

# ICF-PRO70/PRO80

## SONY<sup>®</sup> SERVICE MANUAL

US Model  
Canadian Model  
AEP Model  
UK Model  
E Model  
Australian Model  
*ICF-PRO80*  
AEP Model  
E Model  
*ICF-PRO70*

### SUPPLEMENT-1

File this supplement with the service manual.

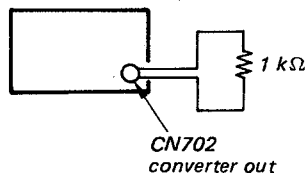
**Subject:** 1. Converter Frequency Adjustment is added.  
2. Parts No. of C713 on converter main board are added.  
3. French model is added in ICF-PRO80.

#### 1. Converter Frequency Adjustment (ICF-PRO80 only)

**Note:** Frequency converter  
FRQ-80: Except French model  
FRQ-81: French model only

**Procedure:**

frequency converter  
(FRQ-80 or FRQ-81)

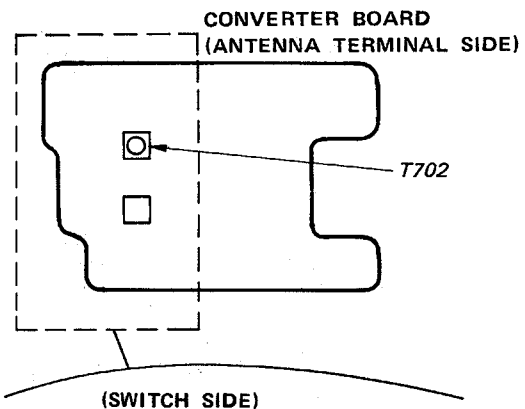


- 1) Connect a frequency counter to the point (A) (output of the OSC frequency).
- 2) Terminate between signal line to ground of CN702 by 1 kΩ. (Refer to figure.)
- 3) Apply dc 3 V from battery terminal of frequency converter.
- 4) Adjust T702 so that the frequency is as shown below. If not, change the capacity of C713 and adjust again.

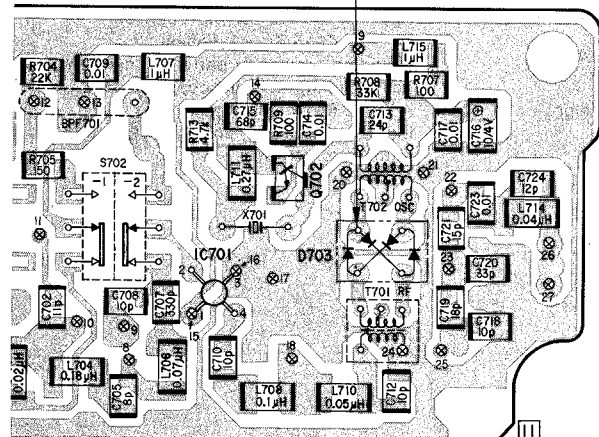
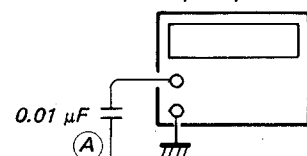
Frequency converter	Adjustment frequency
FRQ-80	115 MHz ± 0.5 kHz
FRQ-81	100 MHz ± 0.5 kHz

OSC frequency	C713
high	22pF
↕	24pF
low	27pF

**Adjustment Location:**



frequency counter



2. There are three types of capacitors as C713 in frequency converter of ICF-PRO80 because it is a capacitor for adjustment.

