

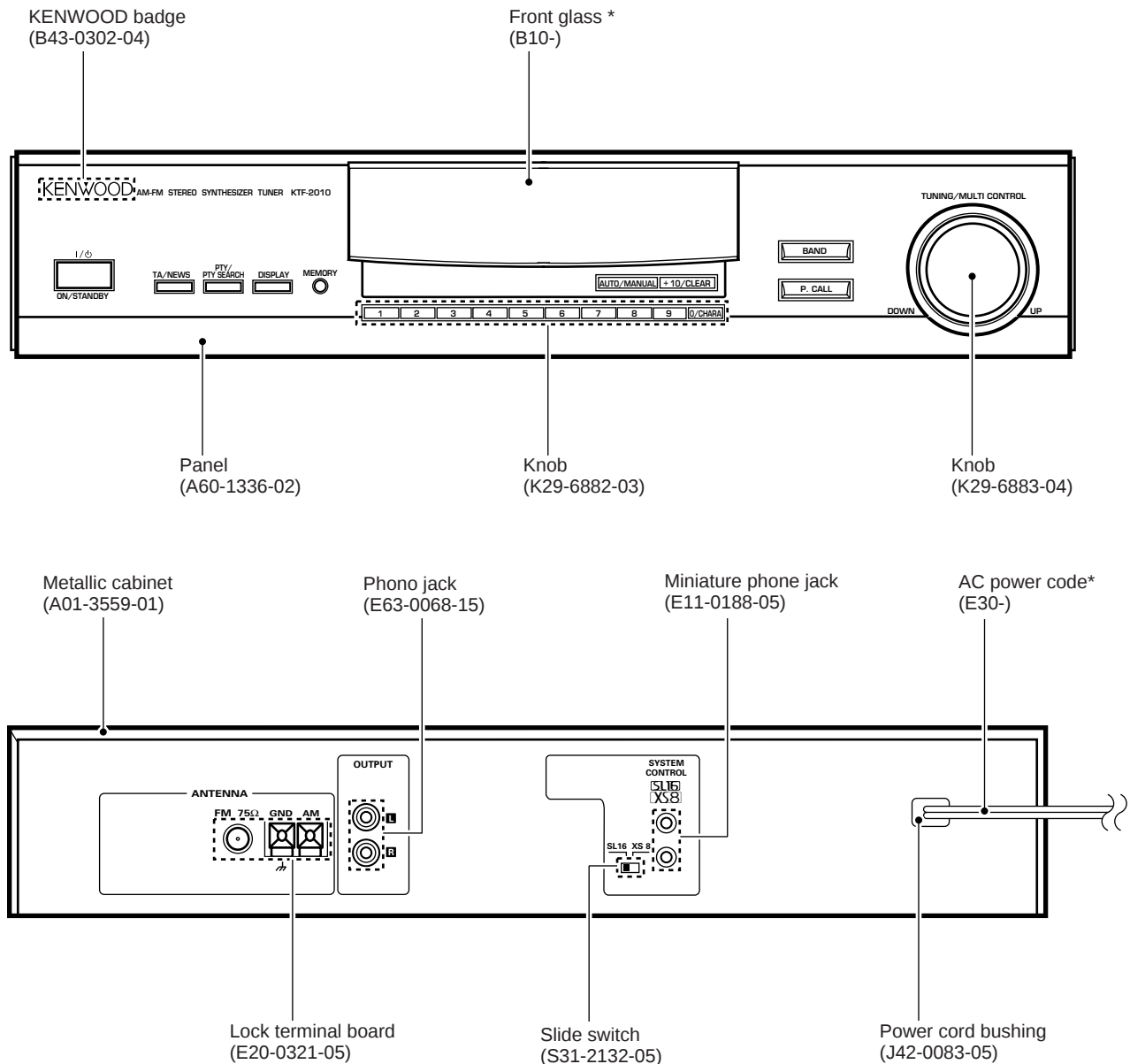
# KTF-2010/3010

## SERVICE MANUAL

KENWOOD

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Illustration is KTF-2010.



\* Refer to parts list on page 18.

### How to reset the microcomputer

The microcomputer may malfunction (impossibility operation, erroneous display, etc.) when the power cord is unplugged and plugged in again while the unit is in ON mode with the Key pressed or due to other external causes. In this case, execute the procedure on the right to reset the microcomputer and return the unit to the normal condition.

- ① Unplug the power cord from the wall outlet.
- ② While pressing and holding the (ON/STANDBY) key, plug the AC cord into the wall outlet again.

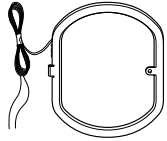
•Resetting the microcomputer clears the memory you entered and returns it to the initial condition when the unit left the factory.

# KTF-2010/3010

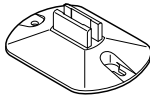
## ACCESSORIES / CONTROLS

### Accessories

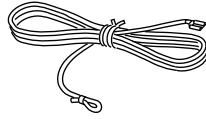
- AM loop antenna ass'y .....1  
(T90-0195-05)



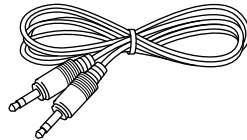
- Loop antenna stand  
(J19-3645-05)



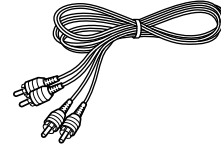
- Lead wire antenna.....1  
(T90-0809-05)



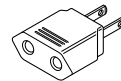
- System control cord .....1  
(E30-2733-05)



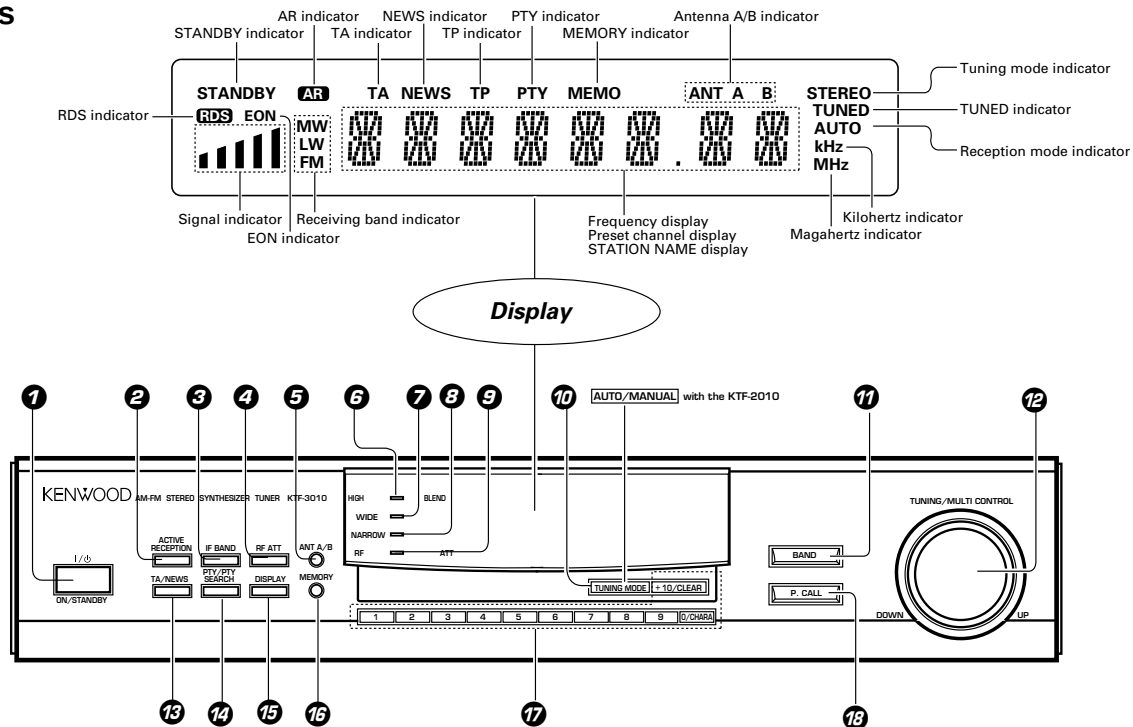
- Audio cord .....1  
(E30-0505-05)



- AC plug adapter .....1  
(E03-0115-05)  
(M type only)



### Controls

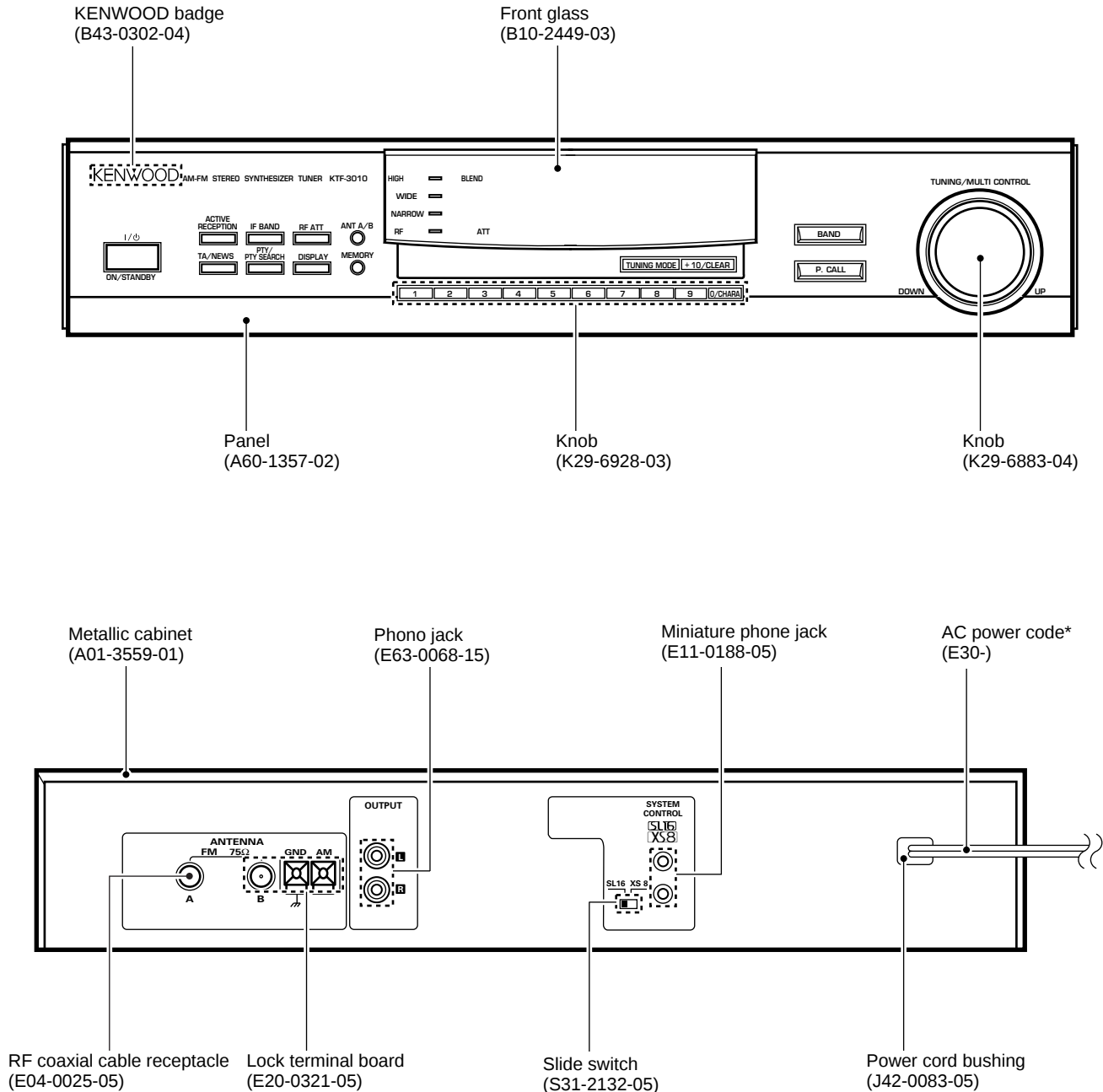


- POWER key**  
Press to turn on/off the power.
- ACTIVE RECEPTION key(KTF-3010 only)**  
Press to obtain the optimum reception conditions for the signals being received.
- IF BAND key(KTF-3010 only)**  
Press to the intermediate frequency pass band between WIDE(wide band) and NARROW(narrow band).
- RF ATT(KTF-3010 only)**  
Press to minimize the RF reciprocal modulation and mixed modulation distortion when there is an adjacent channel with strong.
- ATT A/B key(KTF-3010 only)**  
Press to select the antenna when using 2 antennas.
- HIGH BLEND indicator(KTF-3010 only)**
- WIDE indicator(KTF-3010 only)**
- NARROW indicator(KTF-3010 only)**
- RF-ATT indicator (KTF-3010 only)**
- AUTO/MANUAL key(KTF-2010)**  
**TUNING MODE key(KTF-3010)**  
Press to select the tuning mode.
- BAND key**  
Press to switch the broadcast band.
- TUNING/MULTI CONTROL knob**  
Used for tuning broadcast stations, selecting the program type and entering characters.
- TA/NEWS key**
- PTY/PTY SEARCH key**
- DISPLAY key**
- MEMORY key**  
Used for storing broadcast stations and entering station names.
- Numeric keys**  
Used for storing and calling up broadcast stations and entering station names.
- P.CALL key**  
Press to recall a preset station.

# KTF-2010/3010

## EXTERNAL VIEW

Illustration is KTF-3010.



\* Refer to parts list on page 18.

## CIRCUIT DESCRIPTION

### 1. Test mode

#### 1-1. Test mode with the main unit keys

##### a) Setting procedure

- While pressing the [P.CALL] key, plug the AC power cord to the power outlet.

##### b) Cancellation

- Unplug the AC power cord. The initial setting will take effect and the test mode will be canceled.

##### c) Description

###### **Auto POWER ON**

- When the AC power cord is plugged while pressing the [P.CALL] key, the POWER will turn ON and all function will be at the initial setting.

