



Sanyo 18H-815 Service Manual

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18-transistor, 6-band
Portable Radio

move. 18H-815

SERVICE
MANUAL

SANYO ELECTRIC CO., LTD.

INTERNATIONAL
DIVISION:
SANYO
ELECTRIC
TRADING

*18-transistor, 6-band
Portable Radio*

MODEL 18H-815

SERVICE MANUAL

SANYO



CO.,
LTD.
OSAKA,
JAPAN
(14) 2SB186A
Audio Amplifier
ALIGNMENT
PROCEDURES
AM ALIGNMENT
Thru. Loop Antenna

SANYO

18-transistor, 6-band Portable Radio MODEL 18H-815 SERVICE MANUAL

SANYO ELECTRIC CO., LTD.
INTERNATIONAL DIVISION: SANYO ELECTRIC TRADING CO., LTD.
OSAKA, JAPAN



Transworld

LF.T.
T15
1600KC)
455KC
LF.T.
T14
MW
1600KC)
455KC
i.F.T.
T13
MW
1600KC;
455KC
Oscillator
MW
MW
600KC
Antenna
MW
MW
600KC
Oscillator
SW1
SW
1
2.5MC
Antenna
SW1
SW 1
2.5MC
Oscillator SW2
SW 2
9.0MC
Antenna
SW2
SW 2
9.0MC
Oscillator 49m
49m
6.0MC
Antenna
49m
49m
6.0MC
FM IF ALIGNMENT
SPECIFICATIONS

SPECIFICATIONS

Frequency Range.....	FM 87 - 108 MC	(16) 2SB405R
	SW 1 2.3 - 7.3 MC	(17) 2SD72R
	SW 2 8.0 - 22.0 MC	(18) 2SC537Z
	49m 5.95 - 7.3 MC	Diodes
	MW 520 - 1605 KC	(1) 1S553
	LW 150 - 350 KC	(2) 1S188
Intermediate Frequency.....	FM 10.7 MC	(3) 1S188
	AM 455 KC	(4) 1S188
Transistors	(1) 2SC668E FM RF Amplifier	(5) 1S188
	(2) 2SC545C FM Local Oscillator	(6) SIA3
	(3) 2SC668C FM Converter	(7) 1S188
	(4) 2SC545E FM 1st IF Amplifier	(8) SIA3
	(5) 2SC537 FM 2nd IF Amplifier	(9) SZ-8
	(6) 2SC537 FM 3rd IF Amplifier	Output Power
	(7) 2SA222 AM Converter	Undistor
	(8) 2SC537 AM Local Oscillator	Power Supply
	(9) 2SC537E AM 1st IF Amplifier	12 volts,
	(10) 2SC537 AM 2nd IF Amplifier	or AC a
	(11) 2SD187 Squelch Control	Current Drain
	(12) 2SB303 Audio Amplifier	No sign
	(13) 2SB186A Audio Amplifier	Maximu
	(14) 2SB186A Audio Amplifier	Speaker
	(15) 2SB187 Driver	5" x 7" o
		4 ohm v
		Cabinet Dimensions
		15 1/4
		Net Weight
		10 lbs. (

ALIGNMENT PROCEDURES

FM IF ALIGNMENT
SPECIFICATIONS
Frequency Range---+---+---+---+
FM
87
-
108
MC
(16) 2SB405R
Power Amplifier
SW1
23
-
73
MC
(17) 2SD72R
Power Amplifier
SW2
8.0

AM ALIGNMENT

Sequence of Alignment	Wave Range	Dial Pointer	Signal Generator		Connection high side of Signal Generator	Coil Adjustment	Dial Pointer
			Fre- quency	Modula- tion			
I.F.T. T15	MW	1600KC	455KC	AM 30%	Thru. Loop Antenna		
I.F.T. T14	MW	1600KC	455KC	AM 30%	"		
I.F.T. T13	MW	1600KC	455KC	AM 30%	"		
Oscillator LW	LW	160KC	160KC	AM 30%	"	T-12	320KC
Antenna LW	LW	160KC	160KC	AM 30%	"	L- 9	320KC
Oscillator MW	MW	600KC	600KC	AM 30%	"	T-11	1400KC
Antenna MW	MW	600KC	600KC	AM 30%	"	L-11	1400KC
Oscillator SW1	SW 1	2.5MC	2.5MC	AM 30%	"	T-10	6.5MC
Antenna SW1	SW 1	2.5MC	2.5MC	AM 30%	"	L-13	6.5MC
Oscillator SW2	SW 2	9.0MC	9.0MC	AM 30%	"	T- 9	20MC
Antenna SW2	SW 2	9.0MC	9.0MC	AM 30%	"	L-14	20MC
Oscillator 49m	49m	6.0MC	6.0MC	AM 30%	"	T- 8	6.2MC
Antenna 49m	49m	6.0MC	6.0MC	AM 30%	"	L-16	6.2MC