Ref. No.	Part No.	Description				
C713	1-163-101-00	CERAMIC CHIP	22pF	5%	50V	
C713	1-163-102-00	CERAMIC CHIP	24pF	5%	50V	
C713	1-163-103-00	CERAMIC CHIP	27pF	5%	50V	

3. French model of ICF-PRO80 is the same as AEP model of ICF-PRO80 except for the following portions.

- Model Number Label
- Frequency Converter
- Instruction Manual, Individual Carton

### SPECIFICATIONS (ICF-PRO80 French model only)

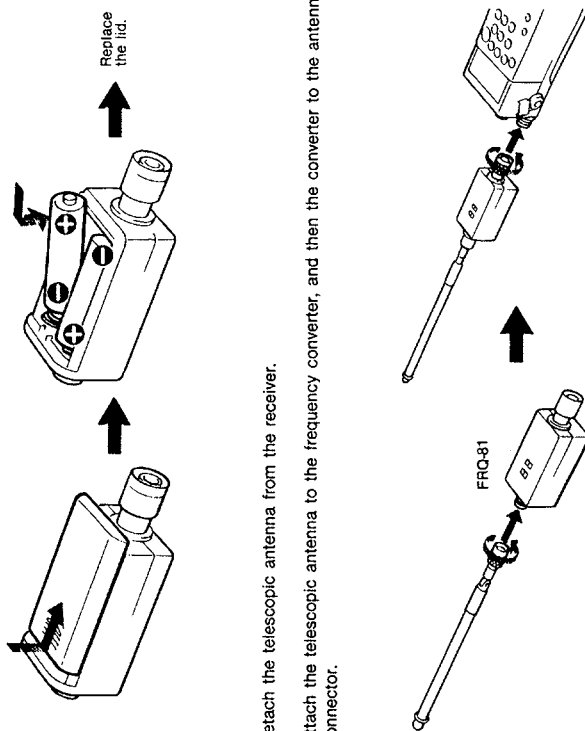
Circuit system	LW/MW/SW/VHF: Dual conversion superheterodyne FM: Superheterodyne	<b>FRQ-81 frequency converter</b> Shift frequency 100 MHz Attenuator 0 dB/ -30 dB
Frequency coverage	150 kHz - 108 MHz (without using the FRQ-81 frequency converter) 100.15 - 208 MHz (using the FRQ-81)	Power requirements 3 V DC, two size AA (R6) batteries Battery life Approx. 80 hours using Sony SUM-3(NS) batteries
Antennas	SW/VHF/FM: Telescopic antenna LW/MW: Built-in ferrite bar antenna External antenna connector: TNC connector	Dimensions Approx. 40 × 98 × 31 mm (w/h/d) (1 <sup>5</sup> / <sub>8</sub> × 3 <sup>7</sup> / <sub>8</sub> × 1 <sup>1</sup> / <sub>4</sub> inches) including projecting parts and controls
Speaker	7 × 3.5 cm	Weight Approx. 120 g (4.2 oz) including batteries
Power output	400 mW (at 10% harmonic distortion)	<b>Accessories supplied</b> Telescopic antenna (1) Earphone (1) Shoulder strap (1) Carrying case (1) Antenna holder (1) Antenna plug adaptor (BNC ↔ TNC) (1) FRQ-81 frequency converter (1) Wave Handbook (1)
Output jack	Earphone jack (minijack) (1) 8 ohm Recording output jack (minijack) (1) Output level 0.775 mV (-60 dB) Output impedance 1 kilohm	Design and specifications subject to change without notice.
Power requirements	6 V DC (for radio/computer backup) Four size AA (R6) batteries or BP-23 rechargeable battery pack (optional) DC IN 6 V jack accepts: AC-D4 AC power adaptor (optional) for use on 100, 120, 220 or 240 V AC depending on the model type of the AC-D4 available in your country DCC-127A or DCC-120 car battery cord (optional) for use with 12 V car battery DCC-240 car battery cord (optional) for use with 24 V car battery EBP-6 battery case (optional) using four size C (R14) batteries	
Battery life	Approx. 10 hours using Sony SUM-3(NS) batteries	
Dimensions	Approx. 90 × 182 × 50 mm (w/h/d) (3 <sup>5</sup> / <sub>8</sub> × 7 <sup>1</sup> / <sub>4</sub> × 2 inches) including projecting parts and controls, not including the telescopic antenna	
Weight	Approx. 650 g (1 lb 7 oz) including batteries, shoulder strap and telescopic antenna	

## TO CONVERT THE FREQUENCY COVERAGE (ICF-PRO80 French model only)

The supplied FRQ-81 frequency converter shifts the frequency coverage of the receiver by 100 MHz, i.e. to 100.15-208 MHz, to allow reception of air band, PSB (Public Service Band) and TV VHF channels, etc.