###### **ALL LED ON mode**

- When the AC power cord is plugged while pressing the [P.CALL] key, all the LEDs will turn ON. Any key operation on the main unit thereafter will return the LEDs to normal.

###### **Main unit key validity check**

- Whether the main unit's keys are operable (valid) can be checked. Regarding the keys whose display does not change when they are used, their display will be made to change.

#### 0~9, +10 key operation

- Preset display : "—" or "01" ~ "09"  
When "0" key is pressed, 10 ch is called.  
When "1" ~ "9" key is pressed, 1 ch ~ 9 ch is called.  
When "+10" key is pressed, "1-" is displayed.
- Preset display : "1 -" or "10" ~ "19"  
When "0" key is pressed, 20 ch is called.  
When "1" ~ "9" key is pressed, 11 ch ~ 19 ch is called.  
When "+10" key is pressed, "2 -" is displayed.
- Preset display : "2 -" or "20" ~ "29"  
When "0" key is pressed, 30 ch is called.  
When "1" ~ "9" key is pressed, 21 ch ~ 29 ch is called.  
When "+10" key is pressed, "3 -" is displayed.
- Preset display : "3 -" or "30" ~ "39"  
When "0" key is pressed, 40 ch is called.  
When "1" ~ "9" key is pressed, 31 ch ~ 39 ch is called.  
When "+10" key is pressed, "0 -" is displayed.

###### **MUTE signal output**

- The MUTE signal is not output.

###### **No Display for FL**

- Press the DISPLAY key to turn on/off the segments of the FL.

###### **Slide Switch Check**

- The FL shows the Serial Code(XS8/SL16) by pressing the MEMORY key.
- The FL shows the Channel Space(100kHz/50kHz) by pressing the CH. SPACE key.

- The FL shows the normal mode by pressing the key and the switch except the MEMORY and the Slide switch.

##### **Display ex.**

|              |               |
|--------------|---------------|
| Serial Code  | Channel Space |
| XS8(or SL16) | 100(or 50)    |

#### 1-2. Test mode with serial communications

Refer to the test mode serial code table.

##### a) Setting procedure

- Plug the AC power cord and enter the TEST ON code.  
8 bit serial communications : 71H  
16 bit serial communications : 0C2FFH

##### b) Cancellation

- Enter the TEST OFF code (0CFEH) or unplug the AC power cord.

##### c) Description

###### **Other operations during the serial test mode**

- The main unit's keys will be effective.
- The serial test code can be received even within 1 second of POWER ON / OFF.

###### **Required operations for the serial test mode**

- The serial code for the serial test mode can be used to check the operation of all circuits.
- The code entered during the serial test mode will become valid regardless of the display mode.
- The following functions are available in the serial test mode.  
0 ~ 9, +10  
AUTO (AUTO ST. / HI BLEND / MONO)  
MEMORY  
UP / DOWN (MANUAL SCAN unnecessary)  
IF BAND, RF ATT  
ACTIVE RECEPTION  
ANTENNA A, ANTENNA B, PTY, DISPLAY, ALL LED ON/OFF
- The MUTE signal is not output. This is for reducing the input-output switching time during the measurement.
- When a valid serial code for the test mode is received, the code identical to the code entered will be output.
- For checking the MUTE operation, MUTE has specific codes.

MUTE ON/OFF

- To switch cyclically, enter the individual serial code. For example for AUTO STEREO / MONO, enter the two codes for AUTO STEREO and MONO.
- All the LEDs, turn ON / OFF is cancelled by inputting the cancelling code and returned the LEDs to normal.
- All functions (including the test mode) will be initialized.

## CIRCUIT DESCRIPTION

**1-3. Initial settings****a) Setting procedure**

- If the unit has a back-up function, hold down the POWER key and plug the AC power cord.
- During the test mode with the main unit keys and the test mode with serial communications, the initial settings can be obtained by unplug and plug the AC power cord.

**b) Description**

- All function (including test mode) will be initialized.
- The manufacturer's memory is always set in the preset CH and area.

**1-4. POWER ON startup**

- Since the unit has a POWER key, no setting is required.

**1-5. Initial status**

|                      |                                               |
|----------------------|-----------------------------------------------|
| POWER ON/OFF         | : OFF                                         |
| TUNING MODE          | : AUTO                                        |
| PRESET MEMORY        | : TEST FREQUENCY                              |
| LAST BAND            | : FM                                          |
| FM LAST FREQUENCY    | : OVERSEAS 87.5MHz<br>/JAPAN 76.0MHz          |
| AM.MW LAST FREQUENCY | : CH SPACE 9K 531kHz<br>: CH SPACE 10K 530kHz |
| LW LAST FREQUENCY    | : 153kHz                                      |
| LAST P.ch            | : [-ch]                                       |

|                      |                             |
|----------------------|-----------------------------|
| RDS DISPLAY MODE     | : FREQUENCY DISPLAY<br>MODE |
| TA / NEWS / TA, NEWS | : OFF                       |
| ACTIVE RECEPTION     | : OFF                       |
| ANT A/B              | : A                         |
| IF BAND              | : WIDE                      |
| RF ATT               | : OFF                       |
| SERIAL               | : XS8                       |

**1-6. Back-up status**

|                        |
|------------------------|
| POWER ON/OFF           |
| TUNING MODE            |
| PRESET MEMORY 1~40ch   |
| LAST BAND              |
| LAST P.ch              |
| LAST FM FREQUENCY      |
| LAST AM (MW) FREQUENCY |
| RDS AUTO MEMORY LIST   |
| LAST LW FREQUENCY      |
| ACTIVE RECEPTION       |
| ANT A/B**              |
| IF BAND**              |
| RF ATT**               |
| TA / NEWS / TA, NEWS*  |
| PS STATION NAME*       |

\* : E, T type

\*\* : KTF-3010

**1-7. 16-bit serial test code (C2XXH)**

|   | 8                    | 9           | A         | .... | F                |
|---|----------------------|-------------|-----------|------|------------------|
| 0 | POWER OFF            | 0           | MEMORY    |      |                  |
| 1 | POWER ON             | 1           |           |      |                  |
| 2 | MUTE OFF             | 2           |           |      |                  |
| 3 | MUTE ON              | 3           |           |      |                  |
| 4 | AUTO STEREO          | 4           |           |      |                  |
| 5 | MONO                 | 5           | PTY       |      |                  |
| 6 |                      | 6           | DISPLAY   |      |                  |
| 7 |                      | 7           | ANTENNA A |      |                  |
| 8 | Active reception OFF | 8           | ANTENNA B |      |                  |
| 9 | Active reception ON  | 9           |           |      | All LED goes OFF |
| A | RF ATT OFF           | +10         |           |      | All LED goes ON  |
| B | RF ATT ON            | BAND FM     |           |      | All LED ON : OFF |
| C | IF WIDE              | BAND AM/MW  |           |      | All LED ON : ON  |
| D |                      | BAND LW     | HI BLEND  |      | Initial setting  |
| E | IF NARROW            | TUNING DOWN |           |      | TEST OFF         |
| F |                      | TUNING UP   |           |      | TEST ON          |

: KTF-3010 ONLY

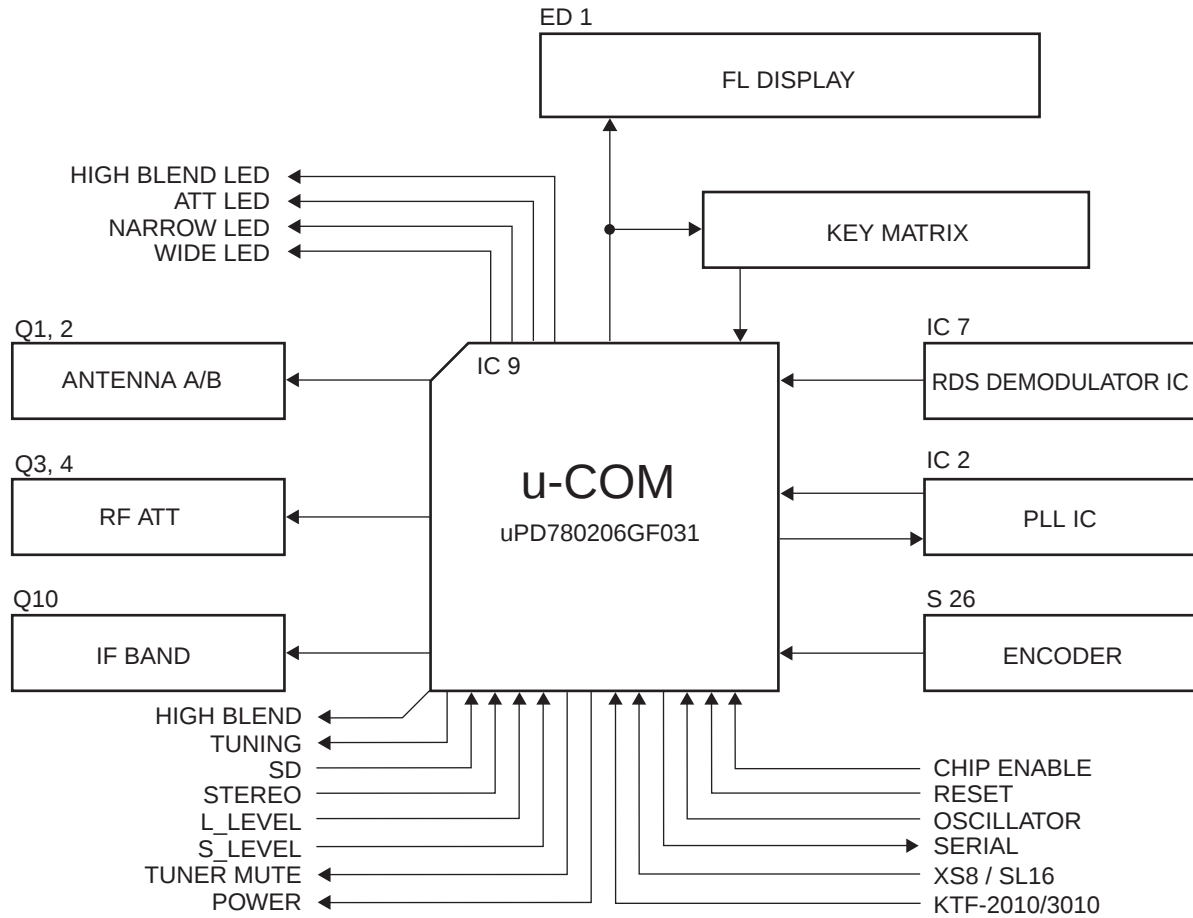
**Note :** Pls KT-2080/3080 service manual (B51-5128-00) on test frequency table and channel space table.

# KTF-2010/3010

## CIRCUIT DESCRIPTION

### 2. Microprocessor : $\mu$ PD780206GF031 (IC9)

#### 2-1. Pin connection



KEY MATRIX

|           | KR1 (#70)        | KR2 (#69)   | KR3 (#68)  | KR4 (#67) | KR5 (#66) | KR6 (#65)   |
|-----------|------------------|-------------|------------|-----------|-----------|-------------|
| KS1 (#82) | ANT A/B          | ON / STANBY | MEMORY     | 4         | 8         | P.CALL      |
| KS2 (#81) | ACTIVE RECEPTION | PTY         | 1          | 5         | 9         | BAND        |
| KS3 (#80) | RF ATT           | TA / NEWS   | 2          | 6         | 0         | +10         |
| KS4 (#78) | IF BAND          | DISPLAY     | 3          | 7         | -         | TUNING MODE |
| KS5 (#77) | DSW0 (D56)       | DSW1 (D57)  | DSW2 (D58) | -         | -         | -           |

 means KTF-3010 ONLY

## CIRCUIT DESCRIPTION

## 2-2 Pin function

| Pin No. | Pin Name       | I/O | Descriptions                                       |
|---------|----------------|-----|----------------------------------------------------|
| 1       | Vdd            | –   | Power supply(+5V)                                  |
| 2~8     | –              | I   | No use                                             |
| 9       | /CE            | I   | Chip enable L : CE detection                       |
| 10      | /RESET         | I   | Microprocessor reset L : RESET                     |
| 11,12   | X1,2           | I   | Main clock oscillator                              |
| 13      | IC(Vpp)        | –   | Connect to VSS                                     |
| 14,15   | XT1,2          | I   | –                                                  |
| 16      | Vdd            | –   | Power supply(+5V)                                  |
| 17,18   | –              | I   | No use                                             |
| 19      | SBUSY          | I/O | Serial busy signal                                 |
| 20      | SDATA          | I/O | Serial data signal                                 |
| 21      | /HIGH BLEND    | I   | Hi blend L : HIGH BLEND                            |
| 22      | 8/16           | O   | XS8/SL16 selector L : SL16                         |
| 23      | /2080,3080     | I   | model selector L : KTF–2010                        |
| 24      | POWER          | O   | POWER detection L : STANDBY                        |
| 25      | Avss           | –   | A/D converter gnd                                  |
| 26      | PLL_DO         | I   | PLL DO                                             |
| 27      | PLL_CE         | O   | PLL chip enable                                    |
| 28      | PLL_DATA       | O   | PLL data detection                                 |
| 29      | PLL_CLK        | O   | PLL clock                                          |
| 30      | /T_MUTE        | O   | TUNER mute L : MUTE ON                             |
| 31      | –              | I   | No use                                             |
| 32      | S_LEVEL        | I   | Signal level                                       |
| 33      | N_LEVEL        | I   | Noise level                                        |
| 34      | Avdd           | –   | A/D converter analog voltage                       |
| 35      | Avref          | –   | A/D converter standard voltage                     |
| 36      | RDS_CLK        | I   | RDS demodulator IC clock                           |
| 37      | RDS_DATA       | I   | RDS demodulator IC data                            |
| 38,39   | –              | I   | No use                                             |
| 40      | Vss            | –   | Gnd                                                |
| 41,42   | –              | I   | No use                                             |
| 43      | /STEREO        | I   | STEREO pilot detection                             |
| 44      | /SD            | I   | SD pilot detection                                 |
| 45      | TUNING         | O   | To stop noise level detection in tuning H : TUNING |
| 46      | Vdd            | –   | Power supply(+5V)                                  |
| 47~52   | –              | I   | No use                                             |
| 53      | /IF_BAND       | O   | IF BAND selector L : WIDE                          |
| 54      | /RF_ATT        | O   | RF_ATT selector L : ON                             |
| 55      | ANT_B          | O   | Antenna–B control H : ANT B                        |
| 56      | ANT_A          | O   | Antenna–A control H : ANT A                        |
| 57      | ENC_B          | I   | Encoder counterclockwise detection                 |
| 58      | ENC_A          | I   | Encoder clockwise detection                        |
| 59      | HIGH_BLEND_LED | O   | HIGH BLEND LED H : LED ON                          |
| 60      | WIDE_LED       | O   | WIDE LED H : LED ON                                |
| 61      | NARROW_LED     | O   | NARROW LED H : LED ON                              |
| 62      | ATT_LED        | O   | ATT LED H : LED ON                                 |
| 63,64   | –              | I   | No use                                             |
| 65~70   | KR6~1          | I   | Key return 6~1                                     |
| 71~73   | –              | O   | No use                                             |
| 74~76   | SEG16~14       | O   | FL segment output16~14                             |
| 77      | SEG13/KS5      | O   | FL segment output13/key scan5(TUNER selector)      |
| 78      | SEG12/KS4      | O   | FL segment output12/key scan4                      |
| 79      | Vload          | –   | FL controller/driver pull down resistor            |
| 80~82   | SEG11~9/KS3~1  | O   | FL segment output11~9/key scan3~1                  |
| 83~90   | SEG8~1         | O   | FL segment output8~1                               |
| 91~100  | GRID1~10       | O   | FL grid output1~10                                 |

