

This Information Is Provided By
CBTricks.com

TRS Challenger Model 600 Service Manual

Liability of damages to any equipment is the sole responsibility of the user! Downloading, viewing, or using any information provided on these pages automatically accepts the user to the terms of this agreement!

Modifications are provided for information purposes only!

Supporters of CBTricks.com paid for the hosting so you would have this file.

CBTricks.com is a non-commercial personal website was created to help promote the exchange of service, modification, technically oriented information, and historical information aimed at the Citizens Band, GMRS (CB "A" Band), MURS, Amateur Radios and RF Amps.

CBTricks.com is not sponsored by or connected to any Retailer, Radio, Antenna Manufacturer or Amp Manufacturer, or affiliated with any site links shown in the links database. The use of product or company names on my web site is not endorsement of that product or company.

The site is supported with donations from users, friends and selling of the Site Supporters DVD's to cover some of the costs of having this website on the Internet instead of relying on banner ads, pop-up ads, commercial links, etc. Thus I do not accept advertising banners or pop-up/pop-under advertising or other marketing/sales links or gimmicks on my website.

ALL the money from donations is used for CBTricks.com I didn't do all the work to make money (I have a day job). This work was not done for someone else to make money also, for example the ebay CD sellers.

All Trademarks, Logos, and Brand Names are the property of their respective owners.

This information is not provided by, or affiliated in any way with any radio or antenna Manufacturers.

Thank you for any support you can give.

For information on how to Support CBTricks.com

<http://www.cbtricks.com/support/>

40 CHANNEL C.B. TRANSCEIVER
TRS CHALLENGER
MODEL 600

SERVICE AND MAINTENANCE
MANUAL

TRS MARKETING INC.
A Subsidiary of CCE Corp.
137E Savrona Way Carson,
CA. 907046 · 213/323-4201

MDK-3000

MEISEI ELECTRIC CO., LTD.

TABLE OF CONTENTS

GENERAL INFORMATION

OPERATING INSTRUCTIONS

CIRCUIT DESCRIPTION

FUNCTION of SOLID STATE DEVICES

ALIGNMENT PROCEDURE

RECOMMENDED TEST EQUIPMENT

TROUBLE SHOOTING

NO OPERATION

FLOW CHART 1

NO SOUND

FLOW CHART 2

RECEIVER TROUBLE

FLOW CHART 3

TRANSMITTER TROUBLE

FLOW CHART 4

INTERCONNECTION DIAGRAM

BLOCK DIAGRAM

SCHEMATIC

PARTS LIST

WARNING

- A. All adjustments, except for external knobs and controls, must be made by or under the immediate supervision of a person holding a commercial first or second-class radio operator license.
- B. Replacement or substitution of crystals, transistors, and other components are regulated under the Federal Communications Commission (FCC) Rules and Regulations Part 95 and Part 2. All changes or modifications must be made by or under the immediate supervision of a person holding a first or second-class radio operators license. Proper and qualified servicing is necessary to assure continued compliance with FCC Rules and Regulations.
- C. The Federal Communications Commission (FCC) requires a valid CLASS D License or a complete TEMPORARY PERMIT (Form 555-B) to operate the transmitter portion of this unit.

The address of the FCC is:

FEDERAL COMMUNICATIONS COMMISSION,
WASHINGTON, D.C. 20554

GENERAL INFORMATION

LICENSING:

Before filing formal application for a station license, you must read the sections covering Class D Citizens radio stations in Part 95 of the FCC Rules and Regulation. Complete TEMPORARY PERMIT, FCC FORM 555-B and APPLICATION FOR CLASS C OR D STATION LICENSE IN THE CITIZENS RADIO SERVICE, FCC Form 505. Forward form 505 to the Federal Communications Commission, Gettysburg, PA 17326.

Should you require advice and or assistance, your dealer will be glad to help you. Remember, DO NOT operate your transmitter until FCC Form 555-B has been completed and your permanent license applied for.

SERVICING:

It is the user's responsibility to see that this unit is operation at all times, in accordance with the FCC Citizens Radio Service Regulations.

If you install your own transceiver, DO NOT attempt to make any transmitter tuning adjustment. Adjustments are prohibited by the FCC unless you hold or are in the presence and under the supervision of a first or second class radio telephone licensed person. A Citizens Band or Amateur License is NOT sufficient.

Replacements of crystals, transistors or other components, must be those supplied by the manufacturer.

SPECIFICATIONS

General

Channels	40
Frequency Range	26.965 to 27.405MHz
Frequency Control	P.L.L. Synthesizer
Frequency Tolerance	±0.005%
Frequency Stability	±0.001%
Operating Temperature Range	-30°C to +50°C
Humidity	95%
Microphone	Dynamic with Push-to-Talk Switch and coiled cord.
Supply Voltage	13.8V (Positive or negative ground)
Current Drain Transmit	Full mod 2.0A
Receive	Squelched 0.4A
Dimensions	W-7 7/8 H-2 3/8 D-9 5/16
Weight	4.9 pound
Antenna Connector	M type

Transmitter

Output power	4.0W
Modulation Capability	AM 100%
Harmonic Suppression and Spurious Emission	Better than 60 dB
Frequency Response	300 to 27.00 Hz
Output Impedance	50 ohms. unbalanced
Output Indicator	Meter gives true proportional RF output indication.