FM IF ALIGNMENT

22.0
 MC
 (18) 2SC537Z
 Voltage Stabilizer
 49m
 595 -
 7.3
 MC
 Diodes «s+ +++ +eee- (1) 18553
 A.F.C.
 MW
 520
 - 1605
 KC
 - €2) 18188
 FM Limiter
 a
 LW
 150
 -
 350
 KC
 (3) 18188
 FM A.G.C.
 ' oes

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18-transistor, 6-band Portable Radio MODEL 18H-815 SERVICE MANUAL SANYO ELECTRIC CO., LTD.



Transworld

Frequency: + + - sree-see- FM INTERNATIONAL DIVISION: SANYO ELECTRIC TRADING CO., LTD.
 10.7 OSAKA, JAPAN

SPECIFICATIONS

Discriminator	Frequency Range.....	FM 87 - 108 MC	(16) 2SB405R
AM	SW 1 2.3 - 7.3 MC	(17) 2SD72R	
455	SW 2 8.0 - 22.0 MC	(18) 2SC537Z	
KC	49m 5.95 - 7.3 MC	Diodes	(1) 1S553
(5)	MW 520 - 1605 KC	(2) 1S188	
18188	LW 150 - 350 KC	(3) 1S188	
Discriminator	Intermediate Frequency.....	FM 10.7 MC	(4) 1S188
Transistors - cote (1) 2SC668E	AM 455 KC	(5) 1S188	
FM	(1) 2SC668E FM RF Amplifier	(6) SIA3	
RF Amplifier	(2) 2SC545C FM Local Oscillator	(7) 1S188	
(6) SIA3	(3) 2SC668C FM Converter	(8) SIA3	
AM	(4) 2SC545E FM 1st IF Amplifier	(9) SZ-8	
Biasing	(5) 2SC537 FM 2nd IF Amplifier	Output Power	Maximum
(2) 2SC545C	(6) 2SC537 FM 3rd IF Amplifier	Undistor	
FM Local Oscillator	(7) 2SA222 AM Converter	Power Supply	12 volts, or AC a
(7) 18188	(8) 2SC537 AM Local Oscillator	Current Drain	No sign
AM Detector	(9) 2SC537E AM 1st IF Amplifier	Maximum	
(3) 28C668C	(10) 2SC537 AM 2nd IF Amplifier	Speaker	5" x 7" o
FM Converter	(11) 2SD187 Squelch Control	Cabinet Dimensions	15 1/4 x 4
(8) SIA3	(12) 2SB303 Audio Amplifier	Net Weight	10 lbs. (
FM Oscillator Stabilizer	(13) 2SB186A Audio Amplifier		
(4) 2S8C545E	(14) 2SB186A Audio Amplifier		
FM	(15) 2SB187 Driver		
1st IF Amplifier			
(9) SZ-8			
Voltage Detector			
(5) 28C537			
FM 2nd IF Amplifier			
Output Power			
3,000 mW			
(6) 28C537			
FM 3rd IF Amplifier			
Undistorted			
2,000 mW			
(7) 2SA222			