## ADJUSTMENT

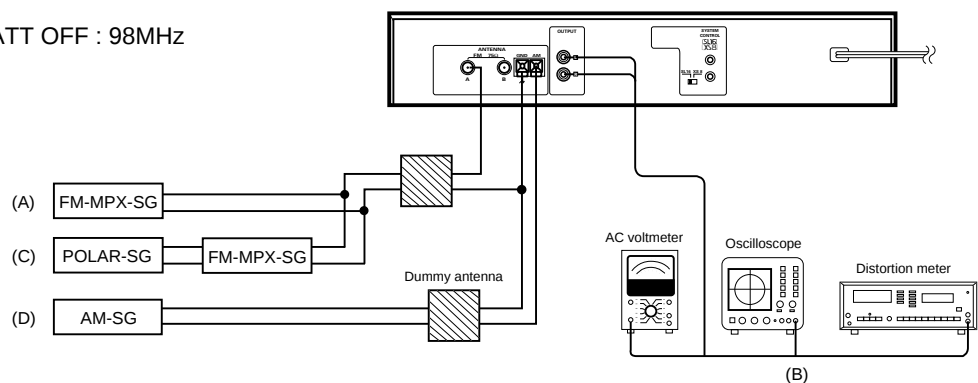
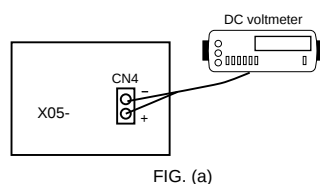
| NO.               | ITEM                                      | INPUT SETTINGS                                                                                       | OUTPUT SETTINGS                             | TUNER SETTINGS                         | ALIGNMENT POINTS | ALIGN FOR                                                                                                                                                     | FIG. |
|-------------------|-------------------------------------------|------------------------------------------------------------------------------------------------------|---------------------------------------------|----------------------------------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| <b>FM SECTION</b> |                                           | <b>BAND : FM</b>                                                                                     |                                             |                                        |                  |                                                                                                                                                               |      |
| 1.                | SENSITIVITY<br>(KTF-3010 ONLY)            | (A)<br>98MHz MONO<br>1kHz, $\pm 40$ kHz dev<br>Approx. 20dBf<br>(ANT input)                          | (B)                                         | AUTO : WIDE<br>RF ATT : OFF<br>98.0MHz | L1               | Maximum amplitude                                                                                                                                             |      |
| 2.                | DISCRIMINATOR                             | (A)<br>98.0 MHz MONO<br>1kHz, $\pm 40$ kHz dev<br>70dBf (ANT input)                                  | Connect a DC<br>voltmeter<br>(X05-) to CN4. | ✚                                      | L6               | 0V $\pm$ 30mV                                                                                                                                                 | (a)  |
| 3.                | DISTORTION                                | (A)<br>98MHz MONO<br>1kHz, $\pm 40$ kHz dev<br>70dBf (ANT input)                                     | (B)                                         | ✚                                      | L7               | Minimum distortion                                                                                                                                            |      |
| 4.                | DISTORTION<br>(STEREO)<br>(KTF-2010 ONLY) | (C)<br>98.0MHz 1kHz,<br>$\pm 68.25$ kHz dev<br>Selector : L or R<br>60dBf (ANT input)                | (B)                                         | AUTO<br>98.0MHz                        | A1(FRONT<br>END) | Minimum distortion                                                                                                                                            |      |
| 5.                | S.METER LEVEL                             | (A)<br>98MHz MONO<br>1KHz, $\pm 40$ kHz dev<br>36dBf (ANT input)                                     |                                             | ✚                                      | VR1<br>VR4       | Turn VR1 to fully<br>clockwise.<br>Adjust VR4 and<br>3 LEDs light on.<br> |      |
| 6.                | AUTO STOP LEVEL                           | (A)<br>98.0MHz MONO<br>1kHz, $\pm 40$ kHz dev<br>25dBf (ANT input)                                   |                                             | ✚                                      | VR1              | Adjust VR1 and stop<br>at the point where<br>ED1 (TUNED)<br>goes ON.                                                                                          |      |
| 7.                | SEPARATION                                | (A)<br>98.0MHz 1kHz,<br>$\pm 40$ kHz dev<br>pilot 6kHz dev<br>Selector : L or R<br>70dBf (ANT input) | (B)                                         | ✚                                      | VR3              | Minimum crosstalk                                                                                                                                             |      |
| <b>AM SECTION</b> |                                           | <b>BAND : AM(MW)</b>                                                                                 |                                             |                                        |                  |                                                                                                                                                               |      |
| 1                 | AUTO STOP LEVEL                           | (D)<br>999kHz MONO<br>400Hz, 30% mod<br>28dB $\mu$ (ANT input)                                       |                                             | 999 kHz                                | VR2              | Adjust VR2 and stop<br>at the point where<br>ED1 (TUNED)<br>goes ON.                                                                                          |      |

**When TUNER PCB (X05-) is disconnected from main unit, connect PCB's GND (ANT shield plate) and main unit chassis using aligator clip. Then, check TUNER PCB.**

### ✚ TUNER SETTINGS

**KTF-2010** : AUTO, 98.0MHz

**KTF-3010** : AUTO : WIDE, RF ATT OFF : 98MHz

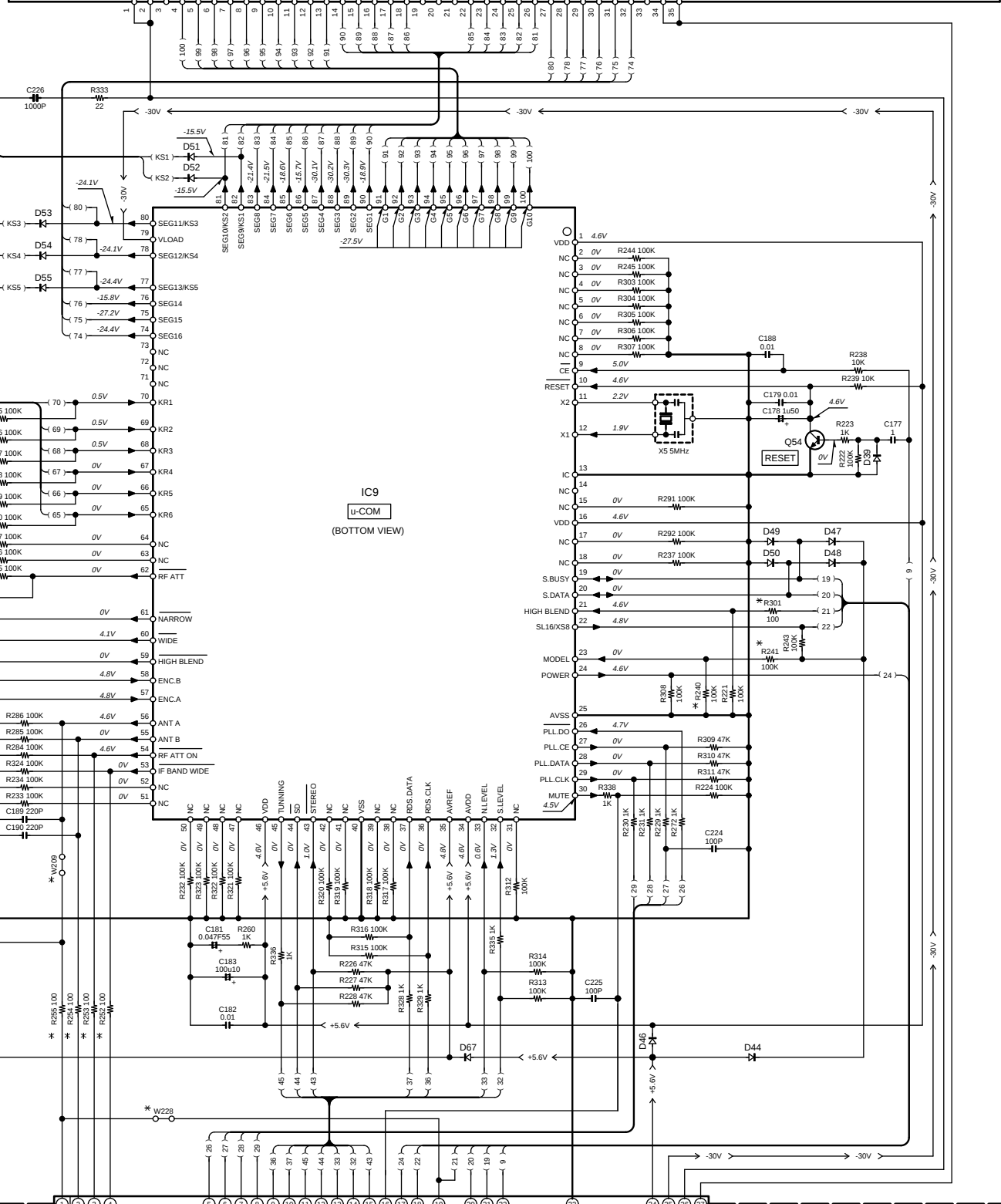
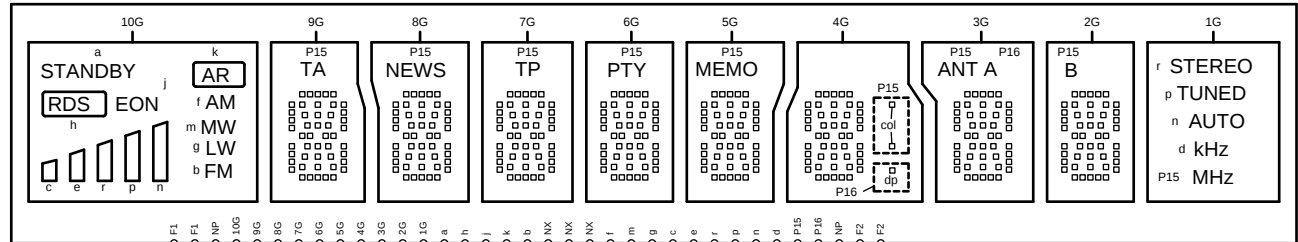




|                 |                                    |                                                        |                              |        |                                 |      |         |                              |           |           |
|-----------------|------------------------------------|--------------------------------------------------------|------------------------------|--------|---------------------------------|------|---------|------------------------------|-----------|-----------|
| Q24             | : 2SA954(L,K)                      | D1-3                                                   | : 1SS268                     | D36.64 | : RD5.1JS(B2) or<br>HZ55.1S(B2) | MODE | CARRIER | MODULATION                   |           | ANT INPUT |
| Q29             | : 2SK246(Y,GR)                     | D4                                                     | : SVC212(2,3)                |        |                                 |      |         | FREQUENCY                    | DEVIATION |           |
| Q30,31,42,55,56 | : 2SA933AS(Q,R) or<br>2SA1175(F,E) | D5-10,12-19,23,24,27,28,30,<br>32-35,37,38,40-43,60,65 | : 1SS133 or<br>HSS104A       | FM     | 98MHz                           |      | 1kHz    | STEREO 67.5kHz 7.5kHz(Pilot) | 60dB      |           |
| Q36,37,57,60    | : 2SK364(GR,BL)                    | D11                                                    | : MA111                      | AM     | 1000(999)kHz                    |      | 400Hz   | MONO 30% MOD                 | 60dB      |           |
| Q46             | : 2SA1534A(R,S)                    | D25,26                                                 | : S5688B                     |        |                                 |      |         |                              |           |           |
| Q47             | : 2SD2061E(F,E)                    | D31                                                    | : MTZJ11(B) or<br>HZS11N(B2) |        |                                 |      |         |                              |           |           |
| Q49,51,52       | : 2SC3940A(R,S)                    |                                                        |                              |        |                                 |      |         |                              |           |           |

(X05-484X-XX) (B/4)

ED1



CN3

IC9 : UPD780206GF031

Q54 : 2SD1819A(Q,R) or 2SC4081(R,S)

