

GENERAL OUTLINE OF SYSTEM

The KIC9307AF-020 is a digital tuning system optimum for such portable audio equipment as radio with a cassette tape recorder, and is provided with 5 bands of TV (VHF)/FM/SW/MW/LW and compatible with worldwide destinations.

RECEIVING BAND

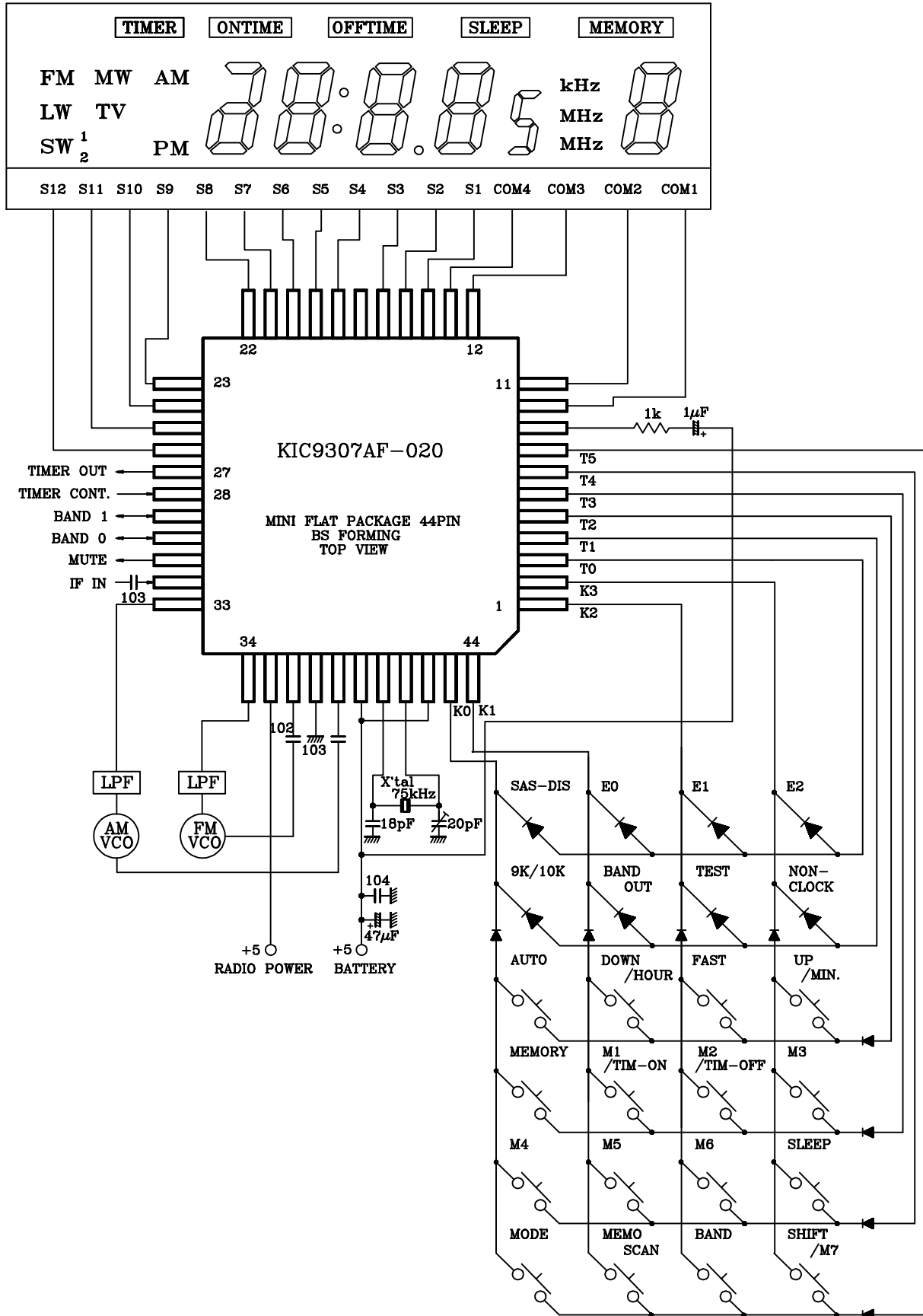
BAND	Receiving Freq. Range	IF[Hz]	Fref [Hz]	step [Hz]	REMARK
TV	1 ~ 3 CH	-10.7 M	25 k	1 CH	Japan 3 Band
	4 ~ 12 CH		12.5 k	1 CH	Japan 3 Band
FM	87.5 ~ 107.9 MHz	+10.7 M	25 k	200 k	USA 1
	87.5 ~ 108.0 MHz			100 k	USA 2, Canada
	87.5 ~ 108.0 MHz			100 k	Other
	87.50 ~ 108.00 MHz	50 k			
	76.0 ~ 90.0 MHz	-10.7 M	25 k	100 k	Japan 3 Band
	FM 76.0 ~ TV 3 CH				Japan FM wide
MW	531 ~ 1602 kHz	+450 k	3 k	9 k	USA 1,2
	530 ~ 1710 kHz		5 k	10 k	
	522 ~ 1629 kHz		3 k	9 k	Japan
	531 ~ 1602 kHz		3 k	9 k	Other
	530 ~ 1610 kHz		5 k	10 k	
LW	146 ~ 281 kHz	+ 450 k	1 k	1 k	-
SW	5.95 ~ 15.6 MHz	+ 450 k	5 k	5 k	Gen. SW-A
	3.8 ~ 12.5 MHz				Gen. SW-B
	2.3 ~ 6.2 MHz				SW1
	7.1 ~ 21.85 MHz				SW2

