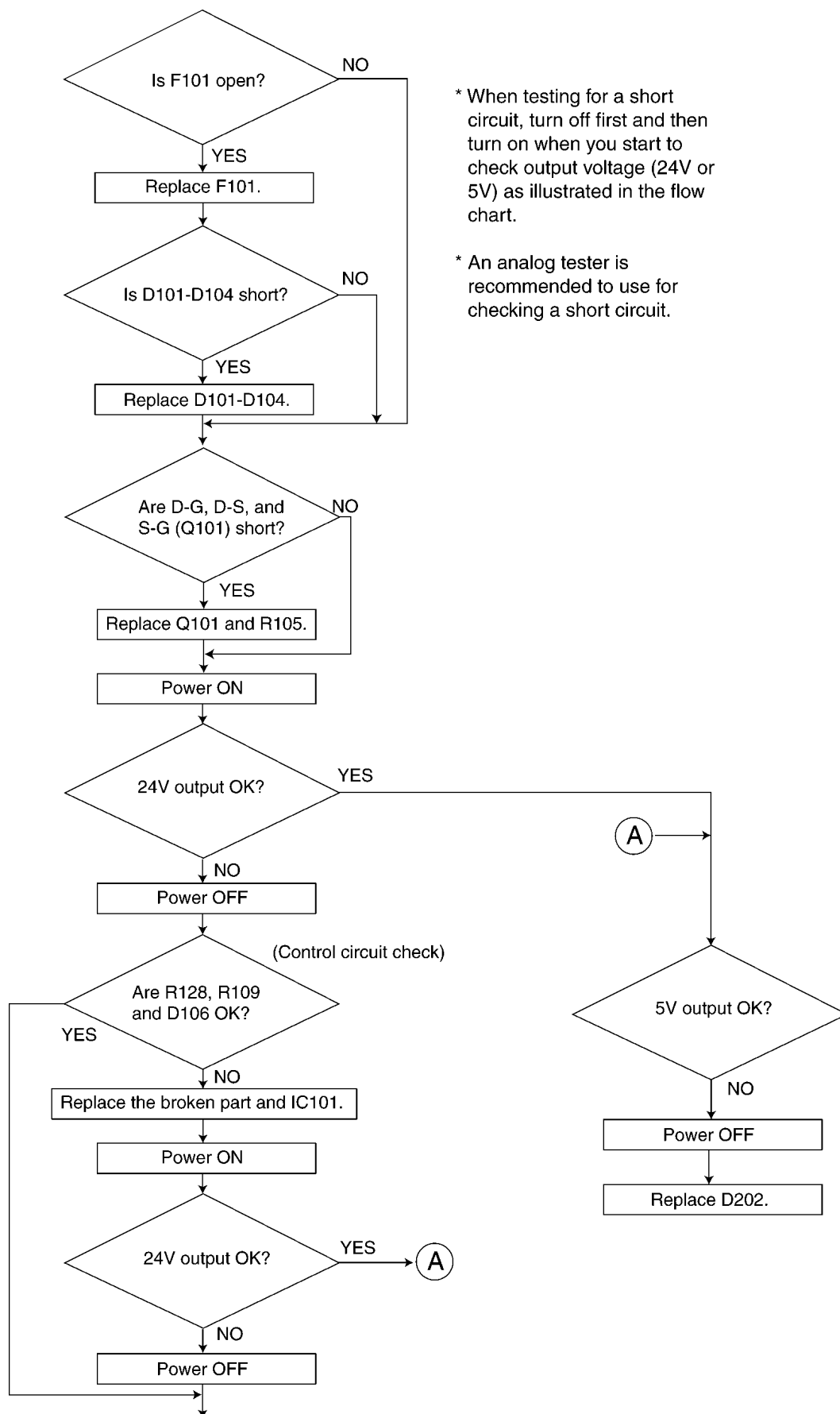
Caution:

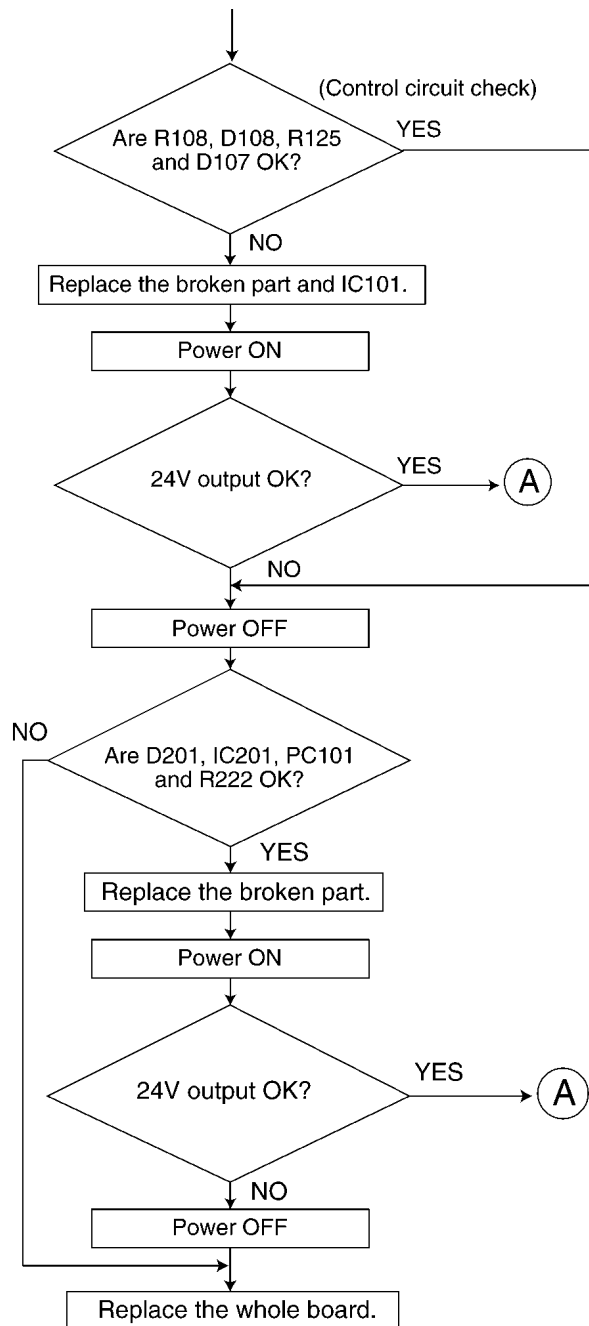
If you find a melted fuse in the unit, do not turn on the power until you locate and repair the faulty parts (except for the fuse); otherwise the fuse will melt again and you cannot pinpoint the faulty point.

In most cases, the symptom is that nothing is output. It is more likely that the fault is in the primary side rather than the secondary side. Check the primary side first.



2. Troubleshooting Flow Chart





3. Broken parts repair details

(D101, D102, D103, D104)

Check for a short-circuit in terminal 4. If D101, D102, D103 and D104 are short-circuits, F101 will melt (open).

In this case, replace all of the parts (D101, D102, D103, D104, F101).

(Q101)

The worst case of Q101 is a short-circuit between the Drain and Gate because damage expands to the peripheral circuit of Q101.

This is due to a very high voltage through the Gate circuit which is composed of R128, R109, D106 and IC101.

You should change all of the parts listed as follows.