Q58 : DTA124ESA or UN4112

D39,44,47-50,67 : MA111

D46,51-59 : 1SS133 or HSS104A

D61-63,66 : B30-2493-05

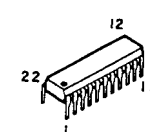
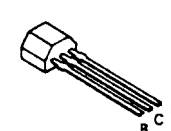
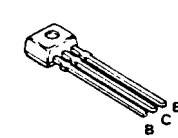
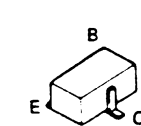
ED1 : 10-BT-202GX

KTF-2010 (X05-484X-XX)

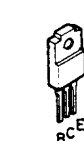
| DESTINATION    | COUNTRY | ABB. | UNIT NAME | R240 | R241,249-254, 273,301 | R255 | D56 | D57 | D58 | D59 | D61-63, 66 | W162, 210,228 | W181-184,209 223-226 | C230- 232 | S3-6 | S8-9 | Q58 |
|----------------|---------|------|-----------|------|-----------------------|------|-----|-----|-----|-----|------------|---------------|----------------------|-----------|------|------|-----|
| EUROPE         | E       | 2-70 |           |      | NO                    | NO   | YES | NO  | YES | NO  | NO         | NO            | NO                   | YES       | NO   | YES  | NO  |
| U.K.           | T       | 0-51 |           |      | NO                    | NO   | NO  | YES | NO  | NO  | NO         | NO            | NO                   | NO        | NO   | NO   | NO  |
| AUSTRALIA      | X       | 0-71 |           |      | YES                   | YES  | NO  | NO  | YES | NO  | NO         | YES           | NO                   | NO        | NO   | NO   | YES |
| GENERAL MARKET | M       | 0-21 |           |      |                       |      | YES | YES | NO  | YES |            |               |                      |           |      |      |     |

KTF-3010 (X05-484X-XX)

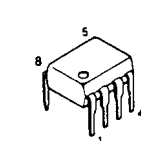
| DESTINATION | COUNTRY | ABB. | UNIT NAME | R240 | R241,249-255, 273,301 | D56 | D57 | D58, 61-63,66 | D59 | W162, 210,228 | W181-184,209 223-226 | C230- 232 | S3-6 | S8-9 | Q58 |
|-------------|---------|------|-----------|------|-----------------------|-----|-----|---------------|-----|---------------|----------------------|-----------|------|------|-----|
| EUROPE      | E       | 2-71 |           |      | YES                   | NO  | YES | NO            | NO  | NO            | NO                   | NO        | YES  | YES  | NO  |
| U.K.        | T       | 0-52 |           | NO   | YES                   | NO  | NO  | YES           | NO  | NO            | YES                  | NO        | YES  | YES  | NO  |
| JAPAN       | J       | 0-01 |           |      |                       | YES | YES | YES           | YES |               |                      |           |      |      |     |

X05-A/4  
-CN21/2  
ALA3401  
LC72131DTA124ESA  
DTC124ESA  
UN4112  
2SC1740S2SA1175  
2SC27852SB1218A  
2SC4081  
2SD1819A

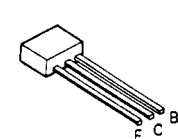
2SD2061



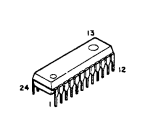
NJM4565D-D



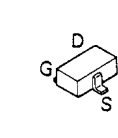
UN4212



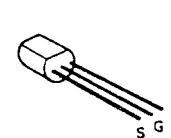
LA1266



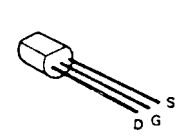
2SK302



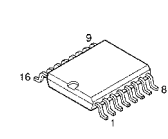
2SK246



2SK364



SAA6579T/R



CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list).  $\Delta$  indicates safety critical components. For continued protection against risk of fire, replace only with same type and rating fuse(s). To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

The DC voltage is an actual reading measured with a high impedance type voltmeter as the AM/FM signal generator is specified to the conditions as shown in the list below. The measurement value may vary depending on the measuring instruments used or on the product. The value shown in ( ) is actual reading measured in the AM made.

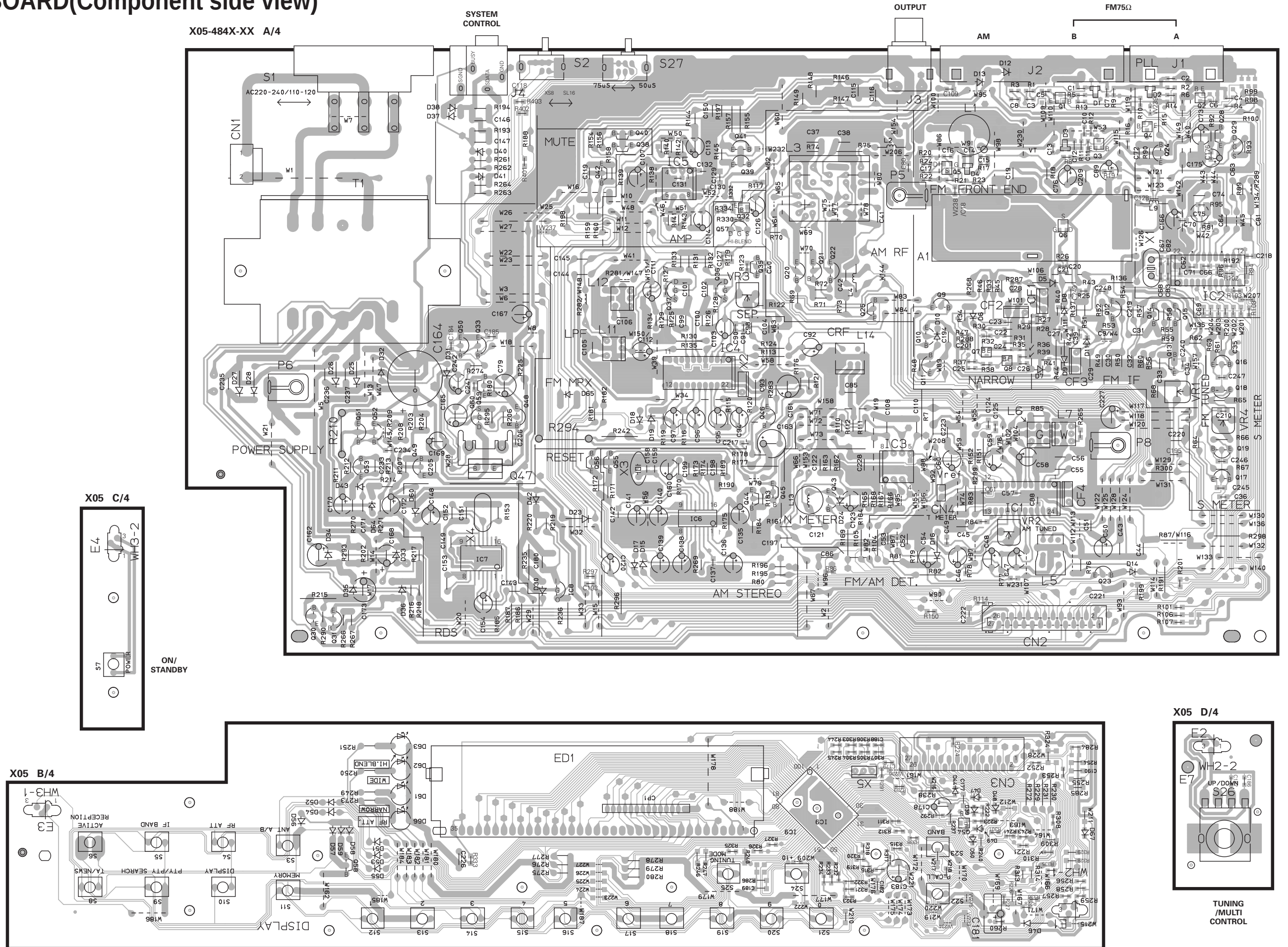
KTF-2010/3010(K) (2/2)

Y07-3842-70

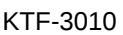
KTF-2010/3010

KENWOOD

### PC BOARD(Component side view)



Refer to the schematic diagram for the value of resistors and capacitors.



17

\* New Parts

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①

| Ref. No                                                   | Add-ress | New Parts | Parts No.   | Description                   | Desti-nation | Re-marks |
|-----------------------------------------------------------|----------|-----------|-------------|-------------------------------|--------------|----------|
| <b>KTF-2010/3010 (KTF2010: E,M1,X1,T1/KTF3010: E1,T2)</b> |          |           |             |                               |              |          |
| 601                                                       | 1A       | *         | A01-3559-01 | METALLIC CABINET              |              |          |
| 603                                                       | 2B       | *         | A22-1793-01 | SUB PANEL                     |              |          |
| 604                                                       | 2A       | *         | A60-1336-02 | PANEL                         | ET1          |          |
| 604                                                       | 2A       | *         | A60-1356-02 | PANEL                         | M1X1         |          |
| 604                                                       | 2A       | *         | A60-1357-02 | PANEL                         | E1T2         |          |
| 610                                                       | 2A       | *         | B10-2429-03 | FRONT GLASS                   | ET1          |          |
| 610                                                       | 2A       | *         | B10-2449-03 | FRONT GLASS                   | E1T2         |          |
| 610                                                       | 2A       | *         | B10-2454-03 | FRONT GLASS                   | M1X1         |          |
| 611                                                       | 2A       | *         | B11-0360-04 | COLOR FILTER                  | EM1X1        |          |
| 611                                                       | 2A       | *         | B11-0360-04 | COLOR FILTER                  | T1           |          |
| 611                                                       | 2A       | *         | B11-0364-04 | COLOR FILTER                  | E1T2         |          |
| 612                                                       | 2A       | *         | B43-0302-04 | KENWOOD BADGE                 |              |          |
| -                                                         |          |           | B46-0096-53 | WARRANTY CARD                 | X1           |          |
| -                                                         |          |           | B46-0310-03 | WARRANTY CARD                 | E1T1         |          |
| -                                                         |          |           | B46-0310-03 | WARRANTY CARD                 | T2           |          |
| -                                                         |          |           | B58-0945-03 | CAUTION CARD                  | T1T2         |          |
| -                                                         |          |           | B58-0965-13 | CAUTION CARD (PL)             | X1T1T2       |          |
| -                                                         |          |           | B58-0966-13 | CAUTION CARD (PL)             | EM1E1        |          |
| -                                                         |          | *         | B60-3700-00 | INSTRUCTION MANUAL(F,G,N,I)   | EE1          |          |
| -                                                         |          | *         | B60-3701-00 | INSTRUCTION MANUAL(ENG)       | M1X1         |          |
| -                                                         |          | *         | B60-3702-00 | INSTRUCTION MANUAL(SP,TW)     | M1           |          |
| -                                                         |          | *         | B60-3703-00 | INSTRUCTION MANUAL(ENG)       | T1T2         |          |
| △ 615                                                     | 1A       |           | E03-0115-05 | AC PLUG ADAPTER               | M1           |          |
| △ 616                                                     | 1A       |           | E30-0505-05 | AUDIO CORD                    |              |          |
| △ 617                                                     | 1C       |           | E30-2592-15 | AC POWER CORD                 | EM1E1        |          |
| △ 617                                                     | 1C       |           | E30-2717-05 | AC POWER CORD                 | X1           |          |
| △ 617                                                     | 1C       |           | E30-2721-05 | AC POWER CORD                 | T1T2         |          |
| 618                                                       | 1A       |           | E30-2733-05 | CORD WITH PLUG                |              |          |
| 619                                                       | 1B       |           | E35-1218-05 | FLAT CABLE                    |              |          |
| -                                                         |          |           | G11-0155-14 | SOFT TAPE (40X9X2)            |              |          |
| -                                                         |          | *         | H10-7437-02 | POLYSTYRENE FOAMED FIXTURE    |              |          |
| -                                                         |          | *         | H10-7438-02 | POLYSTYRENE FOAMED FIXTURE    |              |          |
| -                                                         |          | *         | H12-2389-04 | PACKING FIXTURE               | T1T2         |          |
| -                                                         |          | *         | H25-0225-04 | PROTECTION BAG (850X450X0.03) | EM1X1        |          |
| -                                                         |          | *         | H25-0225-04 | PROTECTION BAG (850X450X0.03) | E1           |          |
| -                                                         |          | *         | H25-0232-04 | PROTECTION BAG (235X350X0.03) | EM1X1        |          |
| -                                                         |          | *         | H25-0232-04 | PROTECTION BAG (235X350X0.03) | E1           |          |
| -                                                         |          | *         | H25-0651-04 | PROTECTION BAG                | T1T2         |          |
| -                                                         |          | *         | H25-0654-04 | PROTECTION BAG                | T1T2         |          |
| -                                                         |          | *         | H50-2790-04 | ITEM CARTON CASE              | EX1          |          |
| -                                                         |          | *         | H50-2791-04 | ITEM CARTON CASE              | T1           |          |
| -                                                         |          | *         | H50-2792-04 | ITEM CARTON CASE              | M1           |          |
| -                                                         |          | *         | H50-2793-04 | ITEM CARTON CASE              | E1           |          |
| -                                                         |          | *         | H50-2794-04 | ITEM CARTON CASE              | T2           |          |
| △ 625                                                     | 2C       | *         | J02-1407-03 | FOOT (D=46,H=14.5,T)          |              |          |
| 626                                                       | 1C       |           | J19-3752-14 | UNIT HOLDER                   |              |          |
| 627                                                       | 1C       |           | J42-0083-05 | POWER CORD BUSHING            |              |          |
| -                                                         |          |           | J61-0307-05 | WIRE BAND                     |              |          |
| 630                                                       | 2B       | *         | K29-6882-03 | KNOB                          | EM1X1        |          |
| 630                                                       | 2B       | *         | K29-6882-03 | KNOB                          | T1           |          |
| 630                                                       | 2B       | *         | K29-6928-03 | KNOB                          | E1T2         |          |
| 631                                                       | 2A       | *         | K29-6883-04 | KNOB TUNE                     |              |          |