FUNCTIONAL OUTLINE

- TUNING FUNCTION
 - Manual Up/Down Tuning (Sawtooth system)
 - Auto-tuning (seek system) or semi-auto memory tuning is selectable.
 - IF counter system auto stop function.
 - Auto tuning in SW band is the scan system in the meter band.
 - Memory scan tuning
 - Band changeover of method to which either of momentary or lock switch is selectable.
- CLOCK FUNCTION
 - Hour clock (set up by destination)
 - ON/OFF timer by time set system.
 - Sleep timer (90 min.)

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LAY OUT



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Receiving Bands & Preset Memory

Diode jumper				BAND	Receiving Freq. Range	CH	IF [Hz]	f _{ref} [Hz]	step [Hz]	Remark
E0	E1	E2	ST							
×	×	×	*	FM	87.5 ~ 107.9 MHz	10	+ 10.7 M	25 k	200 k	USA 1 FM 200 kHz
			○	AM	531 ~ 1602 kHz	10	+ 450 k	3 k	9 k	
			×			530 ~ 1710 kHz	10	+ 450 k	5 k	10 k
×	×	○	*	FM	87.5 ~ 108.0 MHz	10	+ 10.7 M	25 k	100 k	USA 2 FM 100 kHz
			○	AM	531 ~ 1602 kHz	10	+ 450 k	3 k	9 k	
			×			530 ~ 1710 kHz	10	+ 450 k	5 k	10 k
×	○	×	○	FM	87.5 ~ 108.0 MHz	10	+ 10.7 M	25 k	50 k	Gen. SW-A
			×		87.5 ~ 108.0 MHz	10	+ 10.7 M	25 k	100 k	
			○	MW	531 ~ 1602 kHz	5	+ 450 k	3 k	9 k	
			×		530 ~ 1610 kHz	5	+ 450 k	5 k	10 k	
			*	SW	5.95 ~ 15.6 MHz	5	+ 450 k	5 k	5 k	
			*	LW	146 ~ 281 kHz	5	+ 450 k	1 k	1 k	
×	○	○	○	FM	87.5 ~ 108.0 MHz	10	+ 10.7 M	25 k	50 k	Europe
			×		87.5 ~ 108.0 MHz	10	+ 10.7 M	25 k	100 k	
			○	MW	531 ~ 1602 kHz	5	+ 450 k	3 k	9 k	
			×		530 ~ 1610 kHz	5	+ 450 k	5 k	10 k	
			*	LW	146 ~ 281 kHz	5	+ 450 k	1 k	1 k	
○	×	×	○	FM	87.5 ~ 108.0 MHz	5	+ 10.7 M	25 k	50 k	Middle & Near East
			×		87.5 ~ 108.0 MHz	5	+ 10.7 M	25 k	100 k	
			○	MW	531 ~ 1602 kHz	5	+ 450 k	3 k	9 k	
			×		530 ~ 1610 kHz	5	+ 450 k	5 k	10 k	
			*	SW	2.3 ~ 6.2 MHz	5	+ 450 k	5 k	5 k	
					7.1 ~ 21.85 MHz	5	+ 450 k	5 k	5 k	
○	×	○	○	FM	87.5 ~ 108.0 MHz	10	+ 10.7 M	25 k	50 k	Gen. SW-B
			×		87.5 ~ 108.0 MHz	10	+ 10.7 M	25 k	100 k	
			○	MW	531 ~ 1602 kHz	5	+ 450 k	3 k	9 k	
			×		530 ~ 1610 kHz	5	+ 450 k	5 k	10 k	
			*	SW	3.8 ~ 12.5 MHz	5	+ 450 k	5 k	5 k	
			*	LW	146 ~ 281 kHz	5	+ 450 k	1 k	1 k	
○	○	×	*	FM	87.5 ~ 108.0 MHz	10	+ 10.7 M	25 k	100 k	Canada
			○	AM	531 ~ 1602 kHz	10	+ 450 k	3 k	9 k	12-hour clock
			×		530 ~ 1610 kHz	10	+ 450 k	5 k	10 k	
○	○	○	○	TV	1 ~ 3 ch 4 ~ 12 ch	7	- 10.7 M	25 k 12.5 k	1 ch	Japan
			○	FM	76.0 ~ 90.0 MHz	7	-10.7 M	25 k	100 k	FM WIDE BAND 12-hour clock
			×		76.0 MHz ~ 3 ch	7	-10.7 M	25 k	100k/1ch	
			*	AM	522 ~ 1629 kHz	7	+ 450 k	3 k	9 k	