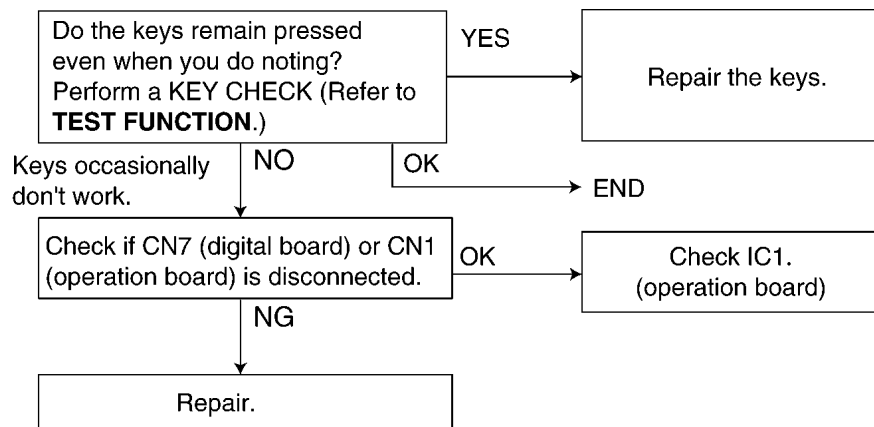
F101, Q101, R128, R109, D106, IC101

(D201)

If D201 is broken, the oscillation circuit in the power supply cannot operate. Check it with an electric tester.

2.3.10. OPERATION BOARD SECTION

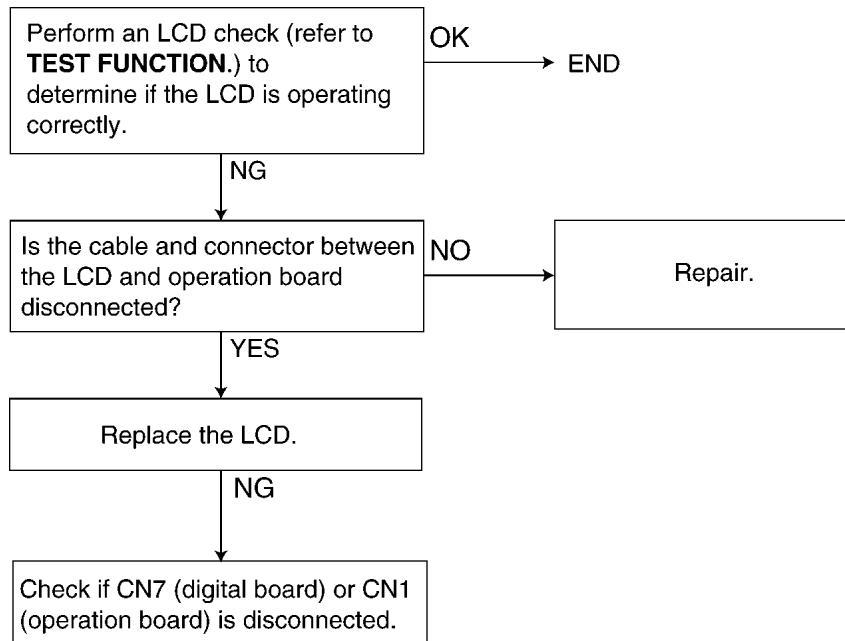
2.3.10.1. NO KEY OPERATION



CROSS REFERENCE:

TEST FUNCTIONS (P.93)

2.3.10.2. NO LCD INDICATION



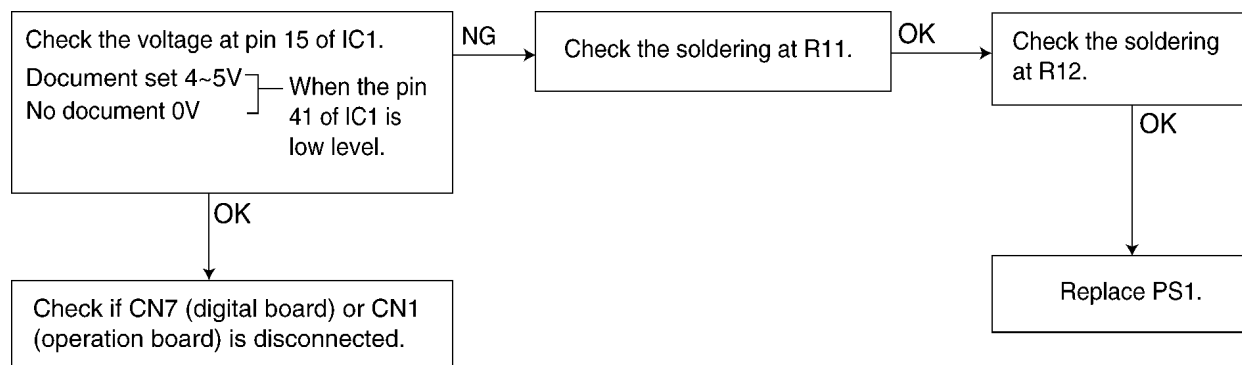
CROSS REFERENCE:

TEST FUNCTIONS (P.93)

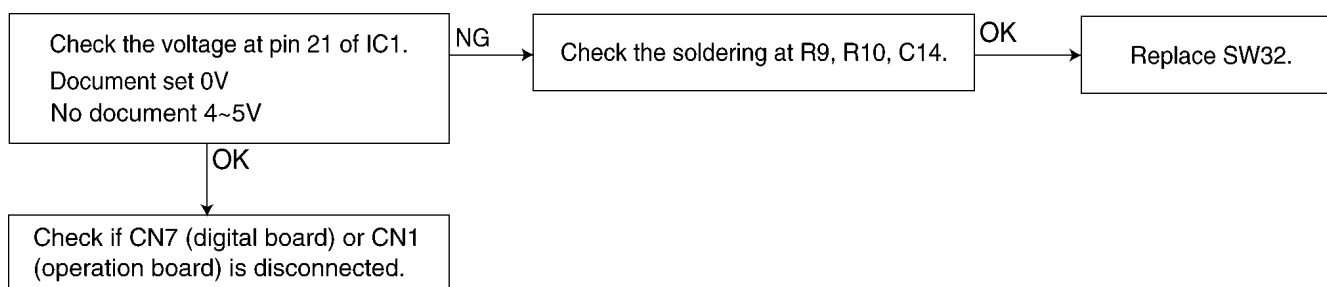
2.3.11. SENSOR SECTION

Refer to **6.5. SENSORS AND SWITCHES** for the circuit descriptions.

2.3.11.1. CHECK THE DOCUMENT SENSOR (PS1)....."CHECK DOCUMENT"

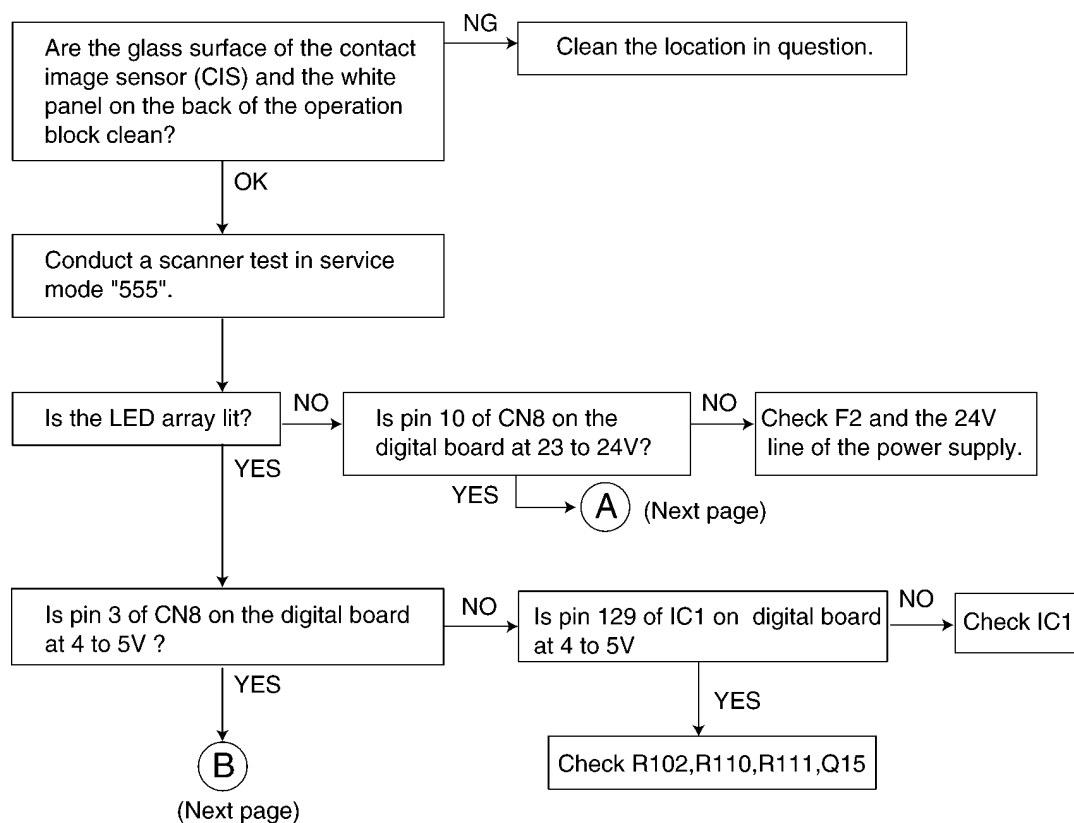


2.3.11.2. CHECK THE READ POSITION (SW32)....."REMOVE DOCUMENT"



2.3.12. READ SECTION

Refer to **SCANNING BLOCK** (P.124).