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②

| Ref. No                    | Add-ress | New Parts | Parts No.     | Description       | Desti-nation | Re-marks |
|----------------------------|----------|-----------|---------------|-------------------|--------------|----------|
| 640                        | 1A       |           | T90-0195-05   | LOOP ANTENNA      |              |          |
| 641                        | 1A       |           | T90-0809-05   | LEAD WIRE ANTENNA |              |          |
| <b>TUNER (X05-4842-70)</b> |          |           |               |                   |              |          |
| D61 -63                    |          |           | B30-2493-05   | LED(RED)          | E1T2         |          |
| D66                        |          |           | B30-2493-05   | LED(RED)          | E1T2         |          |
| C1 -8                      |          |           | CK73FB1H102K  | CHIP C            | 1000PF       | K        |
| C9                         |          |           | CK45FF1H103Z  | CERAMIC           | 0.010UF      | Z        |
| C9                         |          |           | CK45FF1H103Z  | CERAMIC           | 0.010UF      | Z        |
| C10 ,11                    |          |           | CK73FB1H102K  | CHIP C            | 1000PF       | K        |
| C12                        |          |           | CC73FSL1H010C | CHIP C            | 1.0PF        | C        |
| C13                        |          |           | CC73FSL1H391J | CHIP C            | 390PF        | J        |
| C14                        |          |           | CC73FSL1H050C | CHIP C            | 5.0PF        | C        |
| C15                        |          |           | CK73FB1H102K  | CHIP C            | 1000PF       | K        |
| C16                        |          |           | CC73FSL1H470J | CHIP C            | 47PF         | J        |
| C17                        |          |           | CK73FB1H102K  | CHIP C            | 1000PF       | K        |
| C19                        |          |           | CK45FSL1H331J | CERAMIC           | 330PF        | J        |
| C20 -28                    |          |           | CK73FB1H103K  | CHIP C            | 0.010UF      | K        |
| C29 -31                    |          |           | CK45FF1H103Z  | CERAMIC           | 0.010UF      | Z        |
| C32                        |          |           | CK45FF1H473Z  | CERAMIC           | 0.047UF      | Z        |
| C33                        |          |           | CK45FF1H103Z  | CERAMIC           | 0.010UF      | Z        |
| C34                        |          |           | CK73FB1H103K  | CHIP C            | 0.010UF      | K        |
| C35                        |          |           | CK45FF1H103Z  | CERAMIC           | 0.010UF      | Z        |
| C36                        |          |           | CK73FB1H103K  | CHIP C            | 0.010UF      | K        |
| C37                        |          |           | CC45FSL1H150J | CERAMIC           | 15PF         | J        |
| C38                        |          |           | CK45FF1H473Z  | CERAMIC           | 0.047UF      | Z        |
| C39                        |          |           | CK73FB1H103K  | CHIP C            | 0.010UF      | K        |
| C39                        |          |           | CK73FB1H103K  | CHIP C            | 0.010UF      | K        |
| C40                        |          |           | CK73FF1H223Z  | CHIP C            | 0.022UF      | Z        |
| C41                        |          |           | CC45FSL1H060D | CERAMIC           | 6.0PF        | D        |
| C42                        |          |           | CC45FSL1H020C | CERAMIC           | 2.0PF        | C        |
| C43                        |          |           | CC45FSL1H220J | CERAMIC           | 22PF         | J        |
| C44                        |          |           | CC45FSL1H330J | CERAMIC           | 33PF         | J        |
| C45                        |          |           | CK45FF1H473Z  | CERAMIC           | 0.047UF      | Z        |
| C46                        |          |           | CE04KW1V4R7M  | ELECTRO           | 4.7UF        | 35WV     |
| C47                        |          |           | CE04KW1H2R2M  | ELECTRO           | 2.2UF        | 50WV     |
| C48                        |          |           | CE04KW1H3R3M  | ELECTRO           | 3.3UF        | 50WV     |
| C49                        |          |           | CK73FF1H473Z  | CHIP C            | 0.047UF      | Z        |
| C50                        |          |           | CE04KW1H2R2M  | ELECTRO           | 2.2UF        | 50WV     |
| C51                        |          |           | CK45FF1H103Z  | CERAMIC           | 0.010UF      | Z        |
| C52                        |          |           | CK45FB1H561K  | CERAMIC           | 560PF        | K        |
| C52                        |          |           | CK45FF1H472Z  | CERAMIC           | 4700PF       | Z        |
| C52                        |          |           | CK45FF1H472Z  | CERAMIC           | 4700PF       | Z        |
| C53                        |          |           | CK45FF1H473Z  | CERAMIC           | 0.047UF      | Z        |
| C54                        |          |           | CE04KW1HR22M  | ELECTRO           | 0.22UF       | 50WV     |
| C55 ,56                    |          |           | CK45FF1H223Z  | CERAMIC           | 0.022UF      | Z        |
| C57                        |          |           | CK73FB1H103K  | CHIP C            | 0.010UF      | K        |
| C58                        |          |           | CE04KW1C470M  | ELECTRO           | 47UF         | 16WV     |
| C59                        |          |           | CE04KW1H0R1M  | ELECTRO           | 0.1UF        | 50WV     |
| C60                        |          |           | CE04KW1HR47M  | ELECTRO           | 0.47UF       | 50WV     |
| C61                        |          |           | CC73FSL1H100D | CHIP C            | 10PF         | D        |
| C62                        |          |           | CK73FB1H103K  | CHIP C            | 0.010UF      | K        |
| C63                        |          |           | CC45FSL1H101J | CERAMIC           | 100PF        | J        |
| C64                        |          |           | CC45FSL1H180J | CERAMIC           | 18PF         | J        |
| C65                        |          |           | CK45FF1H103Z  | CERAMIC           | 0.010UF      | Z        |

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| Ref. No  | Add-ress | New Parts | Parts No.     | Description         | Desti-nation | Re-marks |
|----------|----------|-----------|---------------|---------------------|--------------|----------|
| C66      |          |           | CK73FB1H103K  | CHIP C 0.010UF K    |              |          |
| C67      |          |           | CC73FCH1H150J | CHIP C 15PF J       |              |          |
| C68      |          |           | CC73FCH1H120J | CHIP C 12PF J       |              |          |
| C69      |          |           | CC73FSL1H221J | CHIP C 220PF J      |              |          |
| C70      |          |           | CC73FSL1H331J | CHIP C 330PF J      |              |          |
| C71      |          |           | CC73FSL1H101J | CHIP C 100PF J      |              |          |
| C72      |          |           | CC45FSL1H101J | CERAMIC 100PF J     |              |          |
| C73      |          |           | CE04KW1C470M  | ELECTRO 47UF 16WV   |              |          |
| C74      |          |           | CQ93FMG1H223J | MYLAR 0.022UF J     |              |          |
| C75      |          |           | CE04HW1H2R2M  | NP-ELEC 2.2UF 50WV  |              |          |
| C76      |          |           | CE04KW1HR47M  | ELECTRO 0.47UF 50WV |              |          |
| C80      |          |           | CC73FSL1H331J | CHIP C 330PF J      | M1X1         |          |
| C81      |          |           | CC45FSL1H330J | CERAMIC 33PF J      |              |          |
| C82      |          |           | CC73FCH1H120J | CHIP C 12PF J       |              |          |
| C83      |          |           | CC73FCH1H100D | CHIP C 10PF D       |              |          |
| C85      |          |           | CK45FB1H102K  | CERAMIC 1000PF K    |              |          |
| C86      |          |           | CK45FF1H103Z  | CERAMIC 0.010UF Z   |              |          |
| C88      |          |           | CC73FCH1H220J | CHIP C 22PF J       |              |          |
| C89      |          |           | CE04KW1V100M  | ELECTRO 10UF 35WV   |              |          |
| C90      |          |           | CC73FSL1H101J | CHIP C 100PF J      | ET1E1        |          |
| C90      |          |           | CC73FSL1H101J | CHIP C 100PF J      | T2           |          |
| C91      |          |           | CK73FB1H122K  | CHIP C 1200PF K     |              |          |
| C92      |          |           | CE04KW1V4R7M  | ELECTRO 4.7UF 35WV  |              |          |
| C93      |          |           | CK45FF1H103Z  | CERAMIC 0.010UF Z   |              |          |
| C94      |          |           | CE04KW1H010M  | ELECTRO 1.0UF 50WV  |              |          |
| C95      |          |           | CE04KW1HR22M  | ELECTRO 0.22UF 50WV |              |          |
| C96 ,97  |          |           | CE04KW1H010M  | ELECTRO 1.0UF 50WV  |              |          |
| C98      |          |           | CQ93FMG1H104J | MYLAR 0.10UF J      |              |          |
| C99 ,100 |          |           | CQ93FMG1H681J | MYLAR 680PF J       |              |          |
| C101,102 |          |           | CC45FSL1H331J | CERAMIC 330PF J     | M1           |          |
| C103     |          |           | CE04KW1V100M  | ELECTRO 10UF 35WV   |              |          |
| C104     |          |           | CK45FB1H561K  | CERAMIC 560PF K     |              |          |
| C105,106 |          |           | CQ93FMG1H682J | MYLAR 6800PF J      |              |          |
| C107     |          |           | CE04KW1C470M  | ELECTRO 47UF 16WV   | E1T2         |          |
| C108     |          |           | CC45FSL1H101J | CERAMIC 100PF J     |              |          |
| C109     |          |           | CC73FSL1H331J | CHIP C 330PF J      | E1T2         |          |
| C110     |          |           | CC45FSL1H101J | CERAMIC 100PF J     |              |          |
| C111,112 |          |           | CE04KW1V100M  | ELECTRO 10UF 35WV   | EM1X1        |          |
| C111,112 |          |           | CE04KW1V100M  | ELECTRO 10UF 35WV   | T1           |          |
| C113,114 |          |           | CE04KW1V100M  | ELECTRO 10UF 35WV   | E1T2         |          |
| C115,116 |          |           | CK45FB1H391K  | CERAMIC 390PF K     |              |          |
| C119     |          |           | CK45FF1H103Z  | CERAMIC 0.010UF Z   |              |          |
| C120     |          |           | CE04KW2A010M  | ELECTRO 1.0UF 100WV |              |          |
| C121     |          |           | CK45FB1H471K  | CERAMIC 470PF K     | E1T2         |          |
| C122     |          |           | CQ93FMG1H104J | MYLAR 0.10UF J      | E1T2         |          |
| C123     |          |           | CE04KW1H0R1M  | ELECTRO 0.1UF 50WV  | E1T2         |          |
| C124,125 |          |           | CC73FSL1H101J | CHIP C 100PF J      |              |          |
| C126     |          |           | CE04KW1H010M  | ELECTRO 1.0UF 50WV  | E1T2         |          |
| C127     |          |           | CK73FF1H223Z  | CHIP C 0.022UF Z    | E1T2         |          |
| C128     |          |           | CC73FSL1H101J | CHIP C 100PF J      |              |          |
| C129     |          |           | CC73ESL1H101J | CHIP C 100PF J      | E1T2         |          |
| C130-132 |          |           | CC73FSL1H101J | CHIP C 100PF J      | E1T2         |          |
| C143     |          |           | CC45FSL1H271J | CERAMIC 270PF J     | ET1E1        |          |
| C143     |          |           | CC45FSL1H271J | CERAMIC 270PF J     | T2           |          |
| C146,147 |          |           | CC45FSL1H221J | CERAMIC 220PF J     |              |          |