○ : with diode × : without diode * : do not care.
ST : STEP diode jumper

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KEY MAP

KIC9307F-020 (japanese specification)

	T0	T1	T2	T3	T4	T5
K3	* E2	* NON CLOCK	UP/ MIN	M3	SLEEP	M7
K2	* E1	TEST	FAST	M2 TIM-OFF	M6	BAND
K1	* E0	* BAND OUT	DOWN/ HOUR	M1 TIM-ON	M5	MEMO SCAN
K0	* SAS-DIS	* 9 k 10 k	AUTO	MEMORY	M4	MODE

KIC9307F-020 (other area specification)

	T0	T1	T2	T3	T4	T5
K3	* E2	* NON CLOCK	UP/ MIN	M3	SLEEP	SHIFT
K2	* E1	TEST	FAST	M2 TIM-OFF		BAND
K1	* E0	* BAND OUT	DOWN/ HOUR	M1 TIM-ON	M5	MEMO SCAN
K0	* SAS-DIS	* 9 k 10 k	AUTO	MEMORY	M4	MODE

* Diode jumper

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KEY MATRIX FUNCTION EXPLANATION

SYMBOL	FUNCTIONAL DESCRIPTION.
AUTO	Semi auto memory function if SAM disable jumper is not available. Auto up tuning function if SAM disable jumper is available.
UP/ MIN	Frequency up. Continuous tuning mode results if the key is continuously pressed for more than 0.5 sec. When correcting a time or setting the timer, "MIN" digit is set up.
FAST	Multiple pressing together with UP/DOWN keys accelerates the manual tuning.
DOWN/ HOUR	Frequency down. Continuous tuning mode results if the key is continuously pressed for more than 0.5 sec. When correcting a time or setting the timer, "HOUR" digit is set up.
MEMORY	When indicating frequency, puts the system in the preset memory write mode. When indicating clock, puts the system in the clock correction mode.
BAND	The band changeover of cyclical method can be carried out.
M1 TIM-ON	When indicating frequency, this key is used for the preset memory call and write. When indicating a time, puts the system in the timer ON time set-up mode.
M2 TIM-OFF	When indicating frequency, this key is used for the preset memory call and write. When indicating a time, puts the system in the timer OFF time set-up mode.
M3 ~M5 (M7)	This key is used for the preset memory call and write.
SHIFT	If the preset memory has channels up to 10, push this key and then, push M1 ~ M5 keys for M6~M10 keys call and write.
SLEEP	Sets up the sleep timer.
MODE	Switches the frequency indication and clock indication.
MEMO SCAN	Calls and receives the preset memory in order.
TEST	As long as this key is kept pushed, all indications on LCD are kept ON. Further, this capable of checking the timer and sleep functions by accelerating the clock.

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DIODE MATRIX FUNCTION EXPLANATION

SYMBOL	FUNCTIONAL DESCRIPTION			
E0 ~ E2	Set up a destination.			
	Diode			Destination
	E0	E1	E2	
	-	-	-	USA 1
	-	-	○	USA 2
	-	○	-	General (SW-A type)
	-	○	○	Europe
	○	-	-	Middle & Near East
	○	-	○	General (SW-B type)
	○	○	-	Canada Australia
○	○	○	Japan	
○ : Diode is available				
SAS-DIS	<p>Select whether [AUTO] key is to be used as the auto-up tuning or the semi auto memory.</p> <p>With the jumper : Auto up tuning operation.</p> <p>Without the jumper : Semi auto memory operation.</p>			
NON-CLOCK	<p>Selects availability of clock</p> <p>With the jumper : A clock is available.</p> <p>Without the jumper : No clock is available.</p>			
9k 10k	<p>Except the specification for America, Canada and Australia, selects AM step.</p> <p>With the jumper : 9k step</p> <p>Without the jumper : 10k step</p> <p>Except the specification for General, Europe and Middle & Near East, selects FM/MW step.</p> <p>With the jumper : FM 50k/MW 9k step</p> <p>Without the jumper : FM 100k/MW 10k step</p> <p>Except the specification for Japan, selects availability of TV band.</p> <p>With the jumper : 3 BAND (FM, AM, TV)</p> <p>Without the jumper : 2 BAND (FM wide, AM)</p>			
BAND OUT	<p>With diode jumper :</p> <p>The band changeover of cyclical method can be carried out by [BAND] key.</p> <p>Without diode jumper :</p> <p>Selects receiving bands according the combination of the band input ports B0 and B1.</p>			

The diode jumper is read when there is key input.