Receiver

Sensitivity	Less than 0.7uV for 10dB S+N/N.
Selectivity	±10KHz More than 70dB.
If Frequency	10.69MHz and 455KHz
Automatic Gain Control	Less than 10dB change audio output for input from 15dB micro to 80dB micro Volt

Squelch

Noise Limiter (ANL)	Series diode type
Noise Blanker (NB)	RF Type
Clarifier Range (Delta Freq.)	±1KHz
RF Gain Control	Variable 30dB
Audio output power	4 watts into 8 ohms
Frequency Response	300 to 3000 Hz
Built-in speaker	8 ohms
External Speaker	8 ohms Built-in-Speaker to be automatically disconnected when external speaker is plugged in.

P.A. System

Power Output	4 watts into P.A. speaker
--------------	---------------------------

External Speaker Imp.
PA Continuous type
Gain Control

8 ohms (Not Supplier)
Built in

Indicator

Channel Display
Illuminated Meter Indicator

LED numerical display
Meter gives proportional RF output.
Receiving level

LED Indicator

RX (Receiving State)
MOD (modulation)
TX (Transmitting State)

OPERATING INSTRUCTIONS

This unit is a fully solid state 40-channel Citizens Band Transceiver, operated on a 12V DC. 2A This transceiver utilizes latest development in analog, digital and solid state technology to generate all 40 Citizens Band transmit and receive frequencies. A single highly stable crystal quartz oscillator supplies accurate reference signals to a Large Scale Integrated Circuit (L.S.I.). This L.S.I. is the heart and brain of the Phase Lock Loop (P.L.L.) digital frequency synthesizer. By utilising programmable dividers, and read only memories (R.O.M.S.).

The L.S.I. controls a Voltage Controlled Oscillator (V.C.O.), the frequency of which is continuously compared with that of the CRYSTAL QUARTZ OSCILLATED frequency in phase comparator section, of the L.S.I., hence the final V.C.O. frequency is made to track the crystal quartz oscillators and is as stable as the crystal reference frequency.

The receiver section is a sensitive superheterodyne circuit featuring dual conversion, low noise R.F. stage switchable automatic noise limiting, delta tuning, signal strength meter, mechanical filter, external speaker jack and instantaneous selection of any of the 40 digitally synthesized channel frequencies. The transmitter section is designed around highly reliable silicon transistors. Any of the 40 digitally synthesized frequencies are instantaneously selectable. The transmitter output stage is a conservatively rated high gain R.F. power transistor.

FUNCTION OF CONTROLS AND INDICATORS

CHANNEL SELECTOR:

The channel selector switch has 40 operating positions. This switch sets both transmit and receive frequencies simultaneously by selecting the correct portion of the read only memory (R.O.M.) section of the PHASE LOCKED LOOP (P.L.L.) and large scale integrated circuit (L.S.I.)

SQUELCH CONTROL:

The Squelch Control is used to silence background noise (atmospheric or man-made noise) in the absence of a received radio signal. In the full counter-clockwise position, the unit is un-squelched (noise silencing at all).

In the fully clockwise position, the unit is squelched for even quite strong signals.

VOLUME CONTROL AND OFF-ON SWITCH:

This control turns the power ON and OFF and adjust the loudness of received signals, and P.A. speaker.

DELTA FREQUENCY CONTROL:

This control should be 1.0KHz, when necessary, to turn to signals that may not be exactly on frequency.

Turning this control to left or right changes the receiver frequency and permits very accurate tuning of stations that may be slightly off frequency.

The center position of this control is the center of the channel frequency.

ANL SWITCH:

The ANL switch is used to turn the ANL circuit ON and OFF. Normally, when driving, or, if stopped in traffic, it would be advisable to have the ANL switch ON because of the strong ignition noises present. If, however, you are stopped on a quiet road, turning the ANL switch OFF may improve very weak signal reception.

NB SWITCH:

The NB (noise Blanker) is a circuit designed to reduce impulse noises such as ignition noise from vehicles, etc., without significantly affection the basic sensitivity of the receiver.

The NB switch is used to turn the noise blanker circuits ON and OFF, the noise blanker is designed to reduce IMPULSE-TYPE noises, such as those created by an automobile ignition system. To ensure reception of very weak signals it is recommended that the NB switch only be turned on when noise becomes excessive.

PA-CB SWITCH:

This switch is used for selecting normal CB communications, or public address paging. In the PA Position, it disables the transceiver and the internal speaker unit (8ohms, not supplied) for paging. During PA operation, the "S" meter is not illuminated.

RF GAIN CONTROL:

The RF gain control is used to reduce the sensitivity of the receiver. By turning this control anti-clockwise weak signals can be eliminated and very strong signals which overload the RF amplifier and cause audio distortion, can be reduced.

FUNCTION OF METER:

This meter has three functions as follows:

1. SIGNAL STRENGTH METER: The metering circuit is calibrated so that 1000 microvolts will read S9.
2. RELATIVE POWER OUTPUT METER: A reading of 4-10 under normal conditions is to be expected.
3. STANDING WAVE RATIO METER: In the transmit mode, the power output meter indicates S.W.R. as well as relative R.F. power

To check S.W.R., press the push-to-talk switch and cover the microphone with your hand.

