**TOSHIBA** TC9309AF-125

TOSHIBA CMOS DIGITAL INTEGRATED CIRCUIT SILICON MONOLITHIC

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## SINGLE CHIP DIGITAL TUNING SYSTEM FOR 3 DISC CD CHANGER UNIT

TC9309AF-125 is a CMOS LSI designed for a PLL frequency synthesizer radio system corresponded to the requirement of 2 areas.

Since TC9309AF-125 can be used for TC9284BF the CD processor and receive remote control signal, a low cost compact 3 CD with radio system can be constructed.

#### **FEATURES**

Receiving band and preset memory

AREA	CODE	BAND	RECEIVING FREQUENCY [Hz]	STEP [Hz]	REFERENCE FREQUENCY	INTERMEDIATE FREQUENCY
	AREA				[Hz]	[Hz]
EUROPE	0	FM	87.50~108.00M	50k	50k	+ 10.70M
		MW	522~ 1620k	9k	9k	+ 450k
		LW	150~ 285k	1k	1k	
USA	1	FM	87.5~ 108.0M	100k	50k	+ 10.7M
		AM	520~ 1710k	10k	10k	+ 450k

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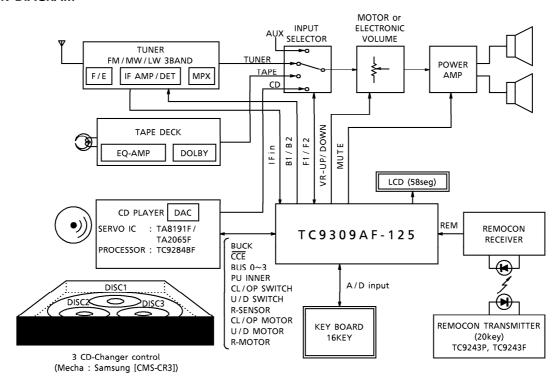
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- O Tuning functions and preset memory
  - manual up/down tuning
  - seek up/down tuning
  - scan up tuning
  - IF count (FM = 10.7MHz, MW (AM), LW = 450kHz)
  - Preset memory

EUROPE area : FM 10 stations, MW 5 stations, LW 5 stations
USA area FM 10 stations, AM 10 stations

- indication of STEREO mark.
- O CD functions
  - CD F-SKIP, R-SKIP
  - CD FF/REW
  - repeat play or track repeat play
  - memory play (max 20 preset)
  - tray open/close control
  - 3 disk CD changer control (Mecha: SAMSUNG [CMS-CR3])
  - synchro recording mode
- O Clock functions
  - 24H clock (EUROPE area)
  - 12H clock (USA area)
- O Remote control functions
  - volume up/down control
  - mute ON/OFF control
- Other functions
  - function change (CD/TUNER/TAPE/AUX)
  - power on / off key

### **BLOCK DIAGRAM**



LAYOUT

#### **REPEAT MEMORY TRACK** ST FΜ 0 MW AM $\longrightarrow$ $\mathsf{MHz}$ СН LW PM \$\sigma\_{32}\$\sigma\_{30}\$\sigma\_{29}\$\sigma\_{28}\$\sigma\_{27}\$\sigma\_{26}\$\sigma\_{22}\$\sigma\_{24}\$\sigma\_{23}\$\sigma\_{22}\$\sigma\_{21}\$\sigma\_{20}\$\sigma\_{19}\$\sigma\_{18}\$\sigma\_{17}\$\sigma\_{16}\$\sigma\_{15}\$\sigma\_{14}\$\sigma\_{13}\$\sigma\_{12}\$\sigma\_{11}\$\sigma\_{10}\$\sigma\_{9}\$\sigma\_{8}\$\sigma\_{7}\$\sigma\_{6}\$\sigma\_{5}\$\sigma\_{4}\$\sigma\_{3}\$\sigma\_{2}\$\sigma\_{11}\$\sigma\_{10}\$\sigma\_{9}\$\sigma\_{8}\$\sigma\_{7}\$\sigma\_{6}\$\sigma\_{5}\$\sigma\_{4}\$\sigma\_{3}\$\sigma\_{2}\$\sigma\_{11}\$\sigma\_{10}\$\sigma\_{9}\$\sigma\_{8}\$\sigma\_{7}\$\sigma\_{6}\$\sigma\_{5}\$\sigma\_{4}\$\sigma\_{3}\$\sigma\_{2}\$\sigma\_{11}\$\sigma\_{10}\$\sigma\_{9}\$\sigma\_{8}\$\sigma\_{7}\$\sigma\_{6}\$\sigma\_{5}\$\sigma\_{4}\$\sigma\_{3}\$\sigma\_{2}\$\sigma\_{11}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\sigma\_{10}\$\ C2 30pF 7.2MHz POWER SUPLY (+5V) 79 78 78 \$1 77 COM2 76 29 COM1 N.C TX 75 CD-REC TC9309AF-125 STEREO 1kD 4700 7x GND 73 QFP-80pin CK-ena V<sub>DD</sub> 72 -AMin 71 -Top View BR FORMING AREA -AM VCO FMin 70 GND 69 DO1 68 F1 -FM VCO B1 <del>-</del> 4 DO2 67 B2 -LPF DISC1 LED IF in REMOCON DISC2 LED 0 SC3 LED WT TEN WITH THE WITH PU-INNER — CLOSE SWITCH — OPEN SWITCH — UP / DOWN SWITCH — ROULETTE~SENSOR — DI SC3 KEY AD2 KEY AD1 3.3kΩ 3.3kΩ 330 X DcRef (V<sub>DD</sub>) MODE DISC1 STROBE

<u>—</u>£

DISC2

<del>4--</del>-

DISC3

<del>----</del>£

STOP

**─**ŧ

PLAY/PAUSE

DOWN / R-SKIP

LIP / F-SKIP

MEMORY

--

SD

SCK

OPEN/CLOSE MOTOR (-)

OPEN/CLOSE MOTOR (+) -

UP/DOWN MOTOR (-) ◄

UP/DOWN MOTOR (-) ←

15 h

11 | N.C

10 N.C

9 🗖 N.C

TC74HC4094AP

14 → ROULETE MOTOR (+)

13 → ROULETE MOTOR (-)

12 **b**→ POWER

OPEN/CLOSE

DISC-CHANGER

TUNER/BAND

−ŧ

POWER

TAPE

CD

AUX

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