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④

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|----------|----------|-----------|---------------|-----------------------|--------------|----------|
| C148     |          |           | CE04KW1A101M  | ELECTRO 100UF 10WV    | ET1E1        |          |
| C148     |          |           | CE04KW1A101M  | ELECTRO 100UF 10WV    | T2           |          |
| C149     |          |           | CK45FF1H103Z  | CERAMIC 0.010UF Z     | ET1E1        |          |
| C149     |          |           | CK45FF1H103Z  | CERAMIC 0.010UF Z     | T2           |          |
| C150     |          |           | CF92FV1H474J  | MF-C 0.47UF J         | T2           |          |
| C151     |          |           | CC45FCH1H470J | CERAMIC 47PF J        | ET1E1        |          |
| C151     |          |           | CC45FCH1H470J | CERAMIC 47PF J        | T2           |          |
| C152     |          |           | CC45FCH1H220J | CERAMIC 22PF J        | ET1E1        |          |
| C152     |          |           | CC45FCH1H220J | CERAMIC 22PF J        | T2           |          |
| C153     |          |           | CC45FSL1H561J | CERAMIC 560PF J       | ET1E1        |          |
| C153     |          |           | CC45FSL1H561J | CERAMIC 560PF J       | T2           |          |
| C154     |          |           | CE04KW1H2R2M  | ELECTRO 2.2UF 50WV    | ET1E1        |          |
| C154     |          |           | CE04KW1H2R2M  | ELECTRO 2.2UF 50WV    | T2           |          |
| C161     |          |           | CE04KW1C470M  | ELECTRO 47UF 16WV     |              |          |
| C162     |          |           | CE04KW1H470M  | ELECTRO 47UF 50WV     |              |          |
| C163     |          |           | CE04KW1C221M  | ELECTRO 220UF 16WV    |              |          |
| C164     |          |           | CE04KW1E222M  | ELECTRO 2200UF 25WV   |              |          |
| C165     |          |           | CE04KW1C101M  | ELECTRO 100UF 16WV    |              |          |
| C166,167 |          |           | CE04KW1V100M  | ELECTRO 10UF 35WV     |              |          |
| C168     |          |           | CE04KW1V4R7M  | ELECTRO 4.7UF 35WV    |              |          |
| C169     |          |           | CE04KW1A101M  | ELECTRO 100UF 10WV    |              |          |
| C170     |          |           | CE04KW1C220M  | ELECTRO 22UF 16WV     |              |          |
| C171     |          |           | CK45FB1H102K  | CERAMIC 1000PF K      |              |          |
| C172     |          |           | CE04KW1C220M  | ELECTRO 22UF 16WV     |              |          |
| C173     |          |           | CE04KW1H470M  | ELECTRO 47UF 50WV     |              |          |
| C175     |          |           | CE04KW1C470M  | ELECTRO 47UF 16WV     |              |          |
| C176     |          |           | CC73FSL1H101J | CHIP C 100PF J        |              |          |
| C177     |          |           | CK73EF1C105Z  | CHIP C 1.0UF Z        |              |          |
| C178     |          |           | C90-3253-05   | ELECTRO 1.0UF 50WV    |              |          |
| C179     |          |           | CK73FB1H103K  | CHIP C 0.010UF K      |              |          |
| C180     |          |           | CK45FF1H103Z  | CERAMIC 0.010UF Z     |              |          |
| C181     |          |           | C90-1826-05   | BACKUP-C 0.047F 5.5WV |              |          |
| C182     |          |           | CK73EB1H103K  | CHIP C 0.010UF K      |              |          |
| C183     |          |           | CE04KW1A101M  | ELECTRO 100UF 10WV    |              |          |
| C184,185 |          |           | CC73FSL1H101J | CHIP C 100PF J        |              |          |
| C186,187 |          |           | CC73FSL1H391J | CHIP C 390PF J        |              |          |
| C188     |          |           | CK73FB1H103K  | CHIP C 0.010UF K      |              |          |
| C189,190 |          |           | CC73ESL1H221J | CHIP C 220PF J        |              |          |
| C194     |          |           | CK45FF1H103Z  | CERAMIC 0.010UF Z     | E1T2         |          |
| C201     |          |           | CK73FB1H103K  | CHIP C 0.010UF K      | E1T2         |          |
| C205     |          |           | CC45FSL1H101J | CERAMIC 100PF J       |              |          |
| C206     |          |           | CC73FSL1H101J | CHIP C 100PF J        |              |          |
| C209     |          |           | CQ93FMG1H102J | MYLAR 1000PF J        |              |          |
| C210     |          |           | CC73FSL1H101J | CHIP C 100PF J        |              |          |
| C217     |          |           | CC73FSL1H101J | CHIP C 100PF J        |              |          |
| C218     |          |           | CK73FB1H221J  | CHIP C 220PF J        |              |          |
| C218     |          |           | CK73FB1H221J  | CHIP C 220PF J        | EM1X1        |          |
| C219     |          |           | CK45FF1H103Z  | CERAMIC 0.010UF Z     | T1           |          |
| C220     |          |           | CC45FSL1H331J | CERAMIC 330PF J       |              |          |
| C221     |          |           | CK45FB1H102K  | CERAMIC 1000PF K      |              |          |
| C222     |          |           | CK73EB1H102K  | CHIP C 1000PF K       |              |          |
| C223     |          |           | CK45FF1H103Z  | CERAMIC 0.010UF Z     |              |          |
| C224,225 |          |           | CC73FSL1H101J | CHIP C 100PF J        |              |          |
| C226     |          |           | CK45FB1H102K  | CERAMIC 1000PF K      |              |          |
| C227     |          |           | CE04KW1C470M  | ELECTRO 47UF 16WV     |              |          |

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PARTS LIST

KTF-2010/3010

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|----------|----------|-----------|---------------|-------------------------------|--------------|----------|
| C228     |          |           | CC45FSL1H101J | CERAMIC 100PF J               |              |          |
| C233     |          |           | CC45FSL1H101J | CERAMIC 100PF J               |              |          |
| C234     |          |           | CC73FSL1H821J | CHIP C 820PF J                |              |          |
| C235-237 |          |           | CK45FF1H103Z  | CERAMIC 0.010UF Z             |              |          |
| C240,241 |          |           | CC73FSL1H101J | CHIP C 100PF J                |              |          |
| C242     |          |           | CE04KW1C470M  | ELECTRO 47UF 16WV             |              |          |
| C245-247 |          |           | CC73FSL1H101J | CHIP C 100PF J                |              |          |
| C248     |          |           | CC73FSL1H100D | CHIP C 10PF D                 |              |          |
| C249     |          |           | CC73FCH1H100D | CHIP C 10PF D                 | E1T2         |          |
| CN1      |          |           | E40-4245-05   | PIN ASSY                      |              |          |
| CN2      |          |           | E40-4914-05   | FLAT CABLE CONNECTOR          |              |          |
| CN3      |          |           | E40-4952-05   | FLAT CABLE CONNECTOR          |              |          |
| CN4      |          |           | E40-4871-05   | PIN ASSY                      |              |          |
| J1       |          |           | E04-0025-05   | RF COAXIAL CABLE RECEPTACLE   | E1T2         |          |
| J2       |          |           | E20-0321-05   | LOCK TERMINAL BOARD(2P,F)     | E1T2         |          |
| J2       |          |           | E70-0052-05   | LOCK TERMINAL BOARD           | EM1X1        |          |
| J2       |          |           | E70-0052-05   | LOCK TERMINAL BOARD           | T1           |          |
| J3       |          |           | E63-0068-15   | PHONO JACK                    |              |          |
| J4       |          |           | E11-0188-05   | MINIATURE PHONE JACK(2P)      |              |          |
| -        |          |           | J19-3610-04   | HOLDER                        |              |          |
| E7       |          |           | J11-0098-05   | WIRE CLAMPER                  |              |          |
| CF1 ,2   |          |           | L72-0566-05   | CERAMIC FILTER                | E1T2         |          |
| CF3 ,4   |          |           | L72-0120-05   | CERAMIC FILTER                | E1T2         |          |
| CF3 ,4   |          |           | L72-0536-05   | CERAMIC FILTER                | ET1          |          |
| CF3 ,4   |          |           | L72-0546-05   | CERAMIC FILTER                | M1X1         |          |
| L1       |          |           | L31-0545-05   | FM-RF COIL                    | E1T2         |          |
| L2       |          |           | L40-1091-17   | SMALL FIXED INDUCTOR          |              |          |
| L3       |          |           | L39-1325-05   | COMBINATION COIL              | T1T2         |          |
| L3       |          |           | L39-1328-05   | COMBINATION COIL              | EM1X1        |          |
| L3       |          |           | L39-1328-05   | COMBINATION COIL              | E1           |          |
| L4       |          |           | L40-1001-17   | SMALL FIXED INDUCTOR(10UH,K)  |              |          |
| L5       |          |           | L30-0911-05   | AM IFT                        |              |          |
| L6       |          |           | L30-0484-05   | FM IFT                        |              |          |
| L7       |          |           | L30-0485-05   | FM IFT                        |              |          |
| L9       |          |           | L40-1091-17   | SMALL FIXED INDUCTOR          |              |          |
| L11 ,12  |          |           | L79-1236-05   | LC FILTER                     |              |          |
| L13      |          |           | L40-6825-20   | SMALL FIXED INDUCTOR(6.8MH,J) | E1T2         |          |
| L14      |          |           | L79-1237-05   | LC FILTER                     |              |          |
| T1       |          |           | L07-2082-05   | POWER TRANSFORMER             | ET1          |          |
| T1       |          |           | L07-2084-05   | POWER TRANSFORMER             | M1X1         |          |
| T1       |          |           | L07-2086-05   | POWER TRANSFORMER             | E1T2         |          |
| X1       |          |           | L77-1122-05   | CRYSTAL RESONATOR(7.2MHZ)     |              |          |
| X2       |          |           | L78-0208-05   | RESONATOR (456KHZ)            |              |          |
| X4       |          |           | L77-2002-05   | CRYSTAL RESONATOR(4.332MHZ)   | ET1E1        |          |
| X4       |          |           | L77-2002-05   | CRYSTAL RESONATOR(4.332MHZ)   | T2           |          |
| X5       |          |           | L78-0284-05   | RESONATOR (5MHZ)              |              |          |
| R1 ,2    |          |           | RK73FB2A182J  | CHIP R 1.8K J 1/10W           | E1T2         |          |
| R3 ,4    |          |           | RK73FB2A391J  | CHIP R 390 J 1/10W            | E1T2         |          |
| R5 ,6    |          |           | RK73FB2A471J  | CHIP R 470 J 1/10W            | E1T2         |          |
| R7       |          |           | RD14NB2E100J  | RD 10 J 1/4W                  | E1T2         |          |
| R8       |          |           | RK73FB2A330J  | CHIP R 33 J 1/10W             | E1T2         |          |
| R9       |          |           | RK73FB2A182J  | CHIP R 1.8K J 1/10W           | E1T2         |          |
| R10      |          |           | RK73FB2A391J  | CHIP R 390 J 1/10W            | E1T2         |          |
| R11      |          |           | RK73FB2A272J  | CHIP R 2.7K J 1/10W           | E1T2         |          |

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|----------|----------|-----------|--------------|----------------------|--------------|----------|
| R12 -14  |          |           | RK73FB2A104J | CHIP R 100K J 1/10W  | E1T2         |          |
| R15      |          |           | RK73FB2A391J | CHIP R 390 J 1/10W   | E1T2         |          |
| R16      |          |           | RK73FB2A271J | CHIP R 270 J 1/10W   | E1T2         |          |
| R17      |          |           | RK73FB2A473J | CHIP R 47K J 1/10W   | E1T2         |          |
| R19      |          |           | RK73FB2A221J | CHIP R 220 J 1/10W   |              |          |
| R20      |          |           | RK73FB2A473J | CHIP R 47K J 1/10W   | E1T2         |          |
| R21 ,22  |          |           | RK73FB2A471J | CHIP R 470 J 1/10W   | E1T2         |          |
| R23      |          |           | RK73FB2A470J | CHIP R 47 J 1/10W    | E1T2         |          |
| R24      |          |           | RK73FB2A513J | CHIP R 51K J 1/10W   | E1T2         |          |
| R25      |          |           | RK73FB2A101J | CHIP R 100 J 1/10W   | E1T2         |          |
| R26      |          |           | RK73FB2A561J | CHIP R 560 J 1/10W   | E1T2         |          |
| R27      |          |           | RK73FB2A101J | CHIP R 100 J 1/10W   | E1T2         |          |
| R28      |          |           | RK73FB2A511J | CHIP R 510 J 1/10W   | E1T2         |          |
| R29      |          |           | RK73FB2A101J | CHIP R 100 J 1/10W   | E1T2         |          |
| R30      |          |           | RK73FB2A391J | CHIP R 390 J 1/10W   | E1T2         |          |
| R31      |          |           | RK73FB2A123J | CHIP R 12K J 1/10W   | E1T2         |          |
| R32      |          |           | RK73FB2A752J | CHIP R 7.5K J 1/10W  | E1T2         |          |
| R35      |          |           | RK73FB2A681J | CHIP R 680 J 1/10W   | E1T2         |          |
| R36 ,37  |          |           | RK73FB2A121J | CHIP R 120 J 1/10W   | E1T2         |          |
| R38      |          |           | RK73FB2A362J | CHIP R 3.6K J 1/10W  | E1T2         |          |
| R39      |          |           | RK73FB2A511J | CHIP R 510 J 1/10W   | E1T2         |          |
| R40 ,41  |          |           | RK73FB2A182J | CHIP R 1.8K J 1/10W  | E1T2         |          |
| R42      |          |           | RK73FB2A222J | CHIP R 2.2K J 1/10W  | E1T2         |          |
| R47      |          |           | RK73FB2A182J | CHIP R 1.8K J 1/10W  | E1T2         |          |
| R78      |          |           | RK73FB2A103J | CHIP R 10K J 1/10W   |              |          |
| R84      |          |           | RK73FB2A200J | CHIP R 20 J 1/10W    |              |          |
| R86      |          |           | RK73FB2A102J | CHIP R 1.0K J 1/10W  |              |          |
| R91      |          |           | RK73FB2A102J | CHIP R 1.0K J 1/10W  |              |          |
| R94      |          |           | RK73EB2B102J | CHIP R 1.0K J 1/8W   |              |          |
| R95      |          |           | RK73FB2A222J | CHIP R 2.2K J 1/10W  |              |          |
| R96      |          |           | RK73FB2A103J | CHIP R 10K J 1/10W   | E1T2         |          |
| R101     |          |           | RK73FB2A102J | CHIP R 1.0K J 1/10W  |              |          |
| R102     |          |           | RK73FB2A103J | CHIP R 10K J 1/10W   |              |          |
| R103     |          |           | RK73FB2A102J | CHIP R 1.0K J 1/10W  | E1T2         |          |
| R106,107 |          |           | RK73FB2A102J | CHIP R 1.0K J 1/10W  |              |          |
| R108     |          |           | RK73FB2A102J | CHIP R 1.0K J 1/10W  |              |          |
| R114     |          |           | RK73FB2A102J | CHIP R 1.0K J 1/10W  |              |          |
| R117     |          |           | RK73FB2A123J | CHIP R 12K J 1/10W   | M1           |          |
| R122     |          |           | RK73FB2A472J | CHIP R 4.7K J 1/10W  |              |          |
| R123     |          |           | RK73FB2A363J | CHIP R 36K J 1/10W   | E1T2         |          |
| R127,128 |          |           | RK73FB2A225J | CHIP R 2.2M J 1/10W  | M1           |          |
| R150     |          |           | RK73FB2A101J | CHIP R 100 J 1/10W   |              |          |
| R177     |          |           | RD14NB2E392J | RD 3.9K J 1/4W       |              |          |
| R179     |          |           | RK73FB2A105J | CHIP R 1.0M J 1/10W  | E1T2         |          |
| R192     |          |           | RK73FB2A102J | CHIP R 1.0K J 1/10W  |              |          |
| R199     |          |           | RK73EB2B102J | CHIP R 1.0K J 1/8W   |              |          |
| R200,201 |          |           | RK73FB2A102J | CHIP R 1.0K J 1/10W  |              |          |
| R210     |          |           | RS14KB3A101J | FL-PROOF RS 100 J 1W | E1T2         |          |
| R210     |          |           | RS14KB3A221J | FL-PROOF RS 220 J 1W | EM1X1        |          |
| R210     |          |           | RS14KB3A221J | FL-PROOF RS 220 J 1W | T1           |          |
| R215     |          |           | RD14NB2E101J | RD 100 J 1/4W        |              |          |
| R221,222 |          |           | RK73FB2A104J | CHIP R 100K J 1/10W  |              |          |
| R223     |          |           | RK73FB2A102J | CHIP R 1.0K J 1/10W  |              |          |
| R224     |          |           | RK73FB2A104J | CHIP R 100K J 1/10W  |              |          |
| R225     |          |           | RD14NB2E1R0J | RD 1 J 1/4W          |              |          |
| R226     |          |           | RK73EB2B473J | CHIP R 47K J 1/8W    |              |          |