A meter reading of "7" on the upper scale indicates maximum antenna efficiency and an S.W.R. of 1.0.

If the meter indicates below 4 or over 10, the antenna, cables, and antenna connectors should be checked or replaced.

TRANSMISSION:

To transmit, press the push-to-talk switch on the left side of microphone. The Red Lamp and S-Meter will operate to indicate transmission power.

WARNING: DO NOT PRESS-TALK-SWITCH
BEFORE CONNECTING ANTENNA

FUNCTION OF TRANSCEIVER STATUS LAMPS:

- RED: Indicates that the transceiver is in the transmit mode.
Yellow: Indicates that the transmitter is being modulated.
When the transceiver is in the transmit mode the brightness of this lamp will fluctuate as you speak into the microphone.
GREEN: Indicates that the transceiver is in the receive mode.

MICROPHONE CONNECTION:

Insert Microphone Plug into Microphone Connector on the Front Left Side Panel. and finger tighten the outside Ring Nut.

P.A. SYSTEM:

1. Connect a Public Address Speaker to the PA Speaker Jack on the Back Pane.
2. Turn the PA-CB SWITCH PA position.
3. Adjust volume as required with Volume Control.

ANTENNA CONNECTION:

A CB antenna of 50 ohm impedance, 27 MHz must be used. Push Antenna Cable Plug into Antenna Jack on the Back Panel, and finger tighten the outside Ring Nut.

PRIMARY POWER CONNECTION:

Connect the red lead from the connector assembly supplied with the unit to the Positive battery terminal of your car. Connect the black lead to the negative terminal. Either terminal may be ground.

OPERATING PROCEDURE-RECEIVE:

1. The PA-CB switch should be in the CB position.
2. Turn the power on by turning the ON-OFF volume control clockwise. Adjust volume control to comfortable listening level.
3. Turn the channel selector to the desired channel.
4. While listening to background noise (Wait until the channel is clear if signals are present), adjust the SQUELCH CONTROL until the background noise JUST disappears. The Receiver will remain quiet until a signal is received that is greater in strength than the background noise, or weak signals may not be heard.
5. Turning DELTA FREQUENCY CONTROL to left or right changes the receiver frequency and permits very accurate tuning of stations that may be slightly off frequency. The center position of this control is the center of the channel frequency.
6. The RF gain control should be turned fully clockwise during normal operation. Turning this control anti-clockwise will reduce the receiver sensitivity, eliminating weak signals, and allowing very strong signals to be received with out overload distortion.

OPERATING PROCEDURE-TRANSMIT

1. Select the desired channel.
2. If the channel is clear, press the push-to-talk switch on the microphone. Hold the microphone close to, but to the side of your mouth, and speak in a normal voice. The red transmit lamp will light and the yellow modulation lamp will fluctuate as you speak, indicating modulation.

CIRCUIT DESCRIPTION

GENERAL

The PLL (Phase Locked Loop) frequency synthesizer system is used in this transceiver. This PLL synthesizer can select any of the 40 channels from 26.965 MHz to 27.405 MHz.

RECEIVER CIRCUIT

(Refer to attached block diagram and schematic diagram). The incoming signal which through preselector is mixed and converted to 1st IF frequency 10.695 MHz.

f1: Incoming signal
fpl: 1st local frequency to PLL unit
(16.270 - 16.710 MHz)
27.405 (CH40) - 16.710 = 10.695 MHz

This frequency (10.695 MHz) is converted to 2nd IF frequency (455 KHz). 2nd local frequency (10.240 MHz) is supplied to PLL unit, and amplified by IF AMP Q214, Q215, Q216 and Q217 through crystal filter and ceramic filter. 2nd IF signal which is amplified is detected by D207. Output signal of detector is amplified by audio amplifier Q205, Q206, Q207 and Q208 after passing through the automatic noise limiter network (ANL). Impulse Noise is reduced by Noise Blanker (NB).

PLL CIRCUIT

PLL frequency synthesizer system is used in the transceiver. 2 crystal and 1 PLL system. Local frequency are 10.24 MHz and 10.695 MHz controlled by crystal. Output signal from PLL unit are TX oscillator, RX 1st local frequency (16 MHz) and RX 2nd local frequency 10.24 MHz.

TRANSMITTER CIRCUIT

(Refer to attached block diagram and schematic diagram). Output signal of PLL through band pass filter 601 and 602 are supplied to Q222, Q224 and Q225. Collector modulation is used in this transmitter. Driver Q224 and final RF power amplifier Q225 are modulated by the class B push-pull modulator Q207 and Q208 which are commonly used to AF output power amplifier. Input audio signal from microphone are amplified by Q201, Q202, Q203, Q204 (with limiter to prevent over modulation) and Q205.

