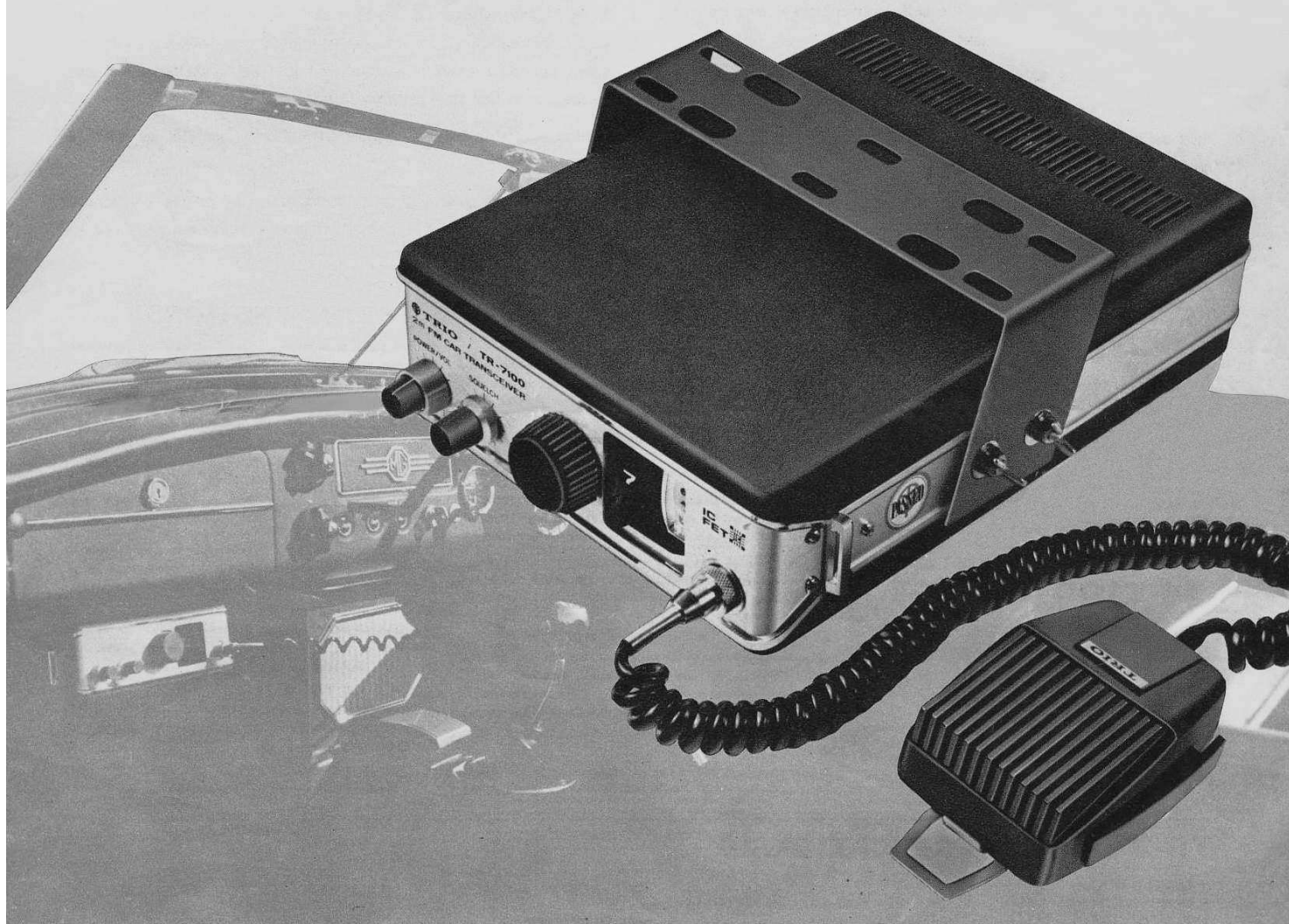




TRIO

2 METER FM CAR TRANSCEIVER

TR-7100



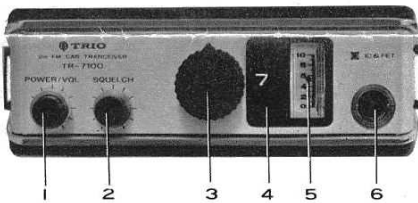
Wherever you drive, take TRIO's technical perfection along with the TR-7100, 2 meter FM car transceiver. It's an all transistorized 144 MHz band instrument that demonstrates positively that all the intricacies of solid state circuitry — for which TRIO is internationally famous — can easily pass the test of rugged, daily use. There are 12 channels on this precision-engineered in-

stallation and a host of other outstanding features, including an all crystal-controlled circuit in both transmitter and receiver units. And the TR-7100 operates reliably despite variations of power supply voltage and varying temperature. All bands in the 144 to 146 MHz frequency range are received with uniquely high sensitivity. It is also very easy to adjust the TR-7100 for fixed station use.

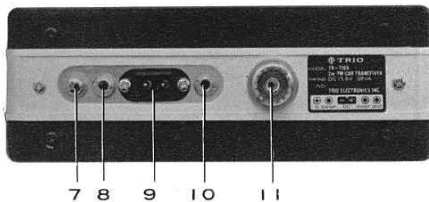
TR-7100 SPECIAL FEATURES

1. Complete solid state transceiver — employs abundant semiconductors including 31 transistors, 1 thyristor, 17 diodes and 2 Zener diodes, incorporated in a high-class circuit.
2. All crystal-controlled circuit used in both transmitter and receiver units — quite stable transceiver operation insured for reliable and comfortable on the car communications against variation of power supply voltage and temperature.
3. Double superheterodyne type of reception — allows reception of all bands in frequency range from 144 to 146 MHz with high sensitivity.
4. FET employed in the initial RF amplifier stage in receiver unit provides especially high-quality two signal characteristics such as cross modulation, inter modulation and suppressed sensitivity.
5. Dual-in-line package type IC LA1201 used in IF amplifier stage — improved reliability, excellent limiting characteristic, and compact size.
6. Ceramic filter inserted in IF stage improves selective characteristic.