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|------------------------------------------------------|----------|-----------|----------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|-------------------------------------|----------|
| Δ R227,228<br>R232-234<br>R235<br>R237<br>R239       |          |           | RK73FB2A473J<br>RK73FB2A104J<br>RD14NB2E1R0J<br>RK73FB2A104J<br>RK73FB2A103J           | CHIP R 47K J 1/10W<br>CHIP R 100K J 1/10W<br>RD 1 J 1/4W<br>CHIP R 100K J 1/10W<br>CHIP R 10K J 1/10W         |                                     |          |
| R240<br>R240<br>R241<br>Δ R242<br>R243-245           |          |           | RK73EB2B104J<br>RK73EB2B104J<br>RK73FB2A104J<br>RD14NB2E1R0J<br>RK73FB2A104J           | CHIP R 100K J 1/8W<br>CHIP R 100K J 1/8W<br>CHIP R 100K J 1/10W<br>RD 1 J 1/4W<br>CHIP R 100K J 1/10W         | EM1X1<br>T1<br>E1T2                 |          |
| R246-248<br>R252,253<br>R254,255<br>R255<br>R256,257 |          |           | RK73EB2B104J<br>RK73FB2A101J<br>RK73EB2B101J<br>RK73EB2B101J<br>RK73FB2A221J           | CHIP R 100K J 1/8W<br>CHIP R 100 J 1/10W<br>CHIP R 100 J 1/8W<br>CHIP R 100 J 1/8W<br>CHIP R 220 J 1/10W      | E1T2<br>E1T2<br>M1                  |          |
| R258,259<br>R260<br>R265<br>R284<br>R285,286         |          |           | RK73FB2A103J<br>RK73FB2A102J<br>RK73FB2A512J<br>RK73FB2A104J<br>RK73EB2B104J           | CHIP R 10K J 1/10W<br>CHIP R 1.0K J 1/10W<br>CHIP R 5.1K J 1/10W<br>CHIP R 100K J 1/10W<br>CHIP R 100K J 1/8W |                                     |          |
| R287,288<br>R291<br>R292<br>R294<br>R297             |          |           | RK73FB2A152J<br>RK73EB2B104J<br>RK73FB2A104J<br>RS14KB3D1R0J<br>RK73FB2A102J           | CHIP R 1.5K J 1/10W<br>CHIP R 100K J 1/8W<br>CHIP R 100K J 1/10W<br>FL-PROOF RS 1 J 2W<br>CHIP R 1.0K J 1/10W | E1T2                                |          |
| R301<br>R303-308<br>R309<br>R310,311<br>R312         |          |           | RK73FB2A101J<br>RK73FB2A104J<br>RK73EB2B473J<br>RK73FB2A473J<br>RK73FB2A104J           | CHIP R 100 J 1/10W<br>CHIP R 100K J 1/10W<br>CHIP R 47K J 1/8W<br>CHIP R 47K J 1/10W<br>CHIP R 100K J 1/10W   | E1T2                                |          |
| R313,314<br>R315-323<br>R324<br>R325-327<br>R328,329 |          |           | RK73EB2B104J<br>RK73FB2A104J<br>RK73EB2B104J<br>RK73FB2A104J<br>RK73EB2B102J           | CHIP R 100K J 1/8W<br>CHIP R 100K J 1/10W<br>CHIP R 100K J 1/8W<br>CHIP R 100K J 1/10W<br>CHIP R 1.0K J 1/8W  |                                     |          |
| R330<br>R331<br>R332<br>R333<br>R334                 |          |           | RK73FB2A225J<br>RK73FB2A225J<br>RK73FB2A104J<br>RK73FB2A220J<br>RK73FB2A223J           | CHIP R 2.2M J 1/10W<br>CHIP R 2.2M J 1/10W<br>CHIP R 100K J 1/10W<br>CHIP R 22 J 1/10W<br>CHIP R 22K J 1/10W  | E1T2<br>E1T2<br>E1T2<br>E1T2        |          |
| R335,336<br>R338<br>R401<br>R402<br>R404             |          |           | RK73FB2A102J<br>RK73FB2A102J<br>RK73FB2A100J<br>RK73FB2A822J<br>RK73FB2A102J           | CHIP R 1.0K J 1/10W<br>CHIP R 1.0K J 1/10W<br>CHIP R 10 J 1/10W<br>CHIP R 8.2K J 1/10W<br>CHIP R 1.0K J 1/10W | M1<br>M1                            |          |
| VR1<br>VR2<br>VR3<br>VR4<br>W201-204                 |          |           | R12-0606-05<br>R12-3685-05<br>R12-3686-05<br>R12-1618-05<br>R92-0670-05                | TRIMMING POT.(330)<br>TRIMMING POT.(10K)<br>TRIMMING POT.(22K)<br>TRIMMING POT.(3.3K)<br>CHIP R 0 OHM         |                                     |          |
| W205<br>W207<br>W208<br>W208<br>W208,209<br>W210-212 |          |           | R92-0679-05<br>R92-0679-05<br>R92-0670-05<br>R92-0670-05<br>R92-0670-05<br>R92-0679-05 | CHIP R 0 OHM<br>CHIP R 0 OHM<br>CHIP R 0 OHM<br>CHIP R 0 OHM<br>CHIP R 0 OHM<br>CHIP R 0 OHM                  | M1T1T2<br>EM1X1<br>T1<br>E1T2<br>M1 |          |

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| Ref. No                                              | Add-ress | New Parts | Parts No.                                                               | Description                                                                  | Desti-nation                          | Re-marks |
|------------------------------------------------------|----------|-----------|-------------------------------------------------------------------------|------------------------------------------------------------------------------|---------------------------------------|----------|
| W211-217<br>W211-217<br>W211,212<br>W215-217<br>W218 |          |           | R92-0679-05<br>R92-0679-05<br>R92-0679-05<br>R92-0679-05<br>R92-0670-05 | CHIP R 0 OHM<br>CHIP R 0 OHM<br>CHIP R 0 OHM<br>CHIP R 0 OHM<br>CHIP R 0 OHM | ET1E1<br>T2<br>X1<br>M1X1             |          |
| W219-222<br>W219-222<br>W219-227<br>W227<br>W227     |          |           | R92-0679-05<br>R92-0679-05<br>R92-0679-05<br>R92-0679-05<br>R92-0679-05 | CHIP R 0 OHM<br>CHIP R 0 OHM<br>CHIP R 0 OHM<br>CHIP R 0 OHM<br>CHIP R 0 OHM | EM1X1<br>T1<br>E1T2<br>EM1X1<br>T1    |          |
| W228<br>W229<br>W232                                 |          |           | R92-0670-05<br>R92-0670-05<br>R92-0679-05                               | CHIP R 0 OHM<br>CHIP R 0 OHM<br>CHIP R 0 OHM                                 | M1<br>E1T2<br>E1T2                    |          |
| Δ S1<br>S2<br>S3 -6<br>S7<br>S8 ,9                   |          |           | S62-0001-05<br>S31-2132-05<br>S70-0031-05<br>S70-0031-05<br>S70-0031-05 | SLIDE SWITCH<br>SLIDE SWITCH<br>TACT SWITCH<br>TACT SWITCH<br>TACT SWITCH    | M1<br>E1T2<br>ET1E1                   |          |
| S8 ,9<br>S10 -25<br>Δ S27                            |          |           | S70-0031-05<br>S70-0031-05<br>S31-2132-05                               | TACT SWITCH<br>TACT SWITCH<br>SLIDE SWITCH                                   | T2<br>M1                              |          |
| S26                                                  |          |           | T99-0598-05                                                             | ROTARY ENCODER                                                               |                                       |          |
| D1 -3<br>D4<br>D5 -10<br>D5 -10<br>D11               |          |           | 1SS268<br>SVC212(2,3)<br>HSS104A<br>1SS133<br>MA111                     | DIODE<br>VARIABLE CAPACITANCE DIODE<br>DIODE<br>DIODE<br>DIODE               | E1T2<br>E1T2<br>E1T2<br>E1T2<br>ET1E1 |          |
| D11<br>D12 -14<br>D12 -14<br>D16<br>D16              |          |           | MA111<br>HSS104A<br>1SS133<br>HSS104A<br>1SS133                         | DIODE<br>DIODE<br>DIODE<br>DIODE<br>DIODE                                    | T2                                    |          |
| D18 ,19<br>D18 ,19<br>D23<br>D23<br>D24              |          |           | HSS104A<br>1SS133<br>HSS104A<br>1SS133<br>HSS104A                       | DIODE<br>DIODE<br>DIODE<br>DIODE<br>DIODE                                    | E1T2<br>E1T2                          |          |
| Δ D24<br>Δ D25 ,26<br>Δ D27 ,28<br>Δ D27 ,28<br>D30  |          |           | 1SS133<br>S5688B<br>HSS104A<br>1SS133<br>HSS104A                        | DIODE<br>DIODE<br>DIODE<br>DIODE<br>DIODE                                    |                                       |          |
| D30<br>D31                                           |          |           | 1SS133<br>HZS11N(B2)                                                    | DIODE<br>ZENER DIODE                                                         |                                       |          |
| Δ D31<br>Δ D32 -35<br>Δ D32 -35<br>D36<br>D36        |          |           | MTZJ11(B)<br>HSS104A<br>1SS133<br>HZS5.1S(B2)<br>RD5.1JS(B2)            | ZENER DIODE<br>DIODE<br>DIODE<br>ZENER DIODE<br>ZENER DIODE                  |                                       |          |
| D37 ,38<br>D37 ,38<br>D39<br>D40 -43<br>D40 -43      |          |           | HSS104A<br>1SS133<br>MA111<br>HSS104A<br>1SS133                         | DIODE<br>DIODE<br>DIODE<br>DIODE<br>DIODE                                    |                                       |          |

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|---------|----------|-----------|----------------|--------------------|--------------|----------|
| D44     |          |           | MA111          | DIODE              |              |          |
| D46     |          |           | HSS104A        | DIODE              |              |          |
| D46     |          |           | 1SS133         | DIODE              |              |          |
| D47 -50 |          |           | MA111          | DIODE              |              |          |
| D51 -55 |          |           | HSS104A        | DIODE              |              |          |
| D51 -55 |          |           | 1SS133         | DIODE              |              |          |
| D56     |          |           | HSS104A        | DIODE              | EM1E1        |          |
| D56     |          |           | HSS104A        | DIODE              | X1           |          |
| D56     |          |           | 1SS133         | DIODE              | EM1E1        |          |
| D56     |          |           | 1SS133         | DIODE              | X1           |          |
| D57     |          |           | HSS104A        | DIODE              | X1T1T2       |          |
| D57     |          |           | 1SS133         | DIODE              | X1T1T2       |          |
| D58     |          |           | HSS104A        | DIODE              | ET1E1        |          |
| D58     |          |           | HSS104A        | DIODE              | T2           |          |
| D58     |          |           | 1SS133         | DIODE              | ET1E1        |          |
| D58     |          |           | 1SS133         | DIODE              | T2           |          |
| D59     |          |           | HSS104A        | DIODE              | M1           |          |
| D59     |          |           | 1SS133         | DIODE              | M1           |          |
| D60     |          |           | HSS104A        | DIODE              | ET1E1        |          |
| D60     |          |           | HSS104A        | DIODE              | T2           |          |
| D60     |          |           | 1SS133         | DIODE              | ET1E1        |          |
| D60     |          |           | 1SS133         | DIODE              | T2           |          |
| D64     |          |           | HZS5.1S(B2)    | ZENER DIODE        |              |          |
| D64     |          |           | RD5.1JS(B2)    | ZENER DIODE        |              |          |
| D65     |          |           | HSS104A        | DIODE              |              |          |
| D65     |          |           | 1SS133         | DIODE              |              |          |
| D67     |          |           | MA111          | DIODE              |              |          |
| ED1     |          |           | 10-BT-202GK    | INDICATOR TUBE     |              |          |
| IC1     |          |           | LA1266         | IC(AM/FM IF)       |              |          |
| IC2     |          |           | LC72131        | MOS-IC             |              |          |
| IC3     |          |           | NJM4565D-D     | IC(OP AMP X2)      |              |          |
| IC4     |          |           | LA3401         | IC(FM MPX)         |              |          |
| IC5     |          |           | NJM4565D-D     | IC(OP AMP X2)      | E1T2         |          |
| IC7     |          |           | SAA6579T       | ANALOGUE IC        | ET1E1        |          |
| IC7     |          |           | SAA6579T       | ANALOGUE IC        | T2           |          |
| IC7     |          |           | SAA6579T/R     | ANALOGUE IC        | ET1E1        |          |
| IC7     |          |           | SAA6579T/R     | ANALOGUE IC        | T2           |          |
| IC8     |          |           | S-806D-Z       | ANALOGUE IC        |              |          |
| IC9     |          |           | UPD780206GF031 | MI-COM IC          |              |          |
| Q1 ,2   |          |           | DTC124EUA      | DIGITAL TRANSISTOR | E1T2         |          |
| Q3      |          |           | DTA124EUA      | DIGITAL TRANSISTOR | E1T2         |          |
| Q4      |          |           | DTC124EUA      | DIGITAL TRANSISTOR | E1T2         |          |
| Q5 ,6   |          |           | 2SK302(Y,GR)   | FET                | E1T2         |          |
| Q7      |          |           | 2SC4081(R,S)   | TRANSISTOR         | E1T2         |          |
| Q7      |          |           | 2SD1819A(Q,R)  | TRANSISTOR         | E1T2         |          |
| Q8      |          |           | 2SA1576A(R,S)  | TRANSISTOR         | E1T2         |          |
| Q8      |          |           | 2SB1218A(Q,R)  | TRANSISTOR         | E1T2         |          |
| Q9      |          |           | DTA124ESA      | DIGITAL TRANSISTOR | E1T2         |          |
| Q9      |          |           | UN4112         | DIGITAL TRANSISTOR | E1T2         |          |
| Q10     |          |           | DTC124ESA      | DIGITAL TRANSISTOR | E1T2         |          |
| Q10     |          |           | UN4212         | DIGITAL TRANSISTOR | E1T2         |          |
| Q11     |          |           | 2SC1740S(Q,R)  | TRANSISTOR         | E1T2         |          |
| Q11     |          |           | 2SC2785(F,E)   | TRANSISTOR         | E1T2         |          |
| Q12     |          |           | 2SC1923(R,O)   | TRANSISTOR         | E1T2         |          |
| Q13 -15 |          |           | 2SC1740S(Q,R)  | TRANSISTOR         | E1T2         |          |

