TOSHIBA CMOS DIGITAL INTEGRATED CIRCUIT SILICON MONOLITHIC

TC9304F-047

SINGLE CHIP DTS MICRO CONTROLLER (DTS-10)

TC9304F-047 is a single chip digital tuning system for car audio use.
Having the capability corresponding to the requirement of the whole world with the abundant specification selecting jumpers, this system is provided with the functions for two bands or three bands, clock and tape.

FEATURES

○ Receiving band

AREA	CODE		BAND	RECEIVING BAND [Hz]	STEP [Hz]	FREF [Hz]	IF [Hz]
	E1	E0					
—	0	0	FM	87.50~108.00M	50k	25k	+10.7M
	0	1		87.5~ 107.9M	200k		
	1	0		76.1~ 89.9M	100k		−10.7M
	1	1		87.50~108.00M	50k		
	0	0	MW	531~ 1602k	9k	9k	+450k
	0	1		530~ 1710k	10k	10k	
	1	0		522~ 1629k	9k	9k	
	1	1		531~ 1602k	9k	9k	
	0	0	LW (*)	153 / 155~ 281k	1k	1k	+450k

(*) MW and LW are operating as one band.
UP …… LW 281kHz → MW 531kHz …→ MW 1602kHz → LW 155kHz…
DOWN … MW 1602kHz ← LW 153kHz ←… LW 281kHz ← MW 531kHz…
During Auto Search Tuning and Hold Search Tuning, it's 9kHz step in LW band.

○ Outline of function

○ Tuning function

- Manual UP / DOWN tuning
- Auto-search tuning (SEEK)
- Hold-search tuning (SCAN)
- Memory scan tuning

○ Memory function

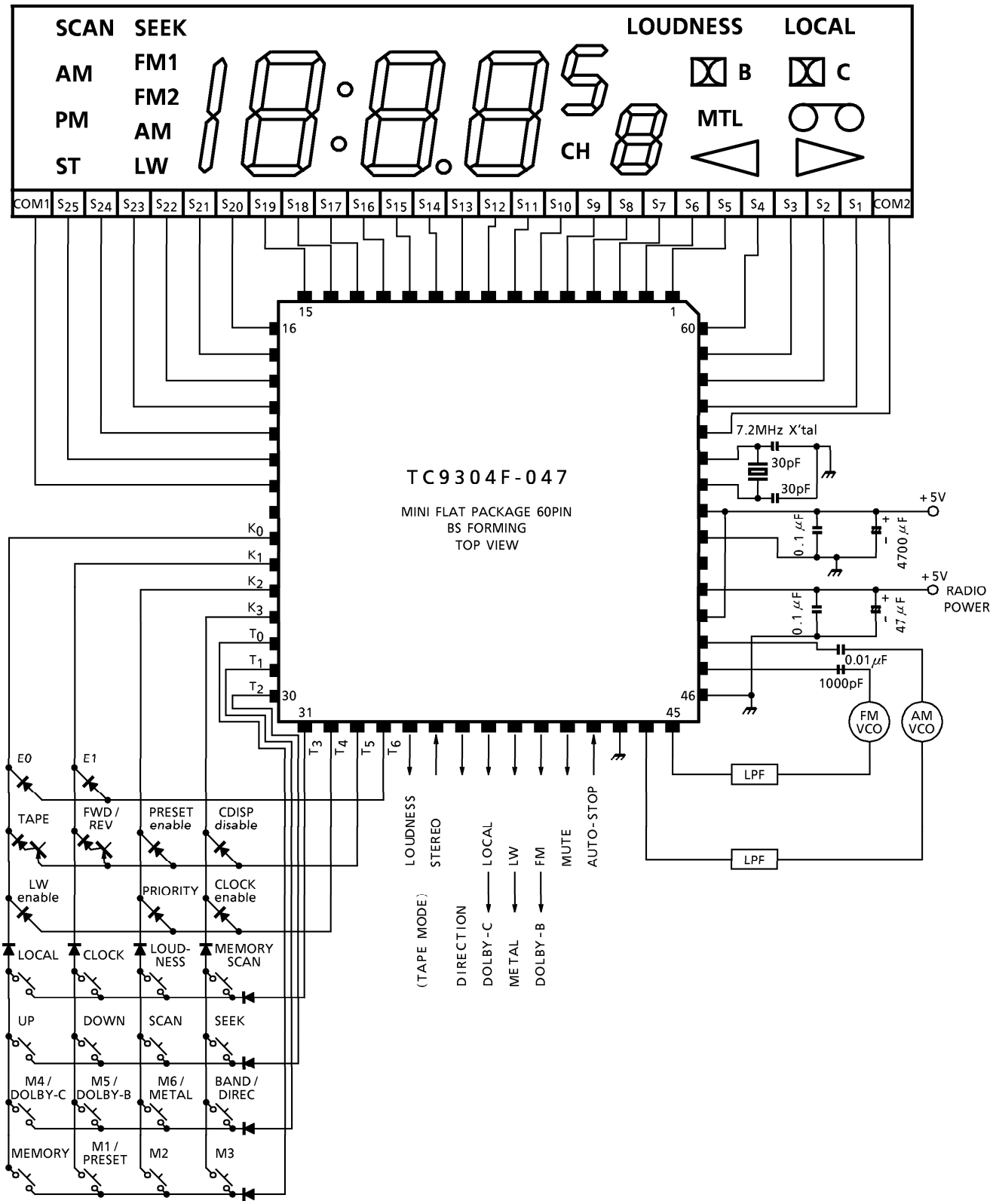
- Each band (FM1, FM2, MW / LW) : 6 stations, 3 bands × 6 stations = 18 stations max.
  But the receiving range of each band of FM1 and FM2 are the same.
- Auto-memory function
- Preset method can be chosen 1 key type or 6 keys type.
- Built-in tracking data

○ Clock function

- 12 / 24-h clock
- Clock function is optional.
- Clock display is optional at radio off mode.

○ Others

The abundant function switches and display for tape deck control.


SCAN
SEEK
AM
FM1
FM2
PM
AM
ST
LW
LOUDNESS
LOCAL
B
C
MTL
CH
COM1 S25 S24 S23 S22 S21 S20 S19 S18 S17 S16 S15 S14 S13 S12 S11 S10 S9 S8 S7 S6 S5 S4 S3 S2 S1 COM2
TC9304F-047
MINI FLAT PACKAGE 60PIN
BS FORMING
TOP VIEW
7.2MHz X'tal
30pF
30pF
+5V
0.1 μF
4700 μF
+5V
RADIO POWER
0.1 μF
47 μF
0.01 μF
1000pF
FM VCO
AM VCO
LPF
LPF
K0
K1
K2
K3
T0
T1
T2
T3
T4
T5
T6
LOUDNESS
STEREO
(TAPE MODE)
DIRECTION
DOLBY-C
LOCAL
METAL
LW
DOLBY-B
FM
MUTE
AUTO-STOP
E0
E1
TAPE
FWD / REV
PRESET enable
CDISP disable
LW enable
PRIORITY
CLOCK enable
LOCAL
CLOCK
LOUD-NESS
MEMORY SCAN
UP
DOWN
SCAN
SEEK
M4 / DOLBY-C
M5 / DOLBY-B
M6 / METAL
BAND / DIREC
MEMORY
M1 / PRESET
M2
M3

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