7. AF stage employing complementary single-ended push-pull (SEPP) circuit with no input and output transformers acts as an AF amplifier with less distortion even during delivery of high output.
8. FM signal generated and frequency multiplied 24 times by transmitter unit operating on phase modulation system — modulation linearity better enough to allow the user to enjoy communications with clear sound of speeches.
9. Epitaxial planer type RF transistor 2SC703 with a high output employed in the final stage power amplifier — provides an antenna output of more than 10 watts in the 144 to 146 MHz band.
10. A high-performance low-pass filter inserted as television interference prevention circuit in transmitter antenna circuit.
11. This set designed exclusively for vehicular use — operable regardless of the polarity of battery grounded and type of user's motor car and as a fixed station, provided that a power supply is installed separately.
12. A protection circuit provided to protect transistors and chemical capacitors against battery voltage applied with reverse polarity by mistake and another protection circuit for final stage power transistor — allow a beginner to use this set without anxiety.
13. No DC-DC converter employed because of all-transistorized circuitry — insures quiet communications without annoyance from DC-DC converter hum and with small power consumption reduced to less than one half of that of the transceiver using vacuum tube as final stage power amplifier.
14. Compact and stylish design as vehicular set — deserves well for installation in user's car.
15. Protrusions of front panel made as low as practicable and controls covered with flexible vinyl chloride sheet — safety insured even when user encounters a car accident by any chance.

TR-7100 Front View



TR-7100 Rear View



TR-7100 CONTROLS AND THEIR FUNCTIONS

1. POWER/VOL

This is a composite power ON-OFF switch and volume control. The power ON-OFF switch is of the push-push type construction. That is, depressing the control turns on the set and depressing the control again turns off the set.

