

TOSHIBA CMOS DIGITAL INTEGRATED CIRCUIT SILICON MONOLITHIC

# TC9309AF-112

## SINGLE CHIP DIGITAL TUNING SYSTEM FOR CD RADIO CASSETTE

TC9309AF-112 is a CMOS LSI designed for a PLL frequency synthesizer radio system corresponded to the requirement of the whole world.

Since TC9309AF-112 can be used for TC9236F (AF) the CD processor and receive remote control signal, a low cost compact CD radio system can be constructed.

### FEATURES

- Receiving band and preset memory

AREA	CODE	BAND	FREQUENCY RANGE [Hz]	STEP [Hz]	FREF [Hz]	IF [Hz]
	A2A1A0					
EUROPE	000	FM	87.50~108.00M	50k	50k	+ 10.70M
	or 001	MW	522~ 1620k	9k	9k	+ 450k
		LW	150~ 285k	1k	1k	
USA1	010	FM	87.5~ 107.9M	200k	50k	+ 10.7M
		MW	520~ 1710k	10k	10k	+ 450k
USA2	011	FM	87.5~ 108.0M	100k	50k	+ 10.7M
		MW	520~ 1710k	10k	10k	+ 450k
LATIN AMERICA	100	FM	87.5~ 108.0M	100k	50k	+ 10.7M
		MW	520~ 1620k	5k	5k	+ 450k
AUSTRALIA MIDDLE AND NEAR EAST	101	FM	87.5~ 108.0M	100k	50k	+ 10.7M
		MW	531~ 1602k	9k	9k	+ 450k
SOUTH AFRICA	111	FM	87.50~108.00M	50k	50k	- 10.7M
		MW	531~ 1602k	9k	9k	+ 450k

(Note 1) CODE = 0, 0, 0 : 3 Band (FM/MW/LW), CODE = 0, 0, 1 : 2 Band (FM/MW)  
In case of CODE = 0, 0, 0, B2 Input port must fixed to "L".

(Note 2) Except for CODE = 0, 0, 0, Band indicator is FM/AM display.

(Note 3) Receiving frequency of FM is as shown below by area.

Europe, South Africa ... ↔107.9↔107.95↔108.0↔87.5↔87.55↔87.6↔ ...  
 USA1 ... ↔107.5↔107.7↔107.9↔87.5↔87.7↔87.9↔ ...  
 Others ... ↔107.8↔107.9↔108.0↔87.5↔87.6↔87.7↔ ...

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- Tuning functions and preset memory
  - manual up/down tuning
  - seek up/down tuning
  - scan up tuning
  - IF count (FM =  $\pm 10.7\text{MHz}$ , MW (AM) = 450kHz)
- Preset memory functions
  - FM : 10 stations, MW (AM) : 10 stations, LW : 5 stations    Total : max. 25 stations
- Clock functions
  - 12H/24H clock
- CD functions
  - random play
  - intro play
  - repeat play or track repeat play
  - memory play (max 20 preset)
  - CD FF/REW
  - synchronous recording mode
  - tray open/close control
  - indication of CD remain time
- Remote control functions
  - mute ON/OFF
  - volume up/down
  - direct selecting of preset memory and track number
- Other functions
  - function change (CD/TUNER/TAPE/AUX)
  - indication of STEREO mark
  - power on/off key
  - mute indicator

**BLOCK DIAGRAM**