ALIGNMENT PROCEDURES

FM ALIGNMENT

Sequence of Alignment	Wave Range	Dial Pointer	Signal Generator		Connection high side of Signal Generator	Coil Adjustment	Dial Pointer
			Fre- quency	Modula- tion			
I.F.T. T15	MW	1600KC	455KC	AM 30%	Thru. Loop Antenna		
I.F.T. T14	MW	1600KC	455KC	AM 30%	"		
I.F.T. T13	MW	1600KC	455KC	AM 30%	"		
Oscillator LW	LW	160KC	160KC	AM 30%	"	T-12	320KC
Antenna LW	LW	160KC	160KC	AM 30%	"	L- 9	320KC
Oscillator MW	MW	600KC	600KC	AM 30%	"	T-11	1400KC
Antenna MW	MW	600KC	600KC	AM 30%	"	L-11	1400KC
Oscillator SW1	SW 1	2.5MC	2.5MC	AM 30%	"	T-10	6.5MC
Antenna SW1	SW 1	2.5MC	2.5MC	AM 30%	"	L-13	6.5MC
Oscillator SW2	SW 2	9.0MC	9.0MC	AM 30%	"	T- 9	20MC
Antenna SW2	SW 2	9.0MC	9.0MC	AM 30%	"	L-14	20MC
Oscillator 49m	49m	6.0MC	6.0MC	AM 30%	"	T- 8	6.2MC
Antenna 49m	49m	6.0MC	6.0MC	AM 30%	"	L-16	6.2MC

FM IF ALIGNMENT

AM Converter
 Power Supply ----- 12 volts, 8xUM-1 (size "D" flashlight battery)
 (8) 28C537
 AM Local Oscillator
 or AC adaptor (D12-815)
 (9) 28C537E
 AM 1st IF Amplifier
 Current Drain ----- No signal
 30 mA
 (10) 2SC537
 AM
 2nd IF Amplifier ©
 Maximum
 420 mA
 (11) 2SD187
 Squelch Control
 Speaker of these scenes is of the over type permanent dynamic
 (12) 2SB303
 Audio Amplifier
 4 ohm voice coil impedance
 (13) 2SB186A
 Audio Amplifier
 Cabinet Dimensions ----- 15 1/4" (390mm)
 wide x 9 1/4" (240mm) high
 x 4 3/4" (120mm) deep
 (15) 2SB187
 Driver
 Net Weight ----- +++++ 10 lbs. (4.5 kg)
 Coil
 Adjust- Patent
 ment
 or
 12
 320KC
 320KC
 Ft
 ee
 Signal Generator|Trimmer
 Fre-
 |Modula-
 Indication
 Adjust-
 ment
 quency
 tion
 Max. Output
 TO
 Adjustment
 Curve
 Sequence
 of
 Wave
 | Alignment
 Testing
 Equipment
 Connection
 Alignment
 Range | Frequency
 point to TP-1 an oscilloscope to
 test point TP-
 FM RF ALIGNMENT
 Detune T7 and tune
 |
 gain
 and

SANYO

**18-transistor, 6-band
 Portable Radio**

MODEL 18H-815

SERVICE MANUAL

SANYO ELECTRIC CO., LTD.

INTERNATIONAL DIVISION: SANYO ELECTRIC TRADING CO., LTD.
 OSAKA, JAPAN



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SPECIFICATIONS

Frequency Range.....	FM 87 - 108 MC	(16) 2SB405R
	SW 1 2.3 - 7.3 MC	(17) 2SD72R
	SW 2 8.0 - 22.0 MC	(18) 2SC537Z
Driver	49m 5.95 - 7.3 MC	Diodes
Net Weight ----- +++++ 10 lbs. (4.5 kg)	MW 520 - 1605 KC	(1) 1S553
Coil	LW 150 - 350 KC	(2) 1S188
Adjust- Patent	Intermediate Frequency.....	(3) 1S188
ment	FM 10.7 MC	(4) 1S188
or	AM 455 KC	(5) 1S188
12	Transistors	(6) SIA3
320KC	(1) 2SC668E FM RF Amplifier	(7) 1S188
320KC	(2) 2SC545C FM Local Oscillator	(8) SIA3
Ft	(3) 2SC668C FM Converter	(9) SZ-8
ee	(4) 2SC545E FM 1st IF Amplifier	Output Power
Signal Generator Trimmer	(5) 2SC537 FM 2nd IF Amplifier	Maximum
Fre-	(6) 2SC537 FM 3rd IF Amplifier	Undistor
Modula-	(7) 2SA222 AM Converter	Power Supply
Indication	(8) 2SC537 AM Local Oscillator	12 volts,
Adjust-	(9) 2SC537E AM 1st IF Amplifier	or AC a
ment	(10) 2SC537 AM 2nd IF Amplifier	Current Drain
quency	(11) 2SD187 Squelch Control	No signa
tion	(12) 2SB303 Audio Amplifier	Maximu
Max. Output	(13) 2SB186A Audio Amplifier	Speaker
TO	(14) 2SB186A Audio Amplifier	5" x 7" o
Adjustment	(15) 2SB187 Driver	4 ohm v
Curve		Cabinet Dimensions
Sequence		15 1/4
of		x 4
Wave		Net Weight
Alignment		10 lbs. (
Testing		
Equipment		
Connection		
Alignment		
Range Frequency		
point to TP-1 an oscilloscope to		
test point TP-		
FM RF ALIGNMENT		
Detune T7 and tune		
gain		
and		