The volume control increases the volume of the set as it is turned clockwise.

2. SQUELCH

This is the squelch control. Turning the control clockwise to a setting around the mid-point of its rotary range turns on the squelch circuit.

3. CHANNEL

This is the channel selector switch. The switch may be rotated both clockwise and counterclockwise. It has the positions for 12 channels.

4. CHANNEL INDICATOR WINDOW

This window indicates the number of the channel selected when the POWER/VOL control is depressed. When the POWER/VOL control is in the normal position, i.e. the set remains in its off condition, the channel number is not seen by the smoked acrylic resin plate covered on the window.

5. METER

This meter acts as an S meter for signal input and an output meter for signal output. Switchover of the meter circuit for

an input signal or an output signal is automatically performed. The meter acts as the input meter during reception.

6. MIC

This is the connector for the microphone. Operate the set with the microphone supplied with the set, connected to this connector. Pressing the press-to-talk switch on the microphone places the transmitter unit in the plug supplied with the set.

7. G TERMINAL

This is the grounding terminal for the set.

8. EX SP TERMINAL

This is the external speaker terminal. When user wants to an external speaker, connect the speaker to this terminal through the use of the plug supplied with the set.

9. DC TERMINAL

This is the terminal for the DC power supply. Connect the power line to this terminal through the use of the power cord and socket supplied with the set.

10. EX ST TERMINAL

This is the external stand-by terminal. This terminal is connected to the transceiver circuit in parallel with the press-to-talk switch on the microphone.

11. ANT TERMINAL

This is the terminal for the antenna lead wire.

TR-7100 SPECIFICATIONS

Transmitter Unit

TRANSMITTING FREQUENCY:	12 channel frequencies in the 144 MHz band
TYPE OF EMISSION:	F3
TRANSMITTING POWER OUTPUT:	10 W
MODULATION SYSTEM:	Phase modulation
MAXIMUM FREQUENCY DEVIATION:	± 15 kHz
FREQUENCY MULTIPLICATION:	24
FUNDAMENTAL OSCILLATOR FREQUENCY:	6 MHz band
UNWANTED RADIATION:	Less than -60 dB
ANTENNA IMPEDANCE:	50 Ω
MICROPHONE:	Dynamic microphone with 500 Ω press-to-talk switch

Receiver Unit

RECEIVING FREQUENCY:	Same as transmitting frequency
TYPE OF EMISSION:	F3
TYPE OF RECEPTION:	Double superheterodyne
SENSITIVITY:	More than 26 dB S/N for 1μV input
SELECTIVITY:	More than ±12.5 kHz at -6 dB
FILTER:	Ceramic filter

INTERMEDIATE FREQUENCY:	1st IF: 10.7 MHz
	2nd IF: 455 kHz
AF OUTPUT:	0.7 W (under 10 % distortion)

General Specifications

SEMICONDUCTORS COMPLEMENT:	Transistor 31
	Diode 17
	Thyristor 1
POWER REQUIREMENTS	
OPERATING VOLTAGE:	DC 12.0 — 15.0 V
	Reference voltage: 13.8 V
GROUNDING SYSTEM:	Grounding at negative side grounding at positive side is also practicable by changing the installation method.
POWER CONSUMPTION	
DURING TRANSMISSION:	Approx. 2.3 A (at 13.8 V supply voltage)
DURING RECEPTION:	Approx. 0.35 A (at 13.8 V supply voltage)
DIMENSIONS:	6-11/16" W × 2-3/8" H × 9-1/16" D
	170 W × 60 H × 230 D (mm)
WEIGHT:	4.62 lbs (2.1 kg)

* Any of the specifications given here may be changed or modified without notice.

PS-3

DC CONSTANT-VOLTAGE POWER SUPPLY

When using a car transceiver, for example, the TR-7100 in your car, you may operate it on the car batteries.

But when using it as a fixed station, you will need a separate power supply.

The PS-3 is a direct-current constant-voltage power supply which is necessary when using the TR-7100 as a fixed station.