A

Is pin 16 of IC1 on the digital board at 5V?

NO

Check IC1 on the digital board.

YES

Check Q8 on the digital board.

B

Observe the waveform at test point AMONI on the digital board with an oscilloscope (while scanning the white panel).

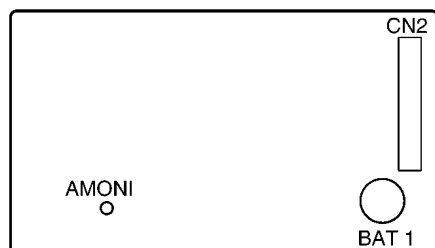
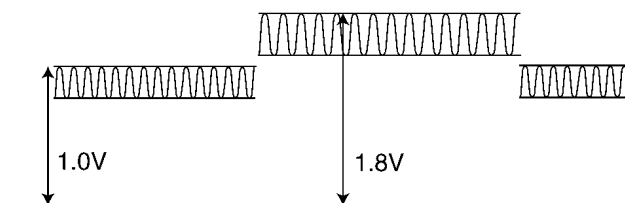
NO

Check the image sensor.

YES

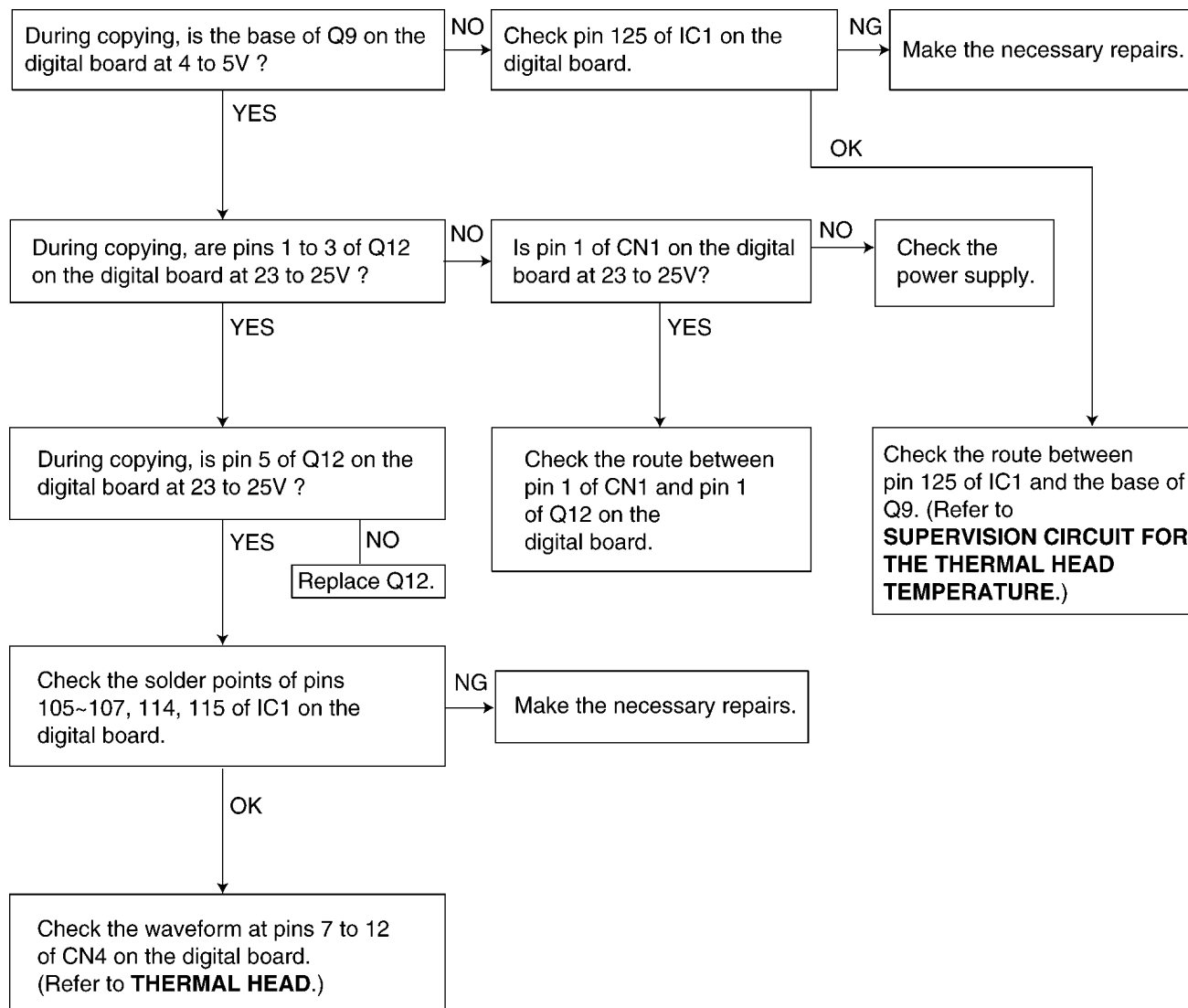
Apply a trigger at the rising edge of CH2 given the following settings :

CH1 0.2V/div connect to AMONI.
CH2 5V/div connect to FTG.
Time 1ms/div



2.3.13. THERMAL HEAD SECTION

Refer to **THERMAL HEAD** (P.122).



CROSS REFERENCE:

SUPERVISION CIRCUIT FOR THE THERMAL HEAD TEMPERATURE (P.119)

THERMAL HEAD (P.122)

2.4. PROGRAMMING AND LISTS

The programming functions are used to program the various features and functions of the machine, and to test the machine. Programming can be done in both the on-hook and off-hook conditions. This facilitates communication between the user and the service while programming the machine.

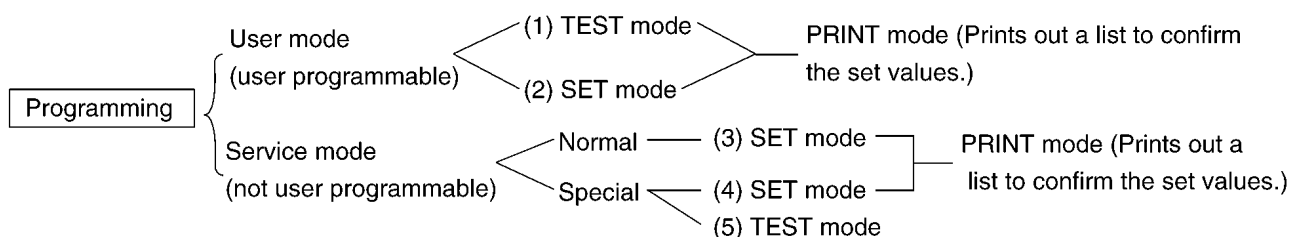
2.4.1. OPERATION

There are 2 basic categories of programming functions, the User Mode and the Service Mode. The Service Mode is further broken down into the normal and special programs. The normal programs are those listed in the Operating Instructions and are available to the user. The special programs are only those listed here and not displayed to the user. In both the User and Service Modes, there are Set Functions and Test Functions. The Set Functions are used to program various features and functions, and the Test Functions are used to test the various functions.