### INSTALLATION OF THE FREQUENCY CONVERTER

- 1 Insert the two optional size AA (R16) batteries into the converter.
- 2 Detach the telescopic antenna from the receiver.
- 3 Attach the telescopic antenna to the frequency converter, and then the converter to the antenna connector.

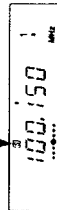


**Battery life**  
Approximately 80 hours of converter operation can be expected with the Sony SUM-3(NS) batteries. When the POWER indicator on the converter becomes dim, replace both batteries.

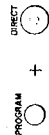
**Note**  
When the converter is not used for a long period of time, remove the batteries to avoid damage caused by battery leakage and corrosion.

### TO SHIFT THE FREQUENCY DISPLAY

- 1 Remove the battery case from the battery compartment of the receiver.
- 2 Set FREQ.DISPLAY inside the battery compartment to SHIFT.
- 3 Replace the battery case.
- 4 Depress POWER.  
The [S] (shift) indicator and a frequency shifted by 100 MHz will appear in the window.  
Shift indicator



- 5 Keeping PROGRAM pressed, press DIRECT.  
The [S] indicator will blink.



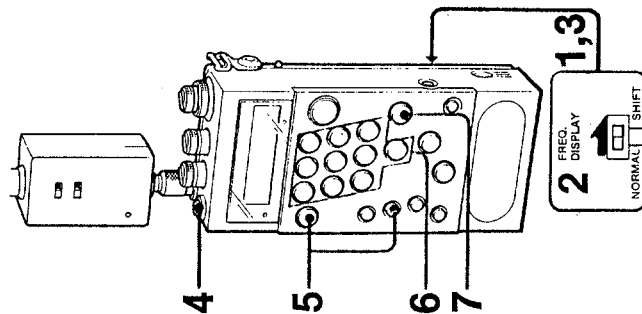
- 6 While the [S] indicator is blinking, input the frequency to be shifted by the converter, 100 MHz, with the number buttons.



- 7 Press EXECUTE.



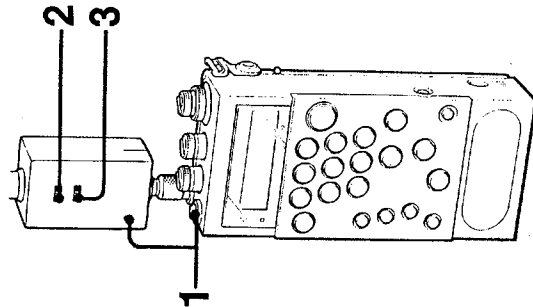
Now the frequencies 100.150-208.000 MHz can be displayed to match the received station frequencies.



**To check the shifted frequency**  
Keeping FUNCTION pressed, press KEY/MEMORY PROTECT. While the buttons are pressed, the shifted frequency is displayed in the window.

## TO CONVERT THE FREQUENCY COVERAGE

### TUNING



- Depress **POWER** on the receiver. The converter will be turned on automatically and the **POWER** indicator on the converter will light.
- Set the **ATTENUATOR** selector on the converter to 0 dB.
 

ATTENUATOR	0 dB	-30 dB
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- Set the **FILTER** selector on the converter according to the frequency of the station to be tuned in.
 

FILTER	100.15-174 MHz	174-208 MHz
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- Tune in the desired station with any of the tuning methods on pages 16-28. If necessary, select the appropriate detection mode. See "To select the detection mode" on page 35.

After listening, press to turn off **POWER**.

**Special notes on tuning in the shifted frequency coverage**

#### Direct tuning

With the converter installed, always input 6 digits of the frequency for direct tuning. Righthand 000 cannot be omitted.