PS-3 SPECIAL FEATURES

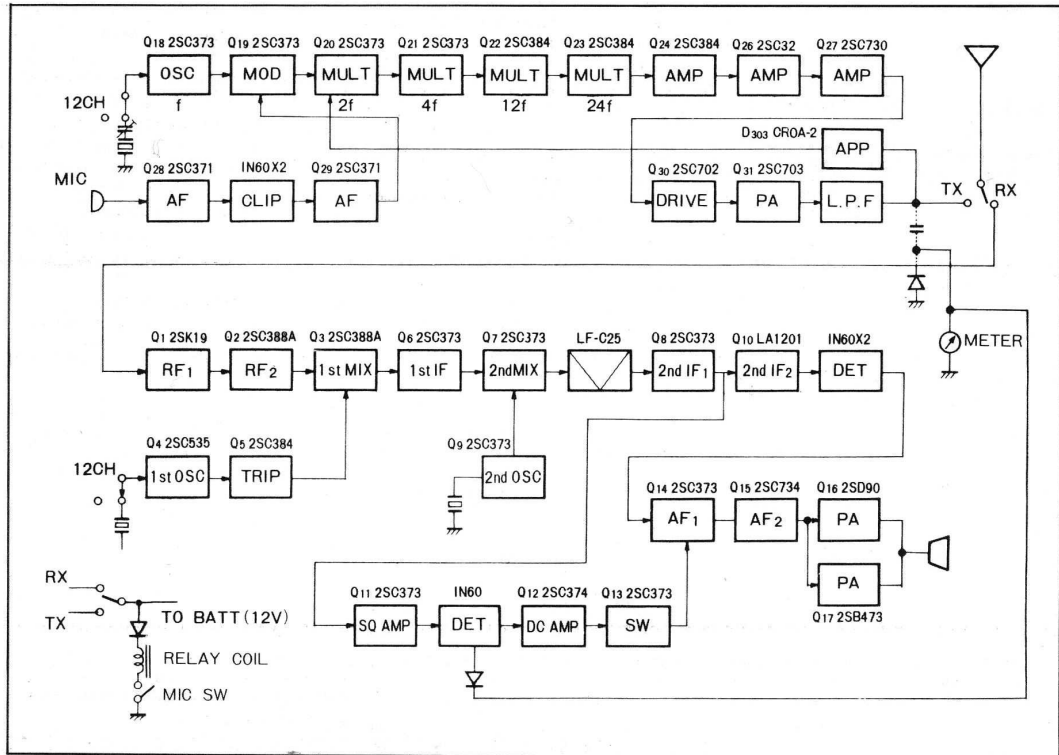
1. It can be used as a power supply for car transceivers used as fixed stations; and for experimenting transistor circuits.
2. It has a built-in over-current protective circuit for providing complete protection from shorting of output terminals and overloads.
3. Voltages and currents can be read on a single meter by use of a switch.
4. The panel has test terminals on the front and car transceiver terminal on the back (power cord is provided as accessory), so the unit may be used for various purposes by use of these terminals.