OPERATION OF MODULATION LIMITER

The audio and input signal of the microphone is amplified by transistor Q22, Q23, Q24, Q13 and Q14. The output of Q207 and Q208 drive the modulation transformer T202. This modulation signal is detected by diode, D201 and D202 to produce D.C. voltage proportional to the modulation level. This D.C. voltage is added to the gate voltage of Audio Limiter Circuit Q201 and Q202 and hence controls the gain Q203 and Q204. As modulation level increases the gain of Q207 and Q208 are reduced.

The controlled audio signals are amplified and fed to RF amplifier Q224 and Q225, as the result, the modulation is not exceeded 100% by adjusting volume VR-1.

TRANSMITTER FREQUENCY STABILIZATION

The final transmitter frequency is determined by the difference in frequency of two highly stable crystal oscillators. Any drift in these oscillator, whether caused by aging or temperature, is always in the same direction and hence, have a tendance to cancel.

The VCO is constituted of Q602 circuit which oscillates signal of 26.965-27.405 MHz at the time of transmission and such signal and 10.695 MHz oscillated by Q607 are mixed by Q605, obtains signal frequencies ranging from 16.27 MHz to 16.71 MHz. Also at the time of receiving, it oscillates frequencies ranging from 26.51 MHz to 26.95 MHz, then by mixing with 10.240 MHz it is changed to 16.27 MHz to 16.71 MHz. Such signal, through Q606 buffer, once again mixes at Q609 to make 0.91 MHz to 1.35 MHz signals, joins into IC601 inner programmable divider input. Through the cord convertor, programmerable divider is connected to channel selector (rotary switch). Channel selector specifies comparable divided-frequencies ranging from 91 to 135 divided-frequencies (CH1 - CH40) to programmable divider. As a result, divider output obtains 10 kHz signal. The PLL phase detector compares both phases of reference 10 KHz programmable divider. The phase error voltage is integrated and then is applied into VCO. It then tracks onto frequency selected by the channel selector in order to obtain stabilizing frequency. The above mentioned frequencies ranging from 16.27 to 16.71 MHz is used as the first local oscillation signal of receiver. 10.240 MHz signal functions as the second local oscillation signal.

Spurious Radiation

Spurious radiation of transmitter is suppressed by next circuits

Band Pass Filter T601, T602,

Low Pass Filter L205, L209, L211,
 C120, C129, C125
 C126, C129, C132

The Second Harmonic Trap L210, CV101

ELECTRICAL FUNCTION OF SOLID STATE DEVICES

1. DIODES

D201	Modulation Limiter
D202	"
D203	Noise Blanker Detector
D204	"
D205	Protector
D206	"
D207	Receiver Detector
D208	Noise limiter
D209	Voltage Regulator
D210	"
D211	Squelch Detector
D212	"
D213	Receiver Meter Detector
D214	LED Protector
D215	Transmitter Power Detector
D216	Protector
D217	"
D218	"
D219	"
D601	Voltage Controlled Capacitor
D602	Voltage Regulator
D603	Switch
D604	Protector
D605	Voltage Regulator
D606	Voltage Controlled Capacitor
D607	Switch
D608	"

609	Matrix for Digital Read Out
610	"
611	"
612	"

2. TRANSISTORS

Q201	Modulation Limiter
Q202	"
Q203	Audio AMP.
Q204	"
Q205	"
Q206	Receiver Audio and Modulation AMP
Q207	
Q208	
Q209	Noise Blanker AMP
Q210	"
Q211	"
Q212	Receiver RF AMP
Q213	" 1st mixer
Q214	" 2nd mixer
Q215	" IF AMP
Q216	" "
Q217	" "
Q218	1st OSC Buffer AMP
Q219	2nd OSC Buffer AMP
Q220	Squelch AMP
Q221	Switch
Q222	TX Driver AMP
Q223	"
Q224	"

Q225	TX RF Power Amp
Q226	Noise Blanker Amp
Q227	"
Q601	Transmitter Buffer Amp
Q602	V.C.O.
Q603	V.C.O.
Q604	Buffer Amp
Q605	Mixer
Q606	Buffer Amp
Q607	10.695 MHz O.S.C. Amp
Q608	Q608 Buffer Amp
Q609	Mixer
Q610	10.24 MHz O.S.C. Amp
Q611	TX. RX Control Switch

3 I.C.

IC601	MPD 861C
-------	----------

LIST OF EQUIVALENT TRANSISTOR

A. FINAL AMP	2SC1306	NIPPON ELECTRIC COMPANY (NEC)
	2SC1975	MATSUSHITA ELECTRONICS CORP.
	2SC2029	FUJITSU LIMITED
B. RF DRIVER	2SC1449	(NEC)
	2SC1973	MATSUDHITA
	2SC2028	FUJITSU
C. MOD AMP	2SC1096	(NEC)
	2SC789	TOSHIBA
	2SC1226	MATSUSHITA
D. RX RF AMP	2SC1675	(NEC)
	2SC829	MATSUSHITA
	2SC380	TOSHIBA
E. RX IF, MIX	2SC945	(NEC)
	2SC828	MATSUSHITA
	2SC372	TOSHIBA
F. MOD DRIVER	2SC227	(NEC)
	2SC509	TOSHIBA

ALIGNMENT PROCEDURE

1. ALIGNMENT PROCEDURE OF PLL SECTION

1.1) STANDARD FREQUENCY (10.24 MHz)

Set the channel fo transceiver at CH20 and F (Cralifier) "0" and connect FC to Emitter of Q610. Align variable capacitor CV601 to obtain 10.24 MHz reading on F.C.

