TOSHIBA CMOS DIGITAL INTEGRATED CIRCUIT SILICON MONOLITHIC

TC9304F-027

SINGLE CHIP DTS MICRO CONTROLLER (DTS-10)

TC9304F-027 is a CMOS LSI designed for FM/MW/LW radio of PLL frequency synthesizer system. It is applicable to the whole world.

It can construct high performance system as home stereo compactly, because it contain not only PLL, controller but prescaler and LCD driver.

FEATURES

O Receiving band

AREA	CODE A2A1A0	BAND	RECEIVING RANGE [Hz]	STEP [Hz]	FREF [Hz]	IF [Hz]
(*1)	000	FM	87.50~108.00M	50k	25k	+ 10.70M
Europe	or	MW	522~ 1620k	9k	9k	450 4504
	001	LW	153~ 281k	1k	1k	450, 459k
(*2) USA 1	010	FM	87.5~ 107.9M	200k	25k	+ 10.7M
		MW	520~ 1710k	10k	10k	450k
(*2)	011	FM	87.5~ 108.0M	100k	25k	+ 10.7M
USA 2		MW	520~ 1710k	10k	10k	450k
(*2) Middle and	100	FM	87.5~ 108.0M	100k	25k	+ 10.7M
South America		MW	520~ 1620k	5k	5k	450k
Oceania Middle and	101	FM	87.5~ 108.0M	100k	25k	+ 10.7M
near East		MW	531~ 1602k	9k	9k	450, 459k
Japan	110	FM	76.0~ 90.0M	50k	25k	– 10.7M
		MW	522~ 1629k	9k	9k	450, 459k
South Africa	111	FM	87.50~108.00M	50k	25k	– 10.7M
		MW	531~ 1602k	9k	9k	450, 459k

(*1) CODE = 000 is 3 band (FM/MW/LW), CODE = 001 is 2 band (FM/MW)

(*2) IF offset of MW is 450k even when AMIF = 1

1 2001-06-19

O Tuning function

• Manual tuning

Manual UP

Manual DOWN

Step feed and fast feed by push switch.

Auto-tuning

UP / DOWN

- Memory scan tuning
- IF counter is applicable. (When IF = 10.7MHz or 450kHz, it is possible.)
- IF offset of AM (MW/LW) is possible.
 (Limited only to Europe, Oceania, Middle and Near East, Japan and South Africa.)
- Band changeover can be mode with 1-button cyclic method or 3-button cycle method.

O Memory function

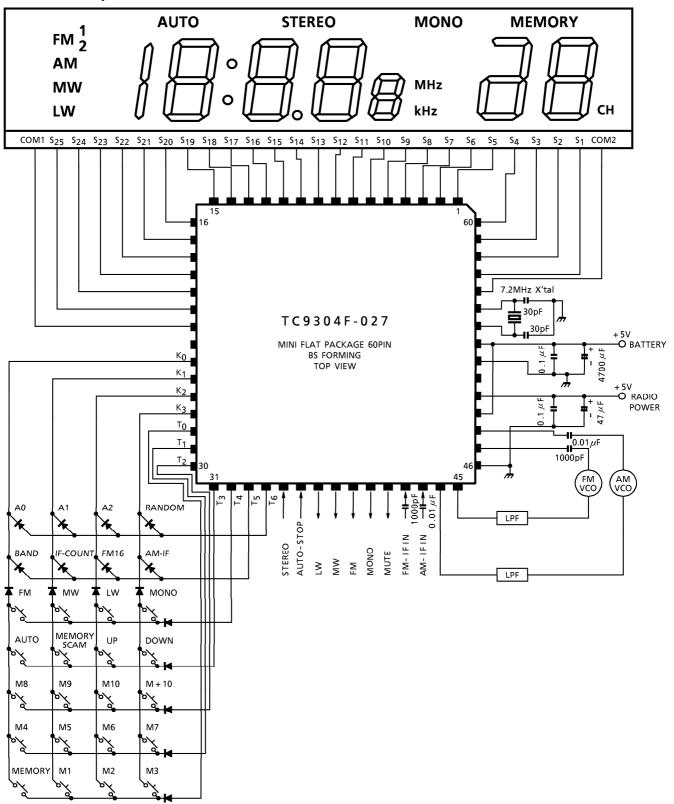
 Preset memory function is 8 channels each for FM1/FM2/MW/LW bands (totally 32 stations) or 8 channels each of FM/MW/LW bands (totally 24 stations) or random 20 channels (FM/MW/LW).

○ Others

• STEREO indication and MONO indication can be mode.

2 2001-06-19

TC9304F-027 Layout



3 2001-06-19

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.