

TOSHIBA CMOS DIGITAL INTEGRATED CIRCUIT SILICON MONOLITHIC

TC9314F-018**SINGLE CHIP DIGITAL TUNING SYSTEM FOR CD RADIO CASSETTE**

TC9314F-018 is a CMOS LSI designed for a PLL frequency synthesizer radio system corresponded to the requirement of the whole world.

Since TC9314F-018 can be used for TC9284BF the CD processor and receive remote control signal, a low cost compact CD radio system can be constructed.

FEATURES

- Receiving band

AREA	JUMPER SETTING		BAND	FREQUENCY RANGE [Hz]	STEP [Hz]	FREF [Hz]	IF	NOTE	
	A1	A0							FM STEP MW STEP
USA	0	0	FM	87.5 ~ 107.9M	200k	25k	+ 10.7M		
				87.5 ~ 108.0M	100k				
			AM (*1)	530 ~ 1710k	10k	5k	+ 450k		
				531 ~ 1602k	9k				3k
general	0	1	FM	87.50 ~ 108.00M	50k	25k	+ 10.7M		
				87.5 ~ 108.0M	100k				
			MW / AM	531 ~ 1602k	9k	3k	+ 450k		
				530 ~ 1610k	10k				5k
			LW	146 ~ 281k	1k	1k			
EAST EUROPE	1	0	FM	65.00 ~ 74.0M	50k	25k	+ 10.7M		
				87.50 ~ 108.00M					100k
				65.00 ~ 74.0M					
			MW / AM	531 ~ 1602k	9k	3k	+ 450k		
				530 ~ 1610k	10k				5k
LW	146 ~ 281k	1k	1k						
JAPAN	1	1	FM	76.0 ~ 90.0M	100k	25k	- 10.7M	TD7104P	
				(*2)	MW / AM	522 ~ 1629M	9k		3k
	1	1	TV	1 ~ 12ch		1ch	25k		- 10.7M

(*1) AM mark is indicated, even if band is MW with SW band in USA area.

(*2) In case that there is not TV band, FM band extend. (76.0-90.0MHz + TV 1-3ch)

(*3) If TV band is selected, prescaler (TD7104P) is need.

There are SW bands with bands as shown above by setting of SW₀, SW₁ Jumper.

	JUMPER SETTING			BAND	FREQUENCY RANGE [Hz]	STEP [Hz]	FREF [Hz]	IF	NOTE
	SW ₁	SW ₀							
	0	0	—	no SW					
	0	1	—	SW _A	3.8~ 12.5M	5k	5k	+ 450k	
	1	0	—	SW _B	5.95~ 15.6M				
	1	1	—	SW ₁	2.3~ 7.3M				
			—	SW ₂	9.5~ 26.1M				

(*) Only SW mark is indicated for SW_A or SW_B.

(*) If jumper setting is SW₁, SW₂ when there is LW/TV band, SW₁, SW₂ bands are no set. (Maximum 4 band)

○ Outline of functions

○ Tuning functions and preset memory

- manual up/down tuning
- seek up/down tuning

○ Preset memory

- Fixed

FM / AM	20 / 20	stations
FM / MW / LW or TV	20 / 10 / 10	stations
FM / MW / SW-A or B	20 / 10 / 10	stations
FM / MW / LW or TV / SW-A or B	20 / 10 / 5 / 5	stations
FM / MW / SW ₁ / SW ₂	20 / 10 / 5 / 5	stations
total	30	stations
- Random