1.2) VCO

Same condition of 1.1, connect DCV between R606 and R634. Align T603 to obtain 3.5V D.C. reading on DCV.

1.3) 1st LOCAL OSC

Same condition of 1.1, connect RF VTVM output of T606 coil. Align T604, T605 and T606 to obtain maximum reading on RF VTVM.

1.4) LOCAL OSC

Connect F.C. output of T608 coil, and align T608 to obtain 10.695MHz reading on F.C.

1.5) PLL MIXER

Connect RF VTVM output of T609 coil, and align T607 and T609 to obtain maximum reading on RF VTVM.

1.6) TX LOCAL OSC (27 MHz)

Connect RF VTVM output of T601 coil, and align T601 and T602 to obtain maximum reading on RF VTVM.

2. ALIGNMENT PROCEDURE OF RECEIVER SECTION

2.1) 2nd OLCAL OSC (10.24 MHz)

Connect RF VTVM output of T213 coil and align to maximum reading on RF VTVM.

2.2) RF Gain

Set the channel of "SSG" to CH20 and set "SSG" frequency to 1000Hz at 30 percent modulation.

Set the channel of transceiver at CH20, set the volume to maximum, the squelch to minimum and the RF Volume turn clockwise.

Align coils T204 to T212 for maximum audio output.

2.3) Maximum Sensitivity

Set the channel of "SSG" at CH20, set "SSG" frequency at 1000Hz with 30 percent modulation, and set the "ATT" to +6 dB. micro, and set the channel of transceiver to CH20, set the volume to maximum and the squelch to minimum, and the RF volume turn clockwise.

Re-align coils T204 to T212 to obtain maximum sensitivity.

2.4) S Meter Calibration.

Set the channel of "SSG" to CH20, "SSG" frequency at 1000Hz with 30 percent modulation, and the "ATT" to 66dB. micro set the channel of transceiver to CH20 and set squelch to minimum and the RF volume turn clockwise.

Align VR3 to indicate 7/10 on S Meter.

2.5) Squelch

Set the channel of "SSG" to CH20, "SSG" frequency at 1000Hz with 30 percent modulation and the "ATT" to 66 dB. micro
Set the channel of transceiver to CH20, volume to maximum and squelch to maximum and the RF volume turn clockwise.

With above condition, adjust VR6 so as audio output just ceases and check AF output when output of "SSG" becomes 67 to 70 dB. micro.

2.6) S/N

Set the channel of "SSG" to CH20, "SSG" frequency at 1000Hz with 30 percent modulation and the "ATT" to +6 dB micro.
Set the channel of transceiver to CH20, and adjust volume control to obtain AF output voltage 2V.

Check that AF output voltage is less than 615V when "SSG" modulation is turned off.

2.7) Noise Measurement (NB, ANL)

Check that noise voltage is less than 300MV on all channels, when NB ON and ANL ON. (Align T203)

2.8) Noise of PA

Check that no noise is present when the transceiver operated in the PA mode.

2.9) RF Gain

Check effect of RF gain control.

3. ALIGNMENT PROCEDURE OF TRANSMITTER SECTION

3.1) RF-Power-Amp

Set the channel of transceiver at CH20, align coils T214, L208, and CV101 for maximum indication on power meter.

Output power must be less than 3.5W and output power difference between each channel (CH1 to CH40) must be less than 0.5W (DC power : 13.8V).

3.2) Frequency Deviation

Using frequency counter, check whether frequency deviation is within $\pm 500\text{Hz}$ on all channels.

3.3) Harmonics

Align CV101 on channel 20 until spectrum analyzer indicated minimum scale reading and check for other spurious.

3.4) Parastic and Self Oscillator

With the limiter circuit disabled, check the wave form at 80 percent modulation on all channels.

3.5) Limiter Circuit

3.5.1) Set audio input to 1KHz at 7MV.

3.5.2) Adjust VR1 for 50 percent modulation.

3.5.3) Increase audio input to 0.25V Rms.

3.5.4) Insure that 100 percent modulation is not exceeded.

3.5.5) If more than 100 percent modulation is found in 3.5.4. above re-adjust VR1 to give 95 percent modulation.