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I/O Port

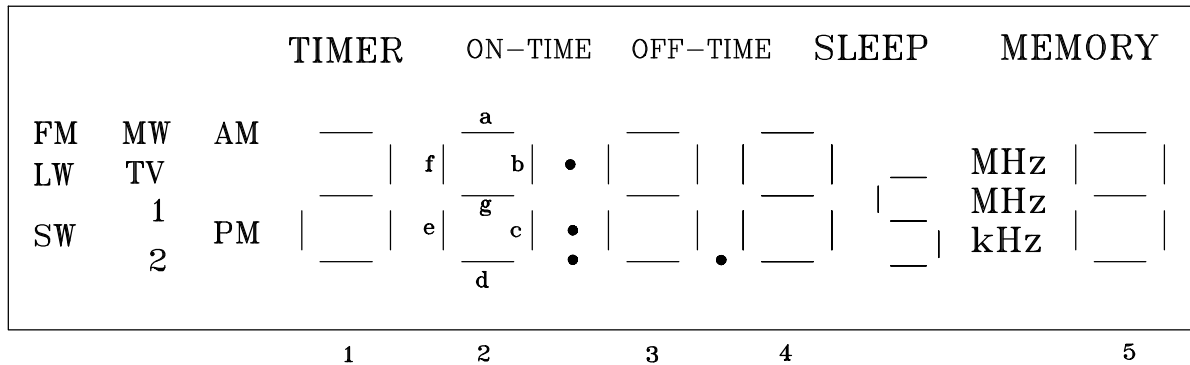
PORT	NO.	NAME	I/O	FUNCTION						Active	Init.		
P 10	30	B0	IN	Without [BAND OUT] jumper						-	-		
				B1 B0	JPN WIDE	JPN TV	USA Can. Aus.	Gen. SW-A	MNE			EURO	Gen. SW-B
				0 0	FM	TV	FM	FM	FM			FM	FM
P 11	29	B1	IN	0 1	FM	TV	FM	LW	SW 1	LW	LW	-	-
				1 0	FM	FM	AM	MW	MW	MW	MW		
				1 1	AM	AM	FM	SW-A	SW 2	FM	SW-B		
P 10	30	B0	OUT	With [BAND OUT] jumper						-	-		
				B1 B0	JPN WIDE	JPN TV	USA Can. Aus.	Gen. SW-A	MNE			EURO	Gen. SW-B
				0 0	-	TV 4-12	FM	FM	FM			FM	FM
P 11	29	B1	OUT	0 1	-	-	-	LW	SW 1	LW	LW	-	-
				1 0	FM	FM	AM	MW	MW	MW	MW		
				1 1	AM	AM	-	SW-A	SW 2	-	SW-B		
P 12	28	TIMER CONT.	IN	Timer control input : Timer operation at "L" and non-operation at "H" level.						L	-		
P 13	27	TIMER OUT	OUT	Timer control output : This port is put at "H" level during the timer operation and sleep operation.						H	L		
MUTE	31	MUTE	OUT	Muting output.						H	L		
$\overline{\text{INH}}$	35	$\overline{\text{INH}}$	IN	Inhibit input : Setting action of ON/OFF in radio mode.						-	-		

Note) MNE : Middle & Near East.

When [BAND OUT] diode SW is OFF and band is TV, B0 (30pin) changes to output. (TV out)

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LCD map



SYMBOL	PIN NO.	SEGMENT NAME				COMMENT
		COM 1	COM 2	COM 3	COM 4	
S 12 S 11	26 25	5 SW. MHz	FM. MHz :	kHz 2	PM TV	21.845 MHz SW 2
S 10 S9	24 23	MW 1c	1 1adeg	LW 1b	AM TIMER	SW 1 21.845 MHz
S 8 S 7	22 21	2d 2c	2e 2g	2f 2b	ON-TIME 2a	21.845 MHz
S 6 S 5	20 19	3d 3c	3e 3g	3f 3b	OFF-TIME 3a	21.845 MHz
S 4 S 3	18 16	4d 4c	4e 4g	4f 4b	SLEEP 4a	21.845 MHz
S 2 S 1	15 14	5d 5c	5e 5g	5f 5b	MEMORY 5a	PRESET CH