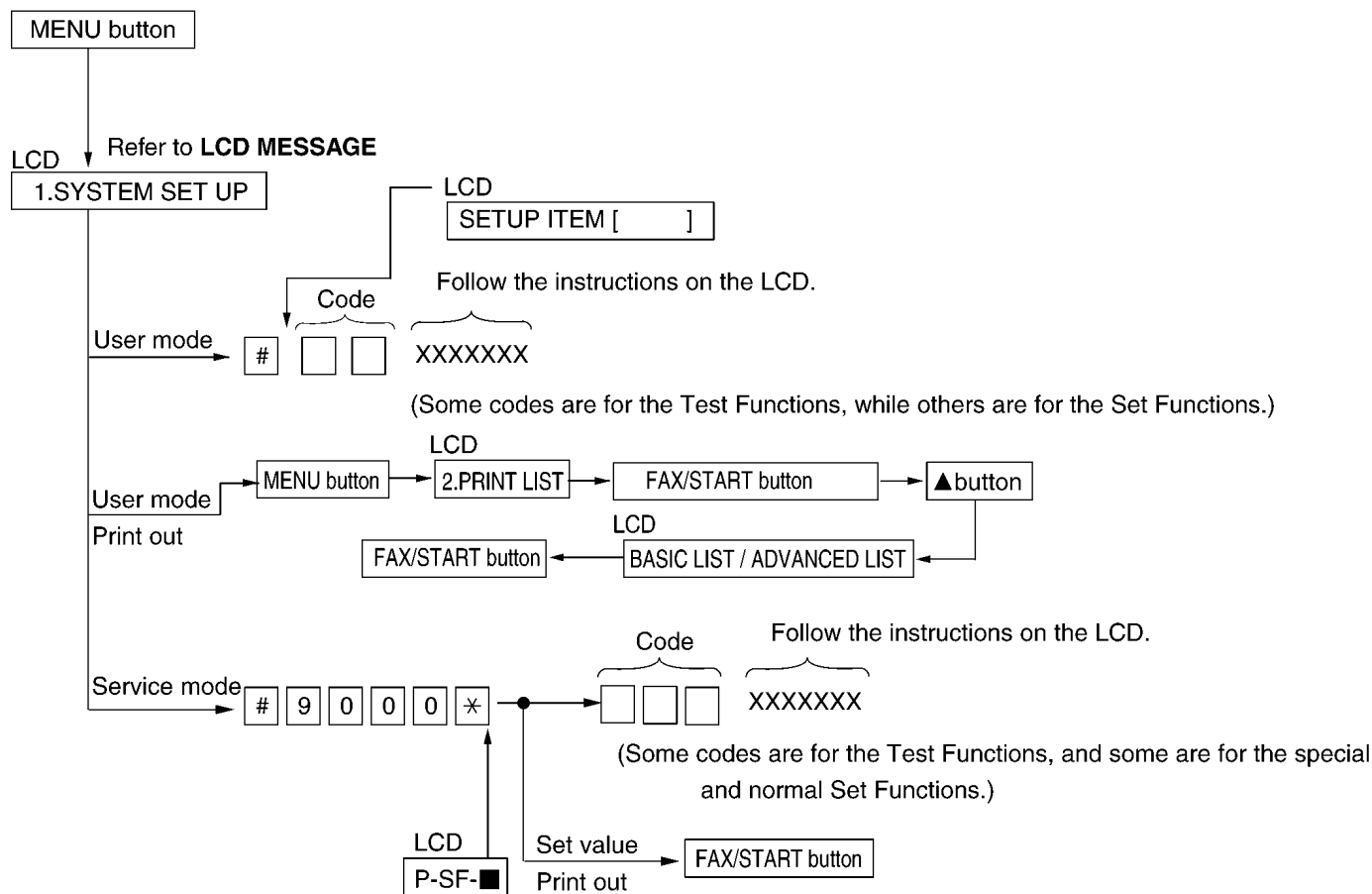
The Set Functions are accessed by entering their code, changing the appropriate value, then pressing the SET key.

The Test Functions are accessed by entering their code and pressing the key listed on the menu. While programming, to cancel any entry, press the STOP key.

2.4.2. OPERATION FLOW



Operating Procedure



2.4.3. USER MODE (The list below is an example of the SYSTEM SETUP LIST the unit prints out.)

2.4.3.1. KX-FT78CE (for Czech)

【 PREHLED ZAKLADNICH FUNKCI 】

CIS.	FUNKCE	NASTAVENI
#01	DATUM A CAS VASE LOGO VASE FAX. CISLO	01 LED. 2002 00:04
#04	TISK HLASENI O PRENOSU	PRI ZAVADE [PRI ZAVADE, ZAPNUTO, UYPNUTO]
#05	REZIM AUTOMATICKE ODPOVEDI	TAD/FAX [TAD/FAX, FAX, TEL/FAX]
#06	ZAZ/FAX, POCET ZVONENI	USPORA NAKL. [2...4, USPORA NAKL., UYZVAN. UYP.]
#07	FAX, POCET ZVONENI	2 [2...4]
#09	TEL/FAX, ZPOZD. ZVONENI	2 [2...4]
#10	DELKA PRICH. VZKAZU	1 MIN [3 MIN, 1 MIN]
#11	KOD DALKOVEHO OVLADANI	KOD = 111
#13	ZPUSOB VOLBY	TONOVA VOLBA [TONOVA VOLBA, PULZNI VOLBA]

ode ↗

↖ Set Value

【 PREHLED DALSICH FUNKCI 】

CIS.	FUNKCE	NASTAVENI
#22	AUTOMAT. TISK DENIKU	ZAPNUTO [ZAPNUTO, UYPNUTO]
#23	MEZINARODNI REZIM FAXU	UYPNUTO [ZAPNUTO, UYPNUTO]
#25	ODLOZENE UYSILANI	UYPNUTO [ZAPNUTO, UYPNUTO]
	CILOVA STANICE = ZACATEK PRENOSU = 00:00	
#30	TICHY PRIJEM FAXU	3 [3...9]
#39	KONTRAST DISPLEJE	NORMAL [NORMAL, TMAUY]
#41	KOD ATIVACE VZDALEN. FAXU	ZAPNUTO [ZAPNUTO, UYPNUTO]
	KOD = *9	
#42	OZNAMENI VZKAZU	UYPNUTO [ZAPNUTO, UYPNUTO]
#43	PAMET VZKAZU - UYSTRAHA	UYPNUTO [ZAPNUTO, UYPNUTO]
#46	AUT. PRIJEM FAXU	ZAPNUTO [ZAPNUTO, UYPNUTO]
#47	HLASOVY PRUVODCE	ZAPNUTO [ZAPNUTO, UYPNUTO]
POZNAMKA : Je-li tato funkce vypnuta a neni-li nahranu hlasni volajicimu pro prenos, pak veskere prenosy o vzkazech (#60) budou vypnuty.		
#48	ZMENA JAZYKA	CESTINA [CESTINA, SLOVENSTINA]
#49	AUTOMATICKE ROZPOJENI	ZAPNUTO [ZAPNUTO, UYPNUTO]
	KOD = *0	
#54	DOBA ZAZN. OGM ZAZNAMNIKU	16s [16s, 60s]
POZNAMKA : Provedete-li zmenu z 60s na 16s, pak Vase hlaseni bude smazano a pro nove bude vyhrazen cas max. 16s.		
#58	NASTAVENI ORIGINALU	NORMAL [NORMAL, SVETLY, TMAUY]
#60	PRENOS VZKAZU	UYPNUTO [ZAPNUTO, UYPNUTO]
#61	HLASENI PRO PRENOS	KONTROLA [KONTROLA, ZAZNAM, SMAZAT]
#67	MONITOR VZKAZU	ZAPNUTO [ZAPNUTO, UYPNUTO]
#70	FAXOVY PAGER	UYPNUTO [ZAPNUTO, UYPNUTO]
#74	OBLAST	CESKO [CESKO, SLOVENSKO]
#76	TON SPOJENI	ZAPNUTO [ZAPNUTO, UYPNUTO]
#80	RESET DALSICH FUNKCI (BEZ #48 #74)	↖ Set Value