3.6) RF Meter

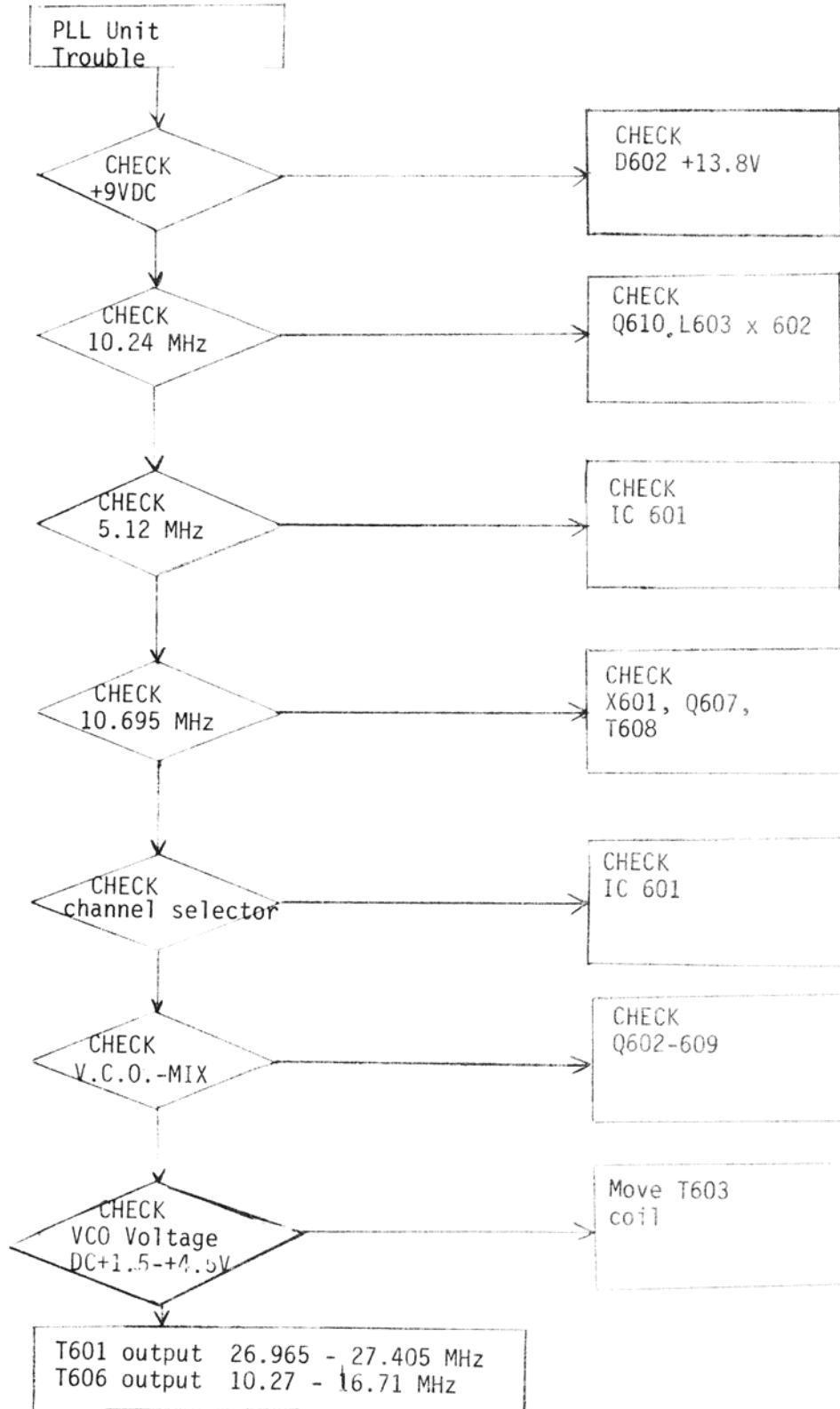
Set the channel of transceiver at CH20, and align VR4 to indicate 7/10 on the RF meter without modulation.

3.7) PA Output Measurement

Set the switch of the transceiver to PA position and adjust microphone input voltage to 10Mv at 1KHz.

PA output must be more than 3.0V on VTVM.

P.L.L CIRCUIT FLOW CHART No. 5



PARTS LIST

TRS
Marketing
Inc.

Circuit Symbol	Description	Type	Parts No.
IC, FET, TRANSISTORS & DIODES			
IC601	Integrated Circuit	μPD861C(E)	10-001
Q201, 202	FET	2SK30AY	10-002
Q209, 212, 213, 602	"	2SK61-Y	10-003
Q206	Transistor	2SC509	10-004
Q226	"	2SA844	10-005
Q203-205, 210, 211	"	2SC945	10-006
Q215-217, 220, 221, 223	"	2SC945	10-006
Q608	"	2SC945	10-006
Q207, 208	"	2SC1096K or L	10-007
Q209, 212, 213, 214, 218	"	2SC1675	10-008
Q219, 222, 227, 601	"	2SC1675	10-008
Q603-607, 609-611	"	2SC1675	10-008
Q224	"	2SC2028	10-009
Q225	"	2SC2029	10-010
D201, 202, 205-208	Diode	1S953	10-011
D210-212, 214, 215, 219	"	1S953	10-011
D603, 604, 607-612	"	1S953	10-011
D601, 606	"	1SV50	10-012
D203, 204	"	1N60(AA116)	10-013
D216, 217	"	V06E	10-014
D218	"	1S1209	10-015
D605	Zener Diode	RD5.6EB	10-016
D213	"	RD7.5EB	10-017
D209, 602	"	RD9.1EB	10-018
CHLD	2 Digit LED	SL1272	10-019
TX-LD	LED	SEL103R	10-020
RX-LD	"	SEL303E	10-021
MOD-LD	"	SEL103W	10-022

PARTS LIST

TRS
Marketing
Inc.