#### Memory tuning and memory scan tuning

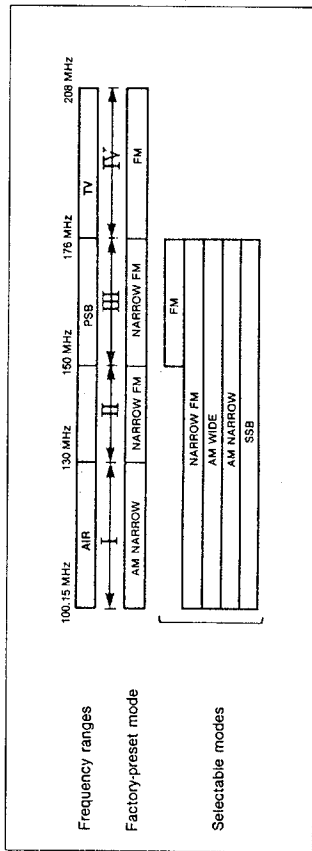
Store the stations in the 100.15-174 MHz range and those in the 174-208 MHz range on separate memory pages. If they are stored in a mixed manner on one page, memory scanning may not be carried out correctly because the **FILTER** selector cannot be switched during scanning.

#### Program memory scan tuning

Do not program the stations in the 100.15-174 MHz range and those in the 174-208 MHz range in a mixed manner. Otherwise, program memory scan tuning may not be carried out correctly because the **FILTER** selector cannot be switched during scanning.

### To select the detection mode

The selectable detection modes in the 100.15-208 MHz range are as follows:



- When tuning in airband, PSB and TV stations, set to the following detection modes.
  - Air band (118-136 MHz) → AM NARROW
  - PSB (146-174 MHz) → NARROW FM
  - TV (174-208 MHz) → FM
- For other types of broadcasts and radio communications, set to the appropriate detection mode.

#### Notice

When using the supplied converter, reception of the signals around 200 MHz may be difficult because of internal spurious signals generated by the built-in oscillators.

**To resume the original frequency coverage of the receiver**  
 Detach the converter from the antenna connector and replace the telescopic antenna. Set **FREQ. DISPLAY** inside the battery compartment to **NORMAL**.

#### For improved reception


If the received sound is distorted or noisy due to interference from an adjacent station, set **ATTENUATOR** on the converter to -30 dB.

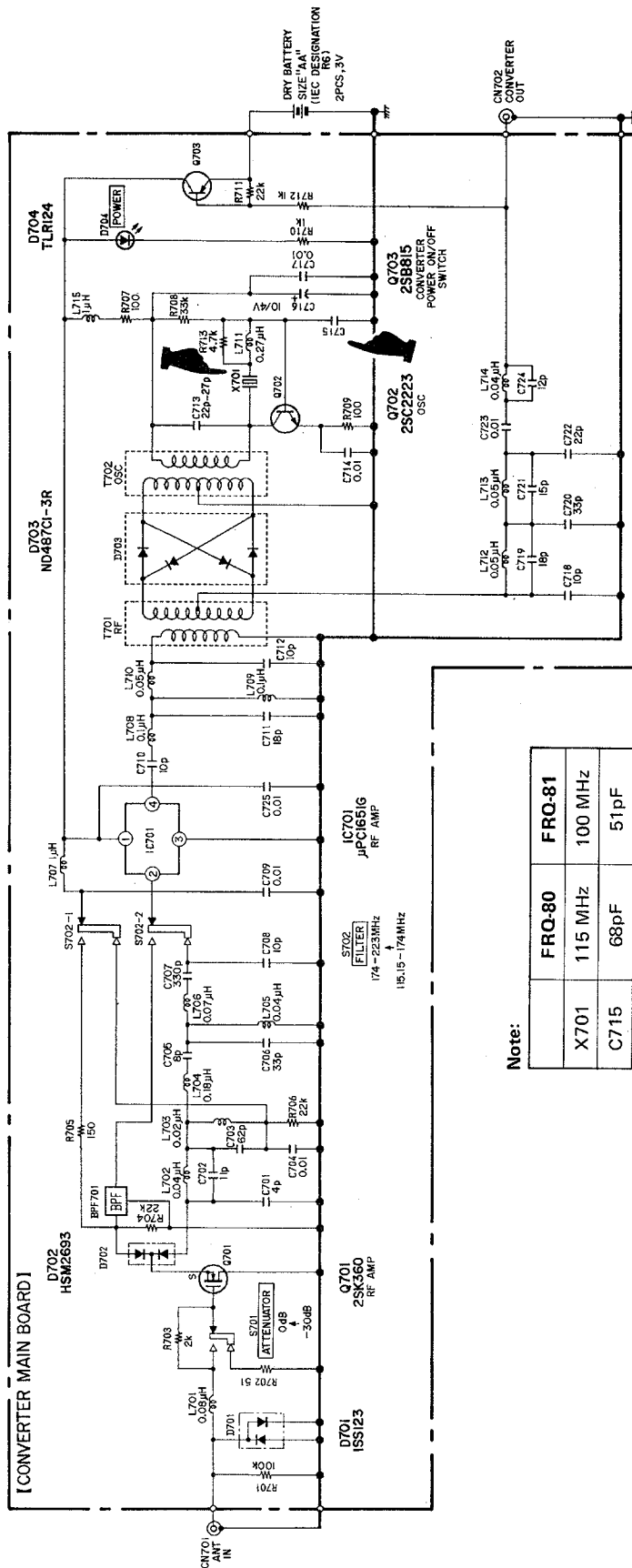
#### Tuning intervals in the 100.15-208 MHz range