Code ↗

2.4.3.2. KX-FT78CE (for Slovak)

【 PREHLAD ZAKLADNYCH FUNKCII 】

Por.	FUNKCIA	AKTUALNE NASTAVENIE	
#01	NASTAVENIE DATUMU A CASU	01 JAN. 2002 00:09	
#02	VASE LOGO		
#03	VASE FAXOVE CISLO		
#04	TLACENIE PROTOKOLU O ODOSLANI DOKUMENTU	PRI CHYBE	[PRI CHYBE, UZDY, UYPNUTE]
#05	REZIM AUTOMATICKÉHO PRIJMU	TAD/FAX	[TAD/FAX, LEN FAX, TEL/FAX]
#06	POCET ZVONENÍ V REZIME TAD/FAX	SETR. POPLATK	[2...4, SETR. POPLATK, ZVON, UYPNUTE]
#07	POCET ZVONENÍ V REZIME FAX	2	[2...4]
#09	ONESKORENÉ ZVONENIE V REZIME TEL/FAX	2	[2...4]
#10	DOBA ZAZNAMU	1 MIN	[3 MIN, 1 MIN]
#11	DIALKOVE IDENTIFIKACNE CISLO ODKAZOVACA	ID.KOD = 111	
#13	SPOSOB VOLBY	TONOVA VOLBA	[TONOVA VOLBA, PULZNA VOLBA]

ode

Set Value

【 ROZSIRENE FUNKCIE 】

Por.	FUNKCIA	AKTUALNE NASTAVENIE	
#22	AUTOMATICKÁ TLAC DENNIKA	ZAPNUTE	[ZAPNUTE, UYPNUTE]
#23	ZAMORSKY REZIM	UYPNUTE	[ZAPNUTE, UYPNUTE]
#25	ODOSLANIE NESKOR	UYPNUTE	[ZAPNUTE, UYPNUTE]
	MIESTO URČENIA =		
	CAS ZACIATKU = 00:00		
#30	TICHÝ PRIJEM FAXU, ROZLIS. ZVONENIE	3	[3...9]
#39	KONTRAST LCD DISPLEJA	NORMAL	[NORMALNY, TMAVSI]
#41	KOD DIALKOVEJ AKTIVÁCIE FAXU	ZAPNUTE	[ZAPNUTE, UYPNUTE]
	KOD = *9		
#42	UPOZORNENIE NA DOBU ZAZNAMU	UYPNUTE	[ZAPNUTE, UYPNUTE]
#43	INDIKÁCIA PREPLNENIA ODKAZMI	UYPNUTE	[ZAPNUTE, UYPNUTE]
#46	POHODLNÝ PRIJEM	ZAPNUTE	[ZAPNUTE, UYPNUTE]
#47	HLASOVÁ INSTRUKCIA FAXU	ZAPNUTE	[ZAPNUTE, UYPNUTE]
POZNAMKA : Ak je táto funkcia vypnutá bez zaznamenania úvodného odkazu pre prenos správy, potom bude nastavenie prenosu správy resetované na vypnuté(#60).			
#48	JAZYK	SLOVENCINA	[CESTINA, SLOVENCINA]
#49	AUTOMATICKÉ ODPAJANIE	ZAPNUTE	[ZAPNUTE, UYPNUTE]
	KOD = *0		
#54	DOBA ZAZNAMU BEZNEHO ÚVODNEHO ODKAZU	16SEK.	[16SEK., 60SEK.]
POZNAMKA : Ak zadáte zmenu zo 60 sekund na 16 s, tak sa zaznamenané uvítanie zmaze a nová uvítacia správa pre volajúceho bude obmedzená na 16 s.			
#58	POVODNE NASTAVENIE	NORMAL	[NORMALNY, BLEDY ORIG., TMAVSI]
#60	TRANSFER ODKAZU	UYPNUTE	[ZAPNUTE, UYPNUTE]
#61	UVÍTACIA SPRÁVA PRE VOLÁJUCEHO	KONTROLA	[KONTROLA, ZAZNAM, ZMAZAT]
	PRI TRANSFERE		
#67	PRIPOSLUCH PRICHADZAJUCICH HOVOROV	ZAPNUTE	[ZAPNUTE, UYPNUTE]
#70	VOLANIE PAGERA	UYPNUTE	[ZAPNUTE, UYPNUTE]
#74	KRAJINA	SLOVENSKO	[CESKO, SLOVENSKO]
#76	SPOJOVACÍ TON	ZAPNUTE	[ZAPNUTE, UYPNUTE]
#80	POCIATOČNE NASTAVENIE (S VÝNIMKOU #48 #74)		

ode

Set Value

2.4.3.3. KX-FT78HG

【 Alapszolgáltatások 】

kód	Szolgáltatás	Aktuális beállítás	
#01	Dátum és időpont beállítás Az Ön LOGója Az Ön telefonszáma	Jan. 01 2002 de.12:00	
#04	Adási napló nyomtatás	hiba	[hiba,be,ki]
#05	Automatikus hívásfogadás üzemmód	Rögz./fax	[Rögz./fax,Csak fax,Tel/fax]
#06	Rögz./fax csengetésszámláló	2	[1...4,Takarékos,Csengő ki]
#07	Fax csengetésszámláló	2	[1...4]
#09	Tel/fax mód csengetés késleltetés	2	[1...4]
#10	Üzenet hossza	Vox	[Vox,1 perc]
#11	Üzenetrögzítő távvezérlő kód	Kód = 111	
#13	Tárcsázási mód	DTMF/Tone	[DTMF/Tone,impulzus]
		Set Value	

【 Bonyolultabb szolgáltatások 】

kód	Szolgáltatás	Aktuális beállítás	
#22	Napló automatikus nyomtatása	be	[be,ki]
#23	Tengerentúli üzemmód	ki	[be,ki]
#25	Időzített adás	ki	[be,ki]
		célállomás =	
		kezdési idő = de.12:00	
#26	Automatikus hívó azonosítása	be	[be,ki]
		lista	
#30	Csendes fax mód csengetésszámláló	3	[3...9]
#39	Kijelző kontraszt	normál	[normál,sötét]
#41	Fax távvezérlő aktiváló kód	be	[be,ki]
		Kód = *9	
#42	Üzenet érkezett	ki	[be,ki]
#43	Felvételi idő figyelmeztetés	ki	[be,ki]
#46	Felhasználóbarát vétel	be	[be,ki]
#47	Hangbemondás	be	[be,ki]
MEGJEGYZÉS : Ha ezt a szolgáltatást kikapcsolja anélkül, hogy felvette volna az ÁTADÁS ÜDVÖZLÉST, az üzenet átadás beállítás visszaáll kikapcsolt (OFF) helyzetbe (#60).			
#48	Nyelv választás	Magyar	[Magyar,Angol]
#49	Automatikus lekapcsolás	be	[be,ki]
		Kód = *0	
#54	Közös üdvözlés felvételi ideje	16mp	[16mp,60mp]
MEGJEGYZÉS : Ha 60 másodpercről 16 másodpercre vált, akkor a saját bejelentkező szövege törlődik, az új bejelentkező szöveg hossza pedig 16 másodpercre korlátozódik.			
#58	Eredeti beállítás	normál	[normál,világos,sötét]
#60	Üzenet átadása	ki	[be,ki]
#61	Átadás bejelentkező szöveg	Ellenőrzés	[Ellenőrzés,Felvétel,Törlés]
#67	Bejövő üzenetek figyelése	be	[be,ki]
#70	Személyhívó hívás	ki	[be,ki]
#76	Kapcsolási hang	be	[be,ki]
#80	Alaphelyzetbe állítás (Kivétel #48)	Set Value	

Note:

The above values are the default values.