○ Clock functions

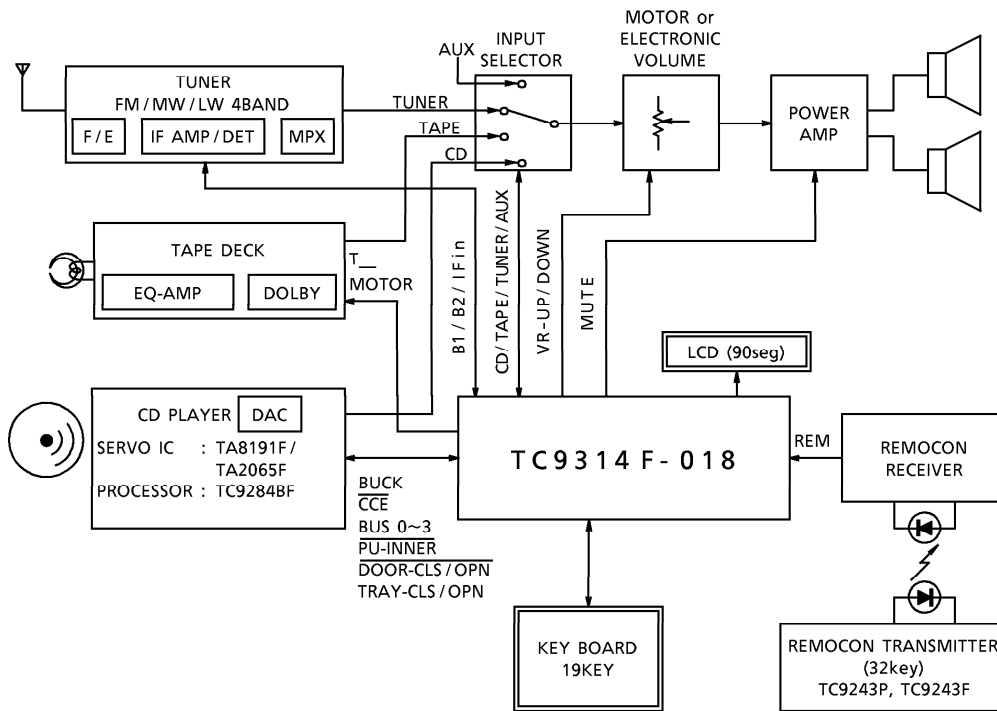
- 12H / 24H clock
- TIMER on / off
- SLEEP

○ CD functions

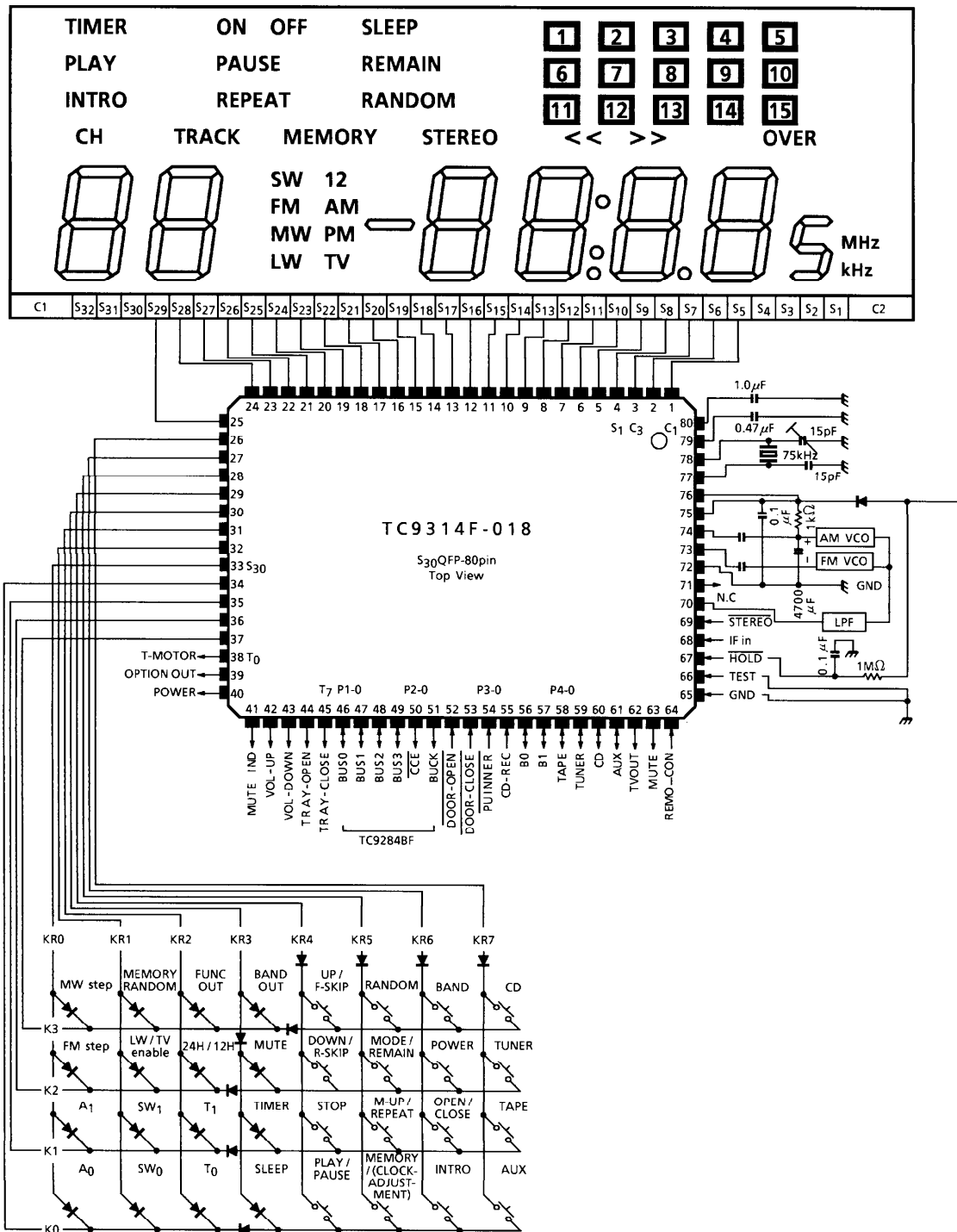
- random play
- intro play
- repeat play or track repeat play
- memory play (max 20 preset)
- CD FF / REW
- synchro rec mode
- tray open / close control
- indication of CD remain time
- music calendar display