PS-3 SPECIFICATIONS

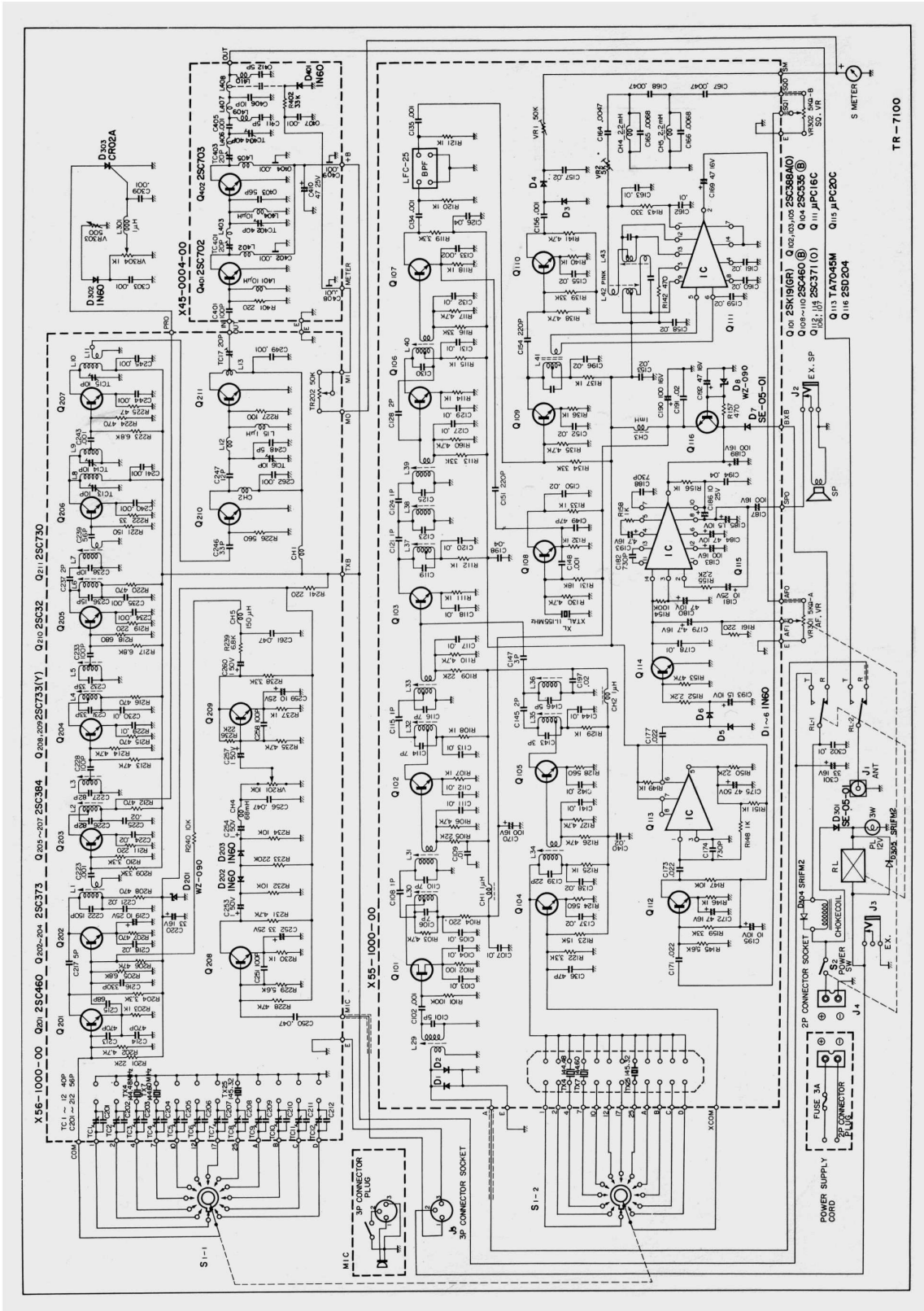
Input voltage:	AC 110-120V/220-240V \pm 10%, 50/60Hz
Output voltage:	DC 9 - 15V, variable
	Standard voltage: DC 13.8V
Output current:	DC 0 - 2.5A
Continuous load current:	Max. 1.5A
Dimensions:	5-5/8" W \times 3-5/8" H \times 7-5/16" D
	143W \times 92H \times 185D (mm)
Weight:	7.48lbs (3.4kg)

* Any of the specifications given here may be changed or modified without notice.

TR-7100 BLOCK DIAGRAM



TR-7100 SCHEMATIC DIAGRAM



TR-7100

We reserve the right to make modifications in these models in accordance with technical developments.

A PRODUCT OF
TRIO ELECTRONICS, INC.
 6-5, 1-CHOME, SHIBUYA, SHIBUYA-KU, TOKYO, JAPAN