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|---------|----------|-----------|---------------|--------------------|--------------|----------|
| Q13 -15 |          |           | 2SC2785(F,E)  | TRANSISTOR         |              |          |
| Q16 ,17 |          |           | 2SA992(F,E)   | TRANSISTOR         |              |          |
| Q18 ,19 |          |           | 2SC1845(F,E)  | TRANSISTOR         | T1T2         |          |
| Q20 -22 |          |           | 2SD1302(S,T)  | TRANSISTOR         |              |          |
| Q23     |          |           | DTA124ESA     | DIGITAL TRANSISTOR |              |          |
| Q23     |          |           | UN4112        | DIGITAL TRANSISTOR |              |          |
| Q24     |          |           | 2SA954(L,K)   | TRANSISTOR         |              |          |
| Q25     |          |           | DTA124ESA     | DIGITAL TRANSISTOR | T1T2         |          |
| Q25     |          |           | UN4112        | DIGITAL TRANSISTOR | T1T2         |          |
| Q28     |          |           | 2SC1740S(Q,R) | TRANSISTOR         |              |          |
| Q28     |          |           | 2SC2785(F,E)  | TRANSISTOR         |              |          |
| Q29     |          |           | 2SK246(Y,GR)  | FET                |              |          |
| Q30 ,31 |          |           | 2SA1175(F,E)  | TRANSISTOR         |              |          |
| Q30 ,31 |          |           | 2SA933AS(Q,R) | TRANSISTOR         | E1T2         |          |
| Q32     |          |           | 2SA1576A(R,S) | TRANSISTOR         |              |          |
| Q32     |          |           | 2SB1218A(Q,R) | TRANSISTOR         | E1T2         |          |
| Q33     |          |           | DTC124ESA     | DIGITAL TRANSISTOR |              |          |
| Q33     |          |           | UN4212        | DIGITAL TRANSISTOR |              |          |
| Q35     |          |           | DTC124ESA     | DIGITAL TRANSISTOR | E1T2         |          |
| Q35     |          |           | UN4212        | DIGITAL TRANSISTOR | E1T2         |          |
| Q36 ,37 |          |           | 2SK364(GR,BL) | FET                | M1           |          |
| Q38 -41 |          |           | 2SC1740S(Q,R) | TRANSISTOR         |              |          |
| Q38 -41 |          |           | 2SC2785(F,E)  | TRANSISTOR         |              |          |
| Q42     |          |           | 2SA1175(F,E)  | TRANSISTOR         |              |          |
| Q42     |          |           | 2SA933AS(Q,R) | TRANSISTOR         |              |          |
| Q43     |          |           | DTC124ESA     | DIGITAL TRANSISTOR | E1T2         |          |
| Q43     |          |           | UN4212        | DIGITAL TRANSISTOR | E1T2         |          |
| Q46     |          |           | 2SA1534A(R,S) | TRANSISTOR         |              |          |
| Q47     |          |           | 2SD2061(E,F)  | TRANSISTOR         |              |          |
| Q48     |          |           | 2SC1740S(Q,R) | TRANSISTOR         |              |          |
| Q48     |          |           | 2SC2785(F,E)  | TRANSISTOR         |              |          |
| Q49     |          |           | 2SC3940A(R,S) | TRANSISTOR         |              |          |
| Q50     |          |           | DTC124ESA     | DIGITAL TRANSISTOR |              |          |
| Q50     |          |           | UN4212        | DIGITAL TRANSISTOR |              |          |
| Q51     |          |           | 2SC3940A(R,S) | TRANSISTOR         | E1T2         |          |
| Q52     |          |           | 2SC3940A(R,S) | TRANSISTOR         |              |          |
| Q53     |          |           | 2SC1740S(Q,R) | TRANSISTOR         |              |          |
| Q53     |          |           | 2SC2785(F,E)  | TRANSISTOR         |              |          |
| Q54     |          |           | 2SC4081(R,S)  | TRANSISTOR         |              |          |
| Q54     |          |           | 2SD1819A(Q,R) | TRANSISTOR         |              |          |
| Q57     |          |           | 2SK364(GR,BL) | FET                | E1T2         |          |
| Q58     |          |           | DTA124ESA     | DIGITAL TRANSISTOR | M1           |          |
| Q58     |          |           | UN4112        | DIGITAL TRANSISTOR | M1           |          |
| Q59     |          |           | 2SC1740S(Q,R) | TRANSISTOR         |              |          |
| Q59     |          |           | 2SC2785(F,E)  | TRANSISTOR         |              |          |
| Q60     |          |           | 2SK364(GR,BL) | FET                |              |          |
| A1      |          |           | W02-2509-05   | FM FRONT-END ASSY  | ET1E1        |          |
| A1      |          |           | W02-2509-05   | FM FRONT-END ASSY  | T2           |          |
| A1      |          |           | W02-2512-05   | FM FRONT-END ASSY  | M1X1         |          |

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# KTF-2010/3010

## SPECIFICATIONS

### KTF-2010

#### FM tuner section

|                                                     |                                             |
|-----------------------------------------------------|---------------------------------------------|
| Tuning frequency range                              | 87.5 MHz ~ 108 MHz                          |
| (For Russia)                                        | 65.0 MHz~74 MHz<br>87.5 MHz~108 MHz         |
| Usable sensitivity (DIN)                            |                                             |
| MONO                                                | 1.3μV(75 Ω)/13.5 dBf(40 kHz dev.,S/N 26 dB) |
| STEREO                                              | 50μV(75 Ω)/45.2 dBf(46 kHz dev.,S/N 46 dB)  |
| Limiting level (DIN)                                | 1.0μV(75 Ω) /11.2 dBf                       |
| Total harmonic distortion(DIN at 1 kHz)             |                                             |
| MONO                                                | 0.1 % (65 .2 dBf input)                     |
| STEREO                                              | 0.3% (65 .2 dBf input)                      |
| Signal to noise ratio (at 1 kHz)                    |                                             |
| (DIN weighted at 1 kHz, 40 kHz dev.)                |                                             |
| MONO                                                | 69 dB (65.2 dBf input)                      |
| STEREO                                              | 61 dB (65.2 dBf input)                      |
| Stereo separation (DIN)                             |                                             |
| 1 kHz                                               | 45 dB                                       |
| Capture ratio                                       | 2.0 dB                                      |
| Selectivity (DIN ± 300 kHz)                         | 60 dB                                       |
| Image rejection ratio (at 98 MHz)                   | 80 dB                                       |
| IF rejection ratio (at 98 MHz)                      | 100 dB                                      |
| Spurious rejection ratio (at 98 MHz)                | 100 dB                                      |
| AM suppression ratio                                | 68 dB                                       |
| Sub carrier suppression ratio (DIN)                 | 55 dB (at 19 kHz)                           |
|                                                     | 65 dB (at 38 kHz)                           |
| Frequency response (30 Hz ~ 15 kHz)                 | + 0.5 dB, -2.0 dB                           |
| Output level / impedance (FM at 1 kHz, 75 kHz dev.) |                                             |
| Fixed                                               | 0.6 V / 1.3 kΩ                              |

#### MW(AM) tuner section

|                           |                     |
|---------------------------|---------------------|
| Tuning frequency range    | 531 kHz ~ 1,602 kHz |
| Usable sensitivity        |                     |
| (at 30 % mod., S/N 20 dB) | 12 μV / (400 μV/ m) |
| Signal to noise ratio     |                     |
| (at 30 % mod.,1 mV input) | 50 dB               |
| Total harmonic distortion | 0.4 %               |
| Image rejection ratio     | 30 dB               |
| Selectivity               | 30 dB               |
| Output level / impedance  |                     |
| (at 30 % mod., 1mV input) | 0.18 V / 1.3 kΩ     |

#### LW(for U.K. only) tuner section

|                            |                   |
|----------------------------|-------------------|
| Tuning frequency range     | 153 kHz ~ 279 kHz |
| Usable sensitivity         |                   |
| (at 30 % mod., S/ N 20 dB) | 22 μV             |
| Signal to noise ratio      |                   |
| (at 30 % mod., 1 mV input) | 47 dB             |
| Total harmonic distortion  | 0.6 %             |
| Image rejection ratio      | 27 dB             |
| Selectivity                | 33 dB             |
| Output level / impedance   |                   |
| (at 30 % mod., 1mV input)  | 0.18 V / 1.3 kΩ   |

#### General

|                   |                                       |
|-------------------|---------------------------------------|
| Power consumption | 10 W                                  |
| Dimensions        | W : 440 mm<br>H : 93 mm<br>D : 384 mm |
| Weight (Net)      | 3.3kg                                 |

### KTF-3010

#### FM tuner section

|                                                     |                                             |
|-----------------------------------------------------|---------------------------------------------|
| Tuning frequency range                              | 87.5 MHz ~ 108 MHz                          |
| (For Russia)                                        | 65.0 MHz~74 MHz<br>87.5 MHz~108 MHz         |
| Usable sensitivity (DIN)                            |                                             |
| MONO                                                | 1.3μV(75 Ω)/13.5 dBf(40 kHz dev.,S/N 26 dB) |
| STEREO                                              | 50μV(75 Ω)/45.2 dBf(46 kHz dev.,S/N 46 dB)  |
| Limiting level (DIN)                                | 1.0μV(75 Ω)/11.2 dBf                        |
| Total harmonic distortion (DIN at 1 kHz)            |                                             |
| MONO                                                | 0.08 % (85 .2 dBf input,WIDE)               |
| STEREO                                              | 0.2% (85 .2 dBf input,WIDE)                 |
| Signal to noise ratio                               |                                             |
| (DIN weighted at 1 kHz, 40 kHz dev.)                |                                             |
| MONO                                                | 70 dB (85.2 dBf input)                      |
| STEREO                                              | 65 dB (85.2 dBf input)                      |
| Stereo separation (DIN)                             |                                             |
| 1 kHz                                               | 50 dB (WIDE)                                |
| Capture ratio                                       | 2.0 dB (WIDE)                               |
| Selectivity                                         |                                             |
| (DIN ± 300 kHz)                                     | 45 dB (WIDE)                                |
| (DIN ± 200 kHz)                                     | 55 dB(NARROW)                               |
| Image rejection ratio (at 98 MHz)                   | 85 dB                                       |
| IF rejection ratio (at 98 MHz)                      | 105 dB                                      |
| Spurious rejection ratio (at 98 MHz)                | 105 dB                                      |
| AM suppression ratio                                | 68 dB                                       |
| Sub carrier suppression ratio (DIN)                 | 55 dB (at 19 kHz)                           |
|                                                     | 65 dB (at 38 kHz)                           |
| Frequency response (30 Hz ~ 15 kHz)                 | + 0.5 dB, -1.5 dB                           |
| Output level / impedance (FM at 1 kHz, 75 kHz dev.) |                                             |
| Fixed                                               | 0.6 V / 600 Ω                               |

#### MW(AM) tuner section

|                            |                     |
|----------------------------|---------------------|
| Tuning frequency range     | 531 kHz ~ 1,602 kHz |
| Usable sensitivity         |                     |
| (at 30 % mod., S/N 20 dB)  | 12 μV / (400 μV/ m) |
| Signal to noise ratio      |                     |
| (at 30 % mod., 1 mV input) | 50 dB               |
| Total harmonic distortion  | 0.4 %               |
| Image rejection ratio      | 30 dB               |
| Selectivity                | 30 dB               |
| Output level / impedance   |                     |
| (at 30 % mod., 1 mV input) | 0.18 V / 600 Ω      |

#### LW(for U.K. only) tuner section

|                            |                   |
|----------------------------|-------------------|
| Tuning frequency range     | 153 kHz ~ 279 kHz |
| Usable sensitivity         |                   |
| (at 30 % mod., S/N 20 dB)  | 22 μV             |
| Signal to noise ratio      |                   |
| (at 30 % mod., 1 mV input) | 47 dB             |
| Total harmonic distortion  | 0.6 %             |
| Image rejection ratio      | 27 dB             |
| Selectivity                | 33 dB             |
| Output level / impedance   |                   |
| (at 30 % mod., 1mV input)  | 0.18 V / 600 Ω    |

#### General

|                   |                                       |
|-------------------|---------------------------------------|
| Power consumption | 10 W                                  |
| Dimensions        | W : 440 mm<br>H : 93 mm<br>D : 384 mm |
| Weight (Net)      | 3.3kg                                 |

# KTF-2010/3010

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KENWOOD follows a policy of continuous advancements in development. For this reason specifications may be changed without notice.

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**Note:**

Component and circuitry are subject to modification to insure best operation under differing local conditions. This manual is based on the General market(M) standard, and provides information on regional circuit modification through use of alternate schematic diagrams, and information on regional component variations through use of parts list.

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