2.4.4. SERVICE FUNCTION TABLE

Code	Function	Set Value	Effective Range	Default	Remarks
501	Setting the pause time	001~600 X 100 msec	001~600	050	Selects the pause time in 100 msec steps.
502	Setting the flash recall time	01~99 X 10 msec	01~99	10	Selects the line break time during flashing in 10 msec steps.
503	Setting the pulse dial speed	1:10pps 2:20pps	1, 2	1	Sets the pulse dial speed.
510	VOX time	1:6 sec 2:4 sec	1, 2	1	Setting of the end of call confirmation time by VOX.
520	Setting the CED frequency	1:2100Hz 2:1100Hz	1, 2	1	When international communications cannot be performed smoothly select 1100Hz. However some exchange system should not be accepted (1100Hz on CED). (See "5. Unit can copy, but cannot transmit/receive long distance or international communications" in DEFECTIVE FACSIMILE SECTION (P.41).)
521	Setting the international line mode	1:ON 2:OFF	1, 2	1	Selects the international line mode during FAX communication. (See "5. Unit can copy, but cannot transmit/receive long distance or international communications" in DEFECTIVE FACSIMILE SECTION (P.41).)
522	Setting the return to default mode	1:ON 2:OFF	1, 2	1	Set the resolution and contrast conditions for FAX or copy to the default settings.
523	Receive equalizer select	1:0km 2:1.8km 3:3.6km 4:7.2km	1~4	1	When the telephone station is far from the unit or reception cannot be performed correctly, adjust accordingly.
524	Transmissionequalizer select	1:0km 2:1.8km 3:3.6km 4:7.2km	1~4	1	When the telephone station is far from the unit or reception cannot be performed correctly, adjust accordingly.
533	Setting the number of time that message transfer is redialed	00~99	00~99	05 times	Selects the number of times that message transfer is redialed (not including the first dialing).
534	Setting the message transfer/paper call redial interval	001~999 sec	001~999	065 sec	Sets the interval of message transfer/pager call redial.
544	Selecting the document feed position	01~99 step	00~99	50	When the ADF function is incorrect, adjust the feed position. (8 step = 1mm)
550	Memory clear				Press "START/COPY/SET".
551	ROM version and sum check				Press "START/COPY/SET".
552	DTMF signal tone test	1:ON 2:OFF	1, 2	2	Press "START/COPY/SET".
553	Setting the FAX monitor function	1: OFF 2:PHASE B 3:ALL	1, 2, 3	1	Sets whether to monitor the line signal with the unit's speaker during FAX communication or not.
554	Modem test				Press "START/COPY/SET".
555	Scanner test				Press "START/COPY/SET".
556	Motor test				Press "START/COPY/SET".
557	LED test				Press "START/COPY/SET".
558	LCD test				Press "START/COPY/SET".
559	Setting the document jam detection	1:ON 2:OFF	1, 2	1	Selects the jam detection of a document during FAX transmission/copying.
560	Cutter selection	1:ON 2:OFF	1, 2	1	Turns OFF the cutter function.
561	KEY test				Press any key.
562	Cutter test				Press "START" key. [Refer to test function]
570	Setting the % break(KX-FT78CE-B ONLY)	1:61% 2:67%	1, 2	1	Sets the % break of pulse dialing.
570	Setting the % break(KX-FT78HG-B ONLY)	1:61% 2:67%	1, 2	2	Sets the % break of pulse dialing.
571	Setting the number of times that ITS is redialed	00~99	00~99	05times	Selects the number of times that ITS is redialed (not including the first dial).
572	Setting the ITS redial interval	001~999 sec	001~999	065 sec	Sets the interval of ITS redialing.
573	Setting of number of rings for REMOTE TURN ON	01~99	01~99	10 times	Sets the number of rings before the unit starts to receive a document in the TEL mode.
580	TAM continuous tone detection	1:ON 2:OFF	1, 2	1	ON: Stops TAM operation when Dial tone, etc. are detected.
590	Setting the number of FAX redial times	00~99	00~99	05 times	Selects the number of redial times during FAX communication (not including the first dial).
591	Setting the FAX redial interval	001~999 sec	001~999	065 sec	Sets the FAX redial interval during FAX communication.
592	Designation of CNG sending	1: OFF 2:ALL 3:AUTO	1, 2, 3	2	Lets you select the CNG output during FAX transmission. ALL: CNG is output at phase A. AUTO: CNG is output only when automatic dialing is performed. OFF: CNG is not output at phase A.

Code	Function	Set Value	Effective Range	Default	Remarks
593	Setting the interval between CED and the 300 bps signal	1: 75 msec 2:500 msec 3:1000 msec	1, 2, 3	1	Sets the interval between the CED signal and subsequent 300 bps signal. (See "5. Unit can copy, but cannot transmit/receive long distance or international communications" in DEFECTIVE FACSIMILE SECTION (P.41).)
594	Setting the overseas DIS detection	1: Detects on the 1st time. 2: Detects on the 2nd time.	1, 2	1	Sets the recognition format of the DIS signal. 1: Detects the first DIS signal sent from the receiver during FAX transmission. 2: Ignores the first DIS signal sent from the receiver during FAX transmission. (See "5. Unit can copy, but cannot transmit/receive long distance or international communications" in DEFECTIVE FACSIMILE SECTION (P.41).)
595	Setting an acceptable reception error value	001~999 X number of times	001~999	100	Sets the number of acceptable error lines when the FAX reconstructs the received data.
596	Setting the transmit level	- 15~00	- 15~00	- 10 dBm	Selects the FAX transmission level.
598	Receiving Sensitivity	- 43dBm	20~48	40	(See "5. Unit can copy, but cannot transmit/receive long distance or international communications" in DEFECTIVE FACSIMILE SECTION (P.41).)
717	Transmit speed select	1:9600BPS 2:7200BPS 3:4800BPS 4:2400BPS	1~4	1	Adjusts the speed to start training during FAX transmission.
718	Receive speed select	1:9600BPS 2:7200BPS 3:4800BPS 4:2400BPS	1~4	1	Adjusts the speed to start training during FAX reception.
719	Ringer off in TEL/FAX mode	1:ON 2:OFF	1, 2	1	Sets the ringer switch off when a call is received in the TEL/FAX mode.
721	Pause tone detect	1:ON 2:OFF	1, 2	1	Selects the tone detection for pauses in dialing.
722	Redial tone detect	1:ON 2:OFF	1, 2	1	Selects the tone detection mode after redialing.
731	CPC mode	1:A 2:B 3:OFF	1, 2, 3	1	Set the CPC signal detection mode from the converter.
763	CNG detect time	1:10 sec 2:20 sec 3:30 sec	1, 2, 3	2	Selects the CNG detection time of friendly reception.
771	T1 timer	1:35 sec 2:60 sec	1, 2	1	Sets a higher value when the response from the other party needs more time during FAX transmission.
774	T4 timer	00~99	00~99	00	
775	Monitoring of message transfer	1:ON 2:OFF	1, 2	2	If set to ON a message can be monitored from this unit's SP-PHONE when transferring a message.
784	Voice prompt test				You can hear the voice prompt from speaker after pressing "START" key.
815	Sensor check				Press "START/COPY/SET".
841	Digital SP-Phone check				See DIGITAL SPEAKERPHONE (P.73) .
882	Journal 3 list				See PRINTOUT EXAMPLE (P.92) .