Circuit Symbol	Description	Type	Parts No.
COILS & TRANSFORMERS			
L202	Coil	K21-1001	11-001
L203	"	" -1003	11-002
L204	"	" -1004	11-003
L205	"	" -1007	11-004
L206	"	" -6002	11-005
L208	"	" -1002	11-006
L209	"	" -1009	11-007
L210	"	" -1010	11-008
L211	"	" -1011	11-009
L601, 602	Micro Inductor	" -1013	11-010
L603	"	" -1013	11-010
T203	Coil	" -2023	11-011
T204	"	" -2023	11-011
T205	"	" -2023	11-011
T206	"	" -2025	11-012
T207	"	" -2026	11-013
T208	"	" -2027	11-014
T209	"	" -2028	11-015
T210	"	" -2028	11-015
T211	"	" -2029	11-016
T212	"	" -2030	11-017
T213	"	" -2031	11-018
T214	"	" -2009	11-019
T601	"	" -2032	11-020
T602	"	" -2033	11-021
T603	"	" -2034	11-022
T604	"	" -2035	11-023
T605	"	" -2036	11-024
T606	"	" -2037	11-025
T607	"	" -2037	11-025

PARTS LIST

TRS
Marketing
Inc.

Circuit Symbol	Description	Type	Parts No.
RESISTORS			
R88, 90, 118	Carbon Resistor	RD1/4WPJ47 Ω	13-001
R30, 44, 114	"	" 100 "	13-002
R17, 70, 93	"	" 470 "	13-003
R74, 80, 107, 120, 126	"	" 1K "	13-004
R656-659, 660, 662, 663	"	" 1K "	13-004
R667, 669	"	" 1K "	13-004
R11, 29	"	" 1.2K "	13-005
R99	"	" 1.5K "	13-006
R16, 102	"	" 2.2K "	13-007
R15, 79, 103	"	" 4.7K "	13-008
R23	"	" 5.1K "	13-009
R105	"	" 5.6K "	13-010
R58, 75	"	" 10K "	13-011
R35, 47	"	" 22K "	13-012
R24, 92, 97	"	" 33K "	13-013
R104	"	" 47K "	13-014
R33	"	" 68K "	13-015
R18	"	" 75K "	13-016
R4	"	" 100K "	13-017
R34	"	" 220K "	13-018
R27, 67	"	RD1/4WPRJ22 Ω	13-019
R60	"	" 33 "	13-020
R72	"	" 47 "	13-021
R626	"	" 68 "	13-022
R59, 77, 95, 112, 113, 115	"	" 100 "	13-023
R26, 101, 121, 625, 650	"	" 100 "	13-023
R670, 677	"	" 100 "	13-023
R22, 28, 50, 56, 121, 602	"	" 220 "	13-024
R617, 623, 632, 641	"	" 220 "	13-024
R89, 651	"	" 330 "	13-025

PARTS LIST

TRS
Marketing
Inc.

Circuit Symbol	Description	Type	Parts No.
RESISTORS (continued)			
R36, 65, 78, 119, 607	Carbon Resistor	RD1/4WPRJ470Ω	13-026
R611, 619	"	" 470"	13-026
R635	"	" 680"	13-027
R616	"	" 750"	13-028
R20, 49, 57, 61, 62, 68, 73	"	" 1K "	13-029
R109, 605, 653, 654, 655	"	" 1K "	13-029
R661, 664-666, 668	"	" 1K "	13-029
R21, 63, 642, 644	"	" 1.2K"	13-030
R629, 639	"	" 1.5K"	13-031
R615	"	" 1.8K"	13-032
R42, 43, 125, 627, 628	"	" 2.2K"	13-033
R48, 55, 624, 636, 652	"	" 3.3K"	13-034
R633	"	" 3.9K"	13-035
R37, 66, 71, 81, 608, 612, 618	"	" 4.7K"	13-036
R1, 5	"	" 5.1K"	13-037
R601, 620, 675	"	" 5.6K"	13-038
R110, 676	"	" 6.8K"	13-039
R2, 6, 46, 64, 69, 76, 87, 91	"	" 10K "	13-040
R94, 96, 100, 106, 638, 647	"	" 10K "	13-040
R673	"	" 10K "	13-040
R604, 609, 614, 622	"	" 12K "	13-041
R54, 123, 610, 621	"	" 15K "	13-042
R14, 25, 41, 45, 82, 108, 630	"	" 22K "	13-043
R634, 648, 649, 672	"	" 22K "	13-043
R19, 603, 613	"	" 27K "	13-044
R38, 111	"	" 33K "	13-045
R10, 671	"	" 47K "	13-046
R51, 84, 85, 645, 646	"	" 51K "	13-047
R40, 631	"	" 75K "	13-048
R8, 39, 52, 86, 106	"	" 100K "	13-049

PARTS LIST

TRS
Marketing
Inc.