ALIGNMENT PROCEDURES

AM ALIGNMENT

Sequence of Alignment	Wave Range	Dial Pointer	Signal Generator		Connection high side of Signal Generator	Coil Adjustment	Dial Pointer
			Fre- quency	Modula- tion			
I.F.T. T15	MW	1600KC	455KC	AM 30%	Thru. Loop Antenna		
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I.F.T. T13	MW	1600KC	455KC	AM 30%	"		
Oscillator LW	LW	160KC	160KC	AM 30%	"	T-12	320KC
Antenna LW	LW	160KC	160KC	AM 30%	"	L- 9	320KC
Oscillator MW	MW	600KC	600KC	AM 30%	"	T-11	1400KC
Antenna MW	MW	600KC	600KC	AM 30%	"	L-11	1400KC
Oscillator SW1	SW 1	2.5MC	2.5MC	AM 30%	"	T-10	6.5MC
Antenna SW1	SW 1	2.5MC	2.5MC	AM 30%	"	L-13	6.5MC
Oscillator SW2	SW 2	9.0MC	9.0MC	AM 30%	"	T- 9	20MC
Antenna SW2	SW 2	9.0MC	9.0MC	AM 30%	"	L-14	20MC
Oscillator 49m	49m	6.0MC	6.0MC	AM 30%	"	T- 8	6.2MC
Antenna 49m	49m	6.0MC	6.0MC	AM 30%	"	L-16	6.2MC

FM IF ALIGNMENT

symmetry
 of
 response
 curve.
 tune
 T-5 for max.
 gain
 and sym-
 metry
 of response
 curve.
 tune
 T-4 for
 max
 gain
 and
 sym-
 metry
 of response
 curve.
 tune T-7 for symmetry and max.
 gain of response
 curve.
 Coil
 Adjust-
 Dial
 Pointer
 ment
 T-2
 104.0 MC
 Signal
 Generator
 Freque-
 |Modula-
 Trimmer
 Adjust-
 ment
 Indicator
 ncy
 tion
 T-3
 104.0 MC | 104.0 MC | 22.5 KC;
 Ct-2
 Max output
 104.0 MC | 22.5 KC
 Ct-1
 Max output

SANYO

**18-transistor, 6-band
Portable Radio**

MODEL 18H-815

SERVICE MANUAL

SANYO ELECTRIC CO., LTD.

INTERNATIONAL DIVISION: SANYO ELECTRIC TRADING CO., LTD.
OSAKA, JAPAN



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SPECIFICATIONS

Frequency Range.....	FM	87	-	108	MC	(16)	2SB405R
	SW 1	2.3	-	7.3	MC	(17)	2SD72R
	SW 2	8.0	-	22.0	MC	(18)	2SC537Z
	49m	5.95	-	7.3	MC	(1)	1S553
	MW	520	-	1605	KC	(2)	1S188
	LW	150	-	350	KC	(3)	1S188
Intermediate Frequency.....	FM	10.7	MC	(4)	1S188		
	AM	455	KC	(5)	1S188		
Transistors	(1)	2SC668E	FM RF Amplifier	(6)	SIA3		
	(2)	2SC545C	FM Local Oscillator	(7)	1S188		
	(3)	2SC668C	FM Converter	(8)	SIA3		
	(4)	2SC545E	FM 1st IF Amplifier	(9)	SZ-8		
Diods							

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