2.4.5. SERVICE MODE SETTINGS (Example of a printed out list)

2.4.5.1. KX-FT78CE (for Czech)

【 SERVICE DATA LIST 】

501 PAUSE TIME	=	050*100ms		[001...600]*100ms			
502 FLASH TIME	=	10*10ms		[01...99]*10ms			
503 DIAL SPEED	=	10pps		[1=10	2=20]pps		
510 VOX TIME	=	6sec		[1=6	2=4]sec		
520 CED FREQ.	=	2100Hz		[1=2100	2=1100]Hz		
521 INTL. MODE	=	ON		[1=ON	2=OFF]		
522 AUTO STANDBY	=	ON		[1=ON	2=OFF]		
523 RCV EQL.	=	0.0KΩ		[1=0.0	2=1.8	3=3.6	4=7.2]KΩ
524 SND EQL.	=	0.0KΩ		[1=0.0	2=1.8	3=3.6	4=7.2]KΩ

【 SPECIAL SERVICE SETTINGS 】

533	534	544	552	553	559	560	570	571	572	573	580	590
05	065	50	2	1	1	1	1	05	065	10	1	05
		← Code										
591	592	593	594	595	596	598	717	718	719	721	722	731
065	2	1	1	100	10	40	1	1	1	1	1	1
		← Set Value										
763	771	774	775									
2	1	00	2									

Note:

The above values are the default values.

【 HISTORY 】

1. DATE

TIME=00002 HOURS

2. KEY OPERATION

1ST. 50:

05 05 05 05 04 04 05 05 05 05 04 0D 0D 0C 04 05 3C 39 3A 3A 3A 3B 04 00 00
00 00

LAST 50:

[illegible]

3. NUMBER OF COPY

$$= 00000$$

4. NUMBER OF RX

=00000

5. NUMBER OF TX

=00000

YOUR LOGO
YOUR FAX NUMBER

2.4.5.2. KX-FT78CE (for Slovak)

【 SERVICE DATA LIST 】

501 PAUSE TIME	=	050*100ms	[001...600]*100ms
502 FLASH TIME	=	10*10ms	[01...99]*10ms
503 DIAL SPEED	=	10pps	[1=10 2=20]pps
510 VOX TIME	=	6sec	[1=6 2=4]sec
520 CED FREQ.	=	2100Hz	[1=2100 2=1100]Hz
521 INTL. MODE	=	ON	[1=ON 2=OFF]
522 AUTO STANDBY	=	ON	[1=ON 2=OFF]
523 RCV EQL.	=	0.0Km	[1=0.0 2=1.8 3=3.6 4=7.2]Km
524 SND EQL.	=	0.0Km	[1=0.0 2=1.8 3=3.6 4=7.2]Km

Code Set Value

【 SPECIAL SERVICE SETTINGS 】

533	534	544	552	553	559	560	570	571	572	573	580	590
05	065	50	2	1	1	1	1	05	065	10	1	05
591	592	593	594	595	596	598	717	718	719	721	722	731
065	2	1	1	100	10	40	1	1	1	1	1	1
763	771	774	775									
2	1	00	2									

Code Set Value

Note:

The above values are the default values.

【 HISTORY 】

1. DATE

TIME=00002 HOURS

2. KEY OPERATION

1ST. 50:

05 05 05 05 04 04 05 05 05 05 04 0D 0D 0C 04 05 3C 39 3A 3A 3A 3B 04 05 3C
34 38 04 0D 04 37 34 0D 0D 0E 04 0D 04 01 01 01 05 05 05 05 04 04 05 05 05

LAST 50:

34 38 04 0D 04 37 34 0D 0D 0E 04 0D 04 01 01 01 05 05 05 05 04 04 05 05 05
00 02 0B 16 00

3. NUMBER OF COPY

=00000

4. NUMBER OF RX

=00000

5. NUMBER OF TX

=00000

YOUR LOGO

YOUR FAX NUMBER

2.4.5.3. KX-FT78HG

【 SERVICE DATA LIST 】

501 PAUSE TIME	=	050*100ms	[001...600]*100ms
502 FLASH TIME	=	10*10ms	[01...99]*10ms
503 DIAL SPEED	=	10pps	[1=10 2=20]pps
510 VOX TIME	=	6sec	[1=6 2=4]sec
520 CED FREQ.	=	2100Hz	[1=2100 2=1100]Hz
521 INTL. MODE	=	ON	[1=ON 2=OFF]
522 AUTO STANDBY	=	ON	[1=ON 2=OFF]
523 RCV EQL.	=	0.0Km	[1=0.0 2=1.8 3=3.6 4=7.2]Km
524 SND EQL.	=	0.0Km	[1=0.0 2=1.8 3=3.6 4=7.2]Km

← Code ← Set Value

【 SPECIAL SERVICE SETTINGS 】

533	534	544	552	553	559	560	570	571	572	573	580	590
05	065	50	2	1	1	1	2	05	065	10	1	05
591	592	593	594	595	596	598	717	718	719	721	722	731
065	2	1	1	100	10	40	1	1	1	1	1	1
763	771	774	775									
2	1	00	2									

← Code ← Set Value

Note:

The above values are the default values.

【 HISTORY 】

1. DATE

TIME=00000 HOURS

2. KEY OPERATION

1ST. 50:

05 01 01 01 05 05 05 05 04 0C 0B 04 0C 04 01 01 01 05 3C 39 3A 3A 3A 3B 04
00 00

LAST 50:

00
00 00

3. NUMBER OF COPY

=00000

4. NUMBER OF RX

=00000

5. NUMBER OF TX

=00000

YOUR LOGO

YOUR FAX NUMBER

2.4.6. OTHER

[HISTORY]

No.	Display	Function
1	DATA	Date and time which are set by a user for the first time after purchase. TIME is the expiration from the first power on after purchase.
2	KEY OPERATION	Indicate 2-digit codes. (Refer to BUTTON CODE TABLE (P.94). 1st.50: History of the key operation from 1st to 50th after purchase. Last.50: History of the last 50 key operations.
3	NUMBER of COPY	The number of pages copied..
4	NUMBER of RX	The number of pages received.
5	NUMBER of TX	The number of pages sent.

CROSS REFERENCE:

BUTTON CODE TABLE (P.94)

2.4.7. SPECIAL SERVICE JOURNAL REPORTS

Example:

Journal 3 shown below, which are special journals giving the additional detailed information about the latest 35 communications, can be printed by Service Code 882. Remote printing function for the journal reports (JOURNAL and JOURNAL 3) is also available for service technicians. (Refer to **REMOTE PROGRAMMING** (P.57).) The JOURNAL report only gives you basic information about a communication, but the JOURNAL 3 report provide different information on the same item (communication).

DIARIO		Jan. 01 2002 04:19PM					
NO.	OTHER FACSIMILE	START TIME	USAGE TIME	MODE	PAGES	RESULT	
01	<FAX # NOT AVAIL.>	Jan. 01 12:12AM	00'38	RCV	01	OK	
02	<FAX # NOT AVAIL.>	Jan. 01 12:13AM	00'43	SND	01	OK	
03	<FAX # NOT AVAIL.>	Jan. 01 03:47PM	00'41	RCV	00	OTHER FAX NOT RESPONDING	
04	1234	Jan. 01 04:05PM	00'40	SND	00	OTHER FAX NOT RESPONDING	
05	1234	Jan. 01 04:07PM	00'39	SND	00	OTHER FAX NOT RESPONDING	
06	1234	Jan. 01 04:09PM	00'39	SND	00	OTHER FAX NOT RESPONDING	
07	1234	Jan. 01 04:11PM	00'39	SND	00	OTHER FAX NOT RESPONDING	

JOURNAL 3		Jan. 12 2000 09:51PM						
NO.	(1) ENCODE	(2) MSLT	(3) RESOL	(4) SPEED	(5) RCV-TRIG.	(6) EQM(RX)	(7) ERROR LINE(RX)	(8) MAKER CODE
01	MH	20msec	STD.	9600BPS	MAN RCV	000000	00000	79
02	MH	20msec	STD.	9600BPS	?	000181	00000	00
03	MR	20msec	STD.	9600BPS	MAN RCV	0000F8	00003	0E
04	MR	20msec	STD.	9600BPS	MAN RCV	000000	00000	00

HOW TO READ JOURNAL REPORTS:

1. Look at **NO. 01** in the JOURNAL. If you want to know about the details about that item, see **NO. 01** in the JOURNAL 3. You can get the following information.