Circuit Symbol	Description	Type	Parts No.
RESISTORS (continued)			
R3, 7, 9, 12, 640, 643	Carbon Resistor	RD1/4WPRJ220K Ω	13-050
R53, 637	"	" 330K Ω	13-051
R13	"	" 470K Ω	13-052
R31		RS1/2WPJ 0.5 Ω	13-053
R32		RS2WPJ 8.2 Ω	13-054
CAPACITORS			
C641	Tantalum Condenser	35WV 1 μ F	14-001
C628, 660, 664	Electrolytic "	10V 47 "	14-002
C11, 16, 19, 29, 40, 48, 76	"	16V 10 "	14-003
C101	"	" 10 "	14-003
C12, 13, 17, 22, 23, 144	"	" 47 "	14-004
C81, 82	"	" 100 "	14-005
C96	"	" 470 "	14-006
C94, 95	"	35V 4.7 "	14-007
C4, 6, 9, 79	"	50V 1 "	14-008
C27, 28	"	" V 2.2 "	14-009
C135	"	" V 10 "	14-010
C7, 61, 65, 70	Mylar Condenser	" V 102M	14-011
C14, 37, 39, 77	"	" V 222M	14-012
C640	"	" V 332M	14-013
C5	"	" V 472M	14-014
C15, 20	"	" V 333M	14-015
C8, 18, 55, 75, 80, 103	"	" V 104M	14-016

PARTS LIST

TRS
Marketing
Inc.

Circuit Symbol	Description	Type	Parts No.
CAPACITORS (continued)			
C139, 140	Line By-Pass Capacitor	IHP53Y-F102PFAD1	14-017
CV101, 601	Trimmer Condenser	ECV-IZW40x32	14-018
C654, 657, 658	Ceramic Condenser	50VB 471K	14-019
C133, 143, 151, 634-639	"	102K	14-020
C52, 62, 607, 646	"	50VCH 050C	14-021
C34, 45, 648, 671	"	" 100K	14-022
C612, 49, 125	"	" 150K	14-023
C43, 58, 141	"	" 220K	14-024
C649, 662, 44, 113	"	" 300K	14-025
C41, 115, 138	"	" 390K	14-026
C610, 619, 83, 87, 137	"	" 470K	14-027
C602, 603, 606, 614, 620, 623	"	" 560K	14-028
C626, 666	"	" 560K	14-028
C609, 108	"	" 680K	14-029
C132	"	" 820K	14-030
C89, 99, 632, 633, 647, 663	"	" 101K	14-031
C665	"	" 101K	14-031
C126	"	" 131K	14-032
C601, 621	"	50VCJ 030C	14-033
C42, 128	"	50VCK 020C	14-034
C10, 21, 38, 78, 91, 93, 134, 140	"	50VF 103Z	14-035
C613, 617, 624, 629, 643, 650	"	" 103Z	14-035
C653, 659	"	" 103Z	14-035

PARTS LIST

TRS
Marketing
Inc.

Circuit Symbol	Description	Type	Parts No.
FILTERS			
CF-1	Ceramic Filter	CFU 455Hz	16-001
XF-1	Crytal Filter		16-002
MISCELLAEOUS			
PA-CB	Switch	SLE64204B	17-001
ANL, NB	"	SLE12207	17-002
SW601	Rotary Switch	GA type	17-003
	Meter		17-004
	Lamp	14V80mA4.8o	17-005
	GND. Terminal (MIC Conector)		17-006
PA-SP, EXT-SP	Jack	3.5 ϕ	17-007
	GND. Terminal (Jack)	3.5 ϕ	17-007
ANT	M-Type Conector		17-008
	Power Conector	CN-3795	17-009
	Flat Cable		17-010
	Shielded Cover A		17-011
	" B		17-011
	Cable Ass'y		17-012
	Spacer		17-013

PARTS LIST

TRS
Marketing
Inc.

Circuit Symbol	Description	Type	Parts No.
MISCELLANEOUS (continued)			
	MDK-1000		
SP	Speaker	S9G70B	17-014
	Front Panel		17-015
	Top Cover		17-016
	Bottom Cover		17-017
	Indicator		17-018
	Knob A		17-019
	" B		17-019
	S.P. Stopper		17-020
	S.P. Net (Himeron)		17-021
	Label		17-022
	Name Plate A		17-023
	" B		17-023
	" C		17-023
	" D		17-023
	FCC Label		17-024
	"		17-024
	"		17-024
	Microphone		17-025
	Hunger		17-026
	Bolt (for Hunger)		17-027
	TT2-5-14		17-028
	Power Cable (with Fuse)		17-029
	Blind Rivet		17-030

Model
TRS 600

10/12

PARTS LIST

TRS
Marketing
Inc.

Circuit Symbol	Description	Type	Parts No.
MISCELLANEOUS (continued)			
	NI-2.3-5		17-049
	NI-2.6-4		17-050
	NI-3-8-3EF		17-051
	NI-3-10		17-052
	NI-2.6-6		17-053
	NT2-2.6-8		17-054
	SI-2.6-6		17-055
	SNI-3-8		17-056
	PNI-3-6		17-057
	TP2-2.6-6		17-058
	AHIN2.6		17-059
	AHIN3		17-060
	BT2-2.6-6		17-061
	2.6AIW		17-062
	3LMIW		17-063
	3PIW		17-064
	MDK-1000 TX.RX P.C.B.		17-065
	" PLL "		17-066
	" LED "		17-067
	TX.RX P.C.B.		17-067
	PLL "		17-068
	LED "		17-069