- Remote control functions
 - option out on/off control
 - volume up/down control
 - direct selecting of preset memory and track number
- Other functions
 - function change by key or input (CD/TUNER/TAPE/AUX)
 - indication of STEREO mark
 - power on/off key
 - mute on/off control

BLOCK DIAGRAM



LAYOUT



RESTRICTIONS ON PRODUCT USE

000707EBA

- TOSHIBA is continually working to improve the quality and reliability of its products. Nevertheless, semiconductor devices in general can malfunction or fail due to their inherent electrical sensitivity and vulnerability to physical stress. It is the responsibility of the buyer, when utilizing TOSHIBA products, to comply with the standards of safety in making a safe design for the entire system, and to avoid situations in which a malfunction or failure of such TOSHIBA products could cause loss of human life, bodily injury or damage to property. In developing your designs, please ensure that TOSHIBA products are used within specified operating ranges as set forth in the most recent TOSHIBA products specifications. Also, please keep in mind the precautions and conditions set forth in the "Handling Guide for Semiconductor Devices," or "TOSHIBA Semiconductor Reliability Handbook" etc..
- The TOSHIBA products listed in this document are intended for usage in general electronics applications (computer, personal equipment, office equipment, measuring equipment, industrial robotics, domestic appliances, etc.). These TOSHIBA products are neither intended nor warranted for usage in equipment that requires extraordinarily high quality and/or reliability or a malfunction or failure of which may cause loss of human life or bodily injury ("Unintended Usage"). Unintended Usage include atomic energy control instruments, airplane or spaceship instruments, transportation instruments, traffic signal instruments, combustion control instruments, medical instruments, all types of safety devices, etc.. Unintended Usage of TOSHIBA products listed in this document shall be made at the customer's own risk.
- The products described in this document are subject to the foreign exchange and foreign trade laws.
- The information contained herein is presented only as a guide for the applications of our products. No responsibility is assumed by TOSHIBA CORPORATION for any infringements of intellectual property or other rights of the third parties which may result from its use. No license is granted by implication or otherwise under any intellectual property or other rights of TOSHIBA CORPORATION or others.
- The information contained herein is subject to change without notice.