- * MODE: Fax transmission
- * TX SPEED: 9.6 kbps
- * RESOLUTION: standard
- * ENCODE: MH
- * MAKER CODE: 79

For further details, see **JOURNAL 3** (P.92).

2.4.7.1. JOURNAL 3

Descriptions:

1. ENCODE

Compression Code: MH/MR

2. MSLT

MSLT means Minimum Scan Line Time. Used only at the factory.

3. RESOLUTION (RESOL)

Indicates the resolution of the communication. If multiple pages are transmitted or received, it indicates the last page's resolution. If there is a communication error, "?" is displayed.

4. SPEED

Indicates the speed of communication. If multiple pages are transmitted or received, it indicates the last page's communication speed. If there is a communication error, "?" is displayed.

5. RCV-TRIG. (CNT.)

Indicates the trigger that causes the unit to switch to the fax receive mode. The available options are listed in JOURNAL 3 in **2.4.7.2. PRINTOUT EXAMPLE**. The values in parentheses indicate how many times the trigger has been used. (For example, "0003" means three times.)

No.	Display	Function
1	FAX MODE	Means the unit received a fax message in the FAX mode.
2	MAN RCV	Means the unit received a fax message by manual operation.
3	FRN RCV	Means the unit received a fax message by friendly signal detection.
4	RMT DTMF	Means the unit detected DTMF (Remote Fax activation code) entered remotely.
5	PAL DTMF	Means the unit detected DTMF (Remote Fax activation code) entered by a parallel connected telephone.
6	TURN-ON	Means the unit started to receive after 15 rings. (Remote Turn On: Service Code #573)
7	TIME OUT	Means the unit started to receive after Ring Time Out in the EXT-TAM or TEL/FAX mode.
8	IDENT	Means the unit detected Ring Detection.
9	TEL/FAX	Means the unit detected the CNN while it was sending the Dummy Ring Back Tone in the TEL/FAX mode.

NO RESPONSE DISAPPEARED ON JOURNAL

The "NO RESPONSE DISAPPEARED ON JOURNAL" displays the information about the last 10 communications terminated by "No Response". (Some of the communications terminated by "No Response" were not displayed in the JOURNAL.) When a fax transmission cannot be performed because the other party's unit is set to the TEL mode, "No response" will be printed.

6. EQM

EQM means Eye Quality Monitor. Used only at the factory.

7. ERROR LINE(RX)

When an error occurs while receiving a fax, this shows the number of error lines.

8. MAKER CODE

This shows a 2 digit code of the other party's fax machine brand.

0E: "KX" model

00: Unknown

79: "UF" model

19: "Xerox" model

2.4.7.2. PRINTOUT EXAMPLE

【 JOURNAL3 】

01 ENE. 1999 12:04AM

ENCODE	MSLT	RESOL	SPEED	RCV-TRIG.	EQM(RX)	ERROR LINE(RX)	MAKER CODE
MR	20msec	STD.	9600BPS	?	000000	00000	0E

2.5. TEST FUNCTIONS

Test Mode	Type of Mode	Code	Function
		Operation after code input	
PRINT TEST	Service Mode	"8" "5"	Prints a test pattern and checks the thermal head for abnormalities (missing dots, etc), and also checks the operation of the reception motor.(Refer to JOURNAL 3 (P.92).)
		START	
MOTOR TEST	Service Mode	"5" "5" "6"	Rotates the transmission and reception motors to check the operation of the motors. 0.....Stop 1.....Turn forward TX roller at 400pps 2-2 phase 2.....Turn forward TX roller at 400pps 1-2 phase 3.....Turn forward RX roller at 400pps 2-2 phase 4.....Turn forward RX roller at 400pps 1-2 phase 5.....Turn forward TX/RX roller at 400pps 1-2 phase 6.....Reverse the motor at 400pps 1-2 phase 7.....Set the cam gear to the home position 8.....Set the cam gear to the RX mode 9.....Set the cam gear to the copy mode press the STOP button to cancel.
		START	
MODEM TEST	Service Mode	"5" "5" "4"	Sends four kinds of FAX signals to check the sending function of the modem. 1)1100 Hz: Consecutive signal of EOM for tonal 2)2100 Hz: G2 carrier signal Consecutive of CED signal 3)G3,V29 training signal [modulation wave of carrier signal (1700 Hz)]
		START	
ROM CHECK	Service Mode	"5" "5" "4"	Indicates the version and checks the sum of the ROM.
		START	
SCAN CHECK	Service Mode	"5" "5" "5"	Turns on the LEDs of the image sensor and operates the read systems.
		START	
LCD CHECK	Service Mode	"5" "5" "8"	Checks the LCD indication.Illuminates all the dots to check if they are normal.
		START	
DTMF SINGLE TEST	Service Mode	"5" "5" "2"	Outputs the DTMF as single tones. Used to check the frequencies of the individual DTMF tones. Refer to DTMF SINGLE TONE TRANSMIT SELECTION (P.94).
		1...ON 2...OFF	
KEY CHECK	Service Mode	"5" "6" "1"	Checks the button operation. Indicates the button code on the LCD while the button is pressed. Refer to BUTTON CODE TABLE (P.94).
		START (any key)	
FACTORY SET	Service Mode	"5" "5" "0"	Clears the memory where the users can store data.
		START	
SENSOR CHECK & VOX CHECK	Service Mode	"8" "1" "5"	CHECKS THE SENSOR OPERATION After entering this mode, perform the copy operation. For each sensor's operation, refer to SENSORS AND SWITCHES (P.130). [Do Sn Pa] : LCD DISPLAY Do: Document set sensor :Paper inserted. Turns on when a document is inserted. Sn: Read position sensor. :At the read position, turns on when the front cover is opened and the sensor lever is pressed directory. Pa: Recording Paper Sensor :Set Recording Paper. Turns on and off when the cassette lock lever is pushed down and up.
		START	
LED CHECK	Service Mode	"5" "5" "7"	Turn on the message LED.
		START	
DIGITAL SPEAKERPHONE X & TX CHECK	Service Mode	"8" "4" "1"	Please refer to DIGITAL SPEAKERPHONE (P.73)
		SPEAKERPHONE	

2.5.1. DTMF SINGLE TONE TRANSMIT SELECTION

When set to ON (=1), the 12 keys and transmission frequencies are as shown.

key	High Frequency (Hz)	key	Low Frequency (Hz)
"1"	697	"5"	1209
"2"	770	"6"	1336
"3"	852	"7"	1477
"4"	941	"8"	1633

When set to OFF (=2), the 12 keys and transmission frequencies are as shown.

High (Hz)	1209	1336	1477
Low (Hz)			
697	"1"	"2"	"3"
770	"4"	"5"	"6"
852	"7"	"8"	"9"
941	"X"	"0"	"#"

Note:

After performing this check, do not forget to turn the setting off.

Otherwise, dialing in DTMF signal will not work.

2.5.2. BUTTON CODE TABLE

Code	Button Name	Code	Button Name	Code	Button Name
03	RECEIVE MODE	0F	BROAD CAST	38	8
04	FAX/START/SET	14	RECORD	89	9
05	MEMU	16	ERASE	3A	0
07	HELP	18	PLAY MESSAGE	3B	X
08	SP-PHONE	31	1	3C	#
09	COPY	32	2	3D	REDIAL/PAUSE
0A	MUTE	33	3	3E	FLASH
0B	PREV	34	4	00	NO INPUT
0C	NEXT	35	5	01	STOP
0D	+ VOLUME	36	6		
0E	- VOLUME	37	7		

Note:

These codes (00, 01) are only for the data in the History Report.

2.5.3. PRINT TEST PATTERN