Frequency coverage	Interval
100.150-100.528 MHz	3 kHz
100.531-101.602 MHz	9 kHz*
101.605-149.995 MHz	5 kHz
150.000-175.995 MHz	5 kHz**
176-208 MHz	50 kHz

\* The tuning interval can be changed to 10 kHz. See page 14.  
 \*\* When the detection mode is FM, the interval of this range will be 50 kHz.

CONVERTER BOARD SCHEMATIC DIAGRAM (ONLY FOR ICF-PRO80)

 : different portion



Note:

FR0-80	FR0-81
X701 115 MHz	100 MHz
C715 68pF	51pF

- Only the following parts are different from that of AEP model.

				<b>AEP model</b>		<b>French model</b>	
<u>Page</u>	<u>No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Part No.</u>	<u>Description</u>		
33	35	*3-898-202-01	LABEL, MODEL NUMBER (U)	*3-897-860-01	LABEL, MODEL NUMBER (AE)		
35	101	3-898-234-01	LID, BATTERY CASE	3-898-234-21	LID, BATTERY CASE		
35	109	3-898-241-01	COVER (A)	3-898-241-21	COVER (A)		
35, 36	918	A-3665-026-A	MOUNTED PCB, CONVERTER	A-3665-031-A	MOUNTED PCB CONVERTER		
38	C715	1-163-113-00	CERAMIC CHIP 68pF 5% 50V	1-163-110-00	CERAMIC CHIP 51pF 5% 50V		
43	X701	1-567-871-11	VIBRATOR, CRYSTAL (115MHz)	1-577-211-11	VIBRATOR, CRYSTAL (100MHz)		
43		3-898-210-01	CARTON, INDIVIDUAL	*3-893-786-01	CARTON, INDIVIDUAL		
43		3-990-095-11	MANUAL, INSTRUCTION (ENGLISH/FRENCH/SPANISH)	3-786-591-11	MANUAL, INSTRUCTION (ENGLISH/FRENCH/SPANISH)		
43		3-990-095-41	MANUAL, INSTRUCTION (GERMAN/DUTCH/SWEDISH)	_____			

# ICF-PRO70/PRO80

## SONY SERVICE MANUAL

### SUPPLEMENT-2

File this supplement with the Service Manual.

Subject : Frequency converter supplied with  
ICF-PRO80 has been supplied for  
assembly.

*US Model*  
*Canadian Model*  
*AEP Model*  
*UK Model*  
*E Model*  
*Australian Model*  
*ICF-PRO80*  
*AEP Model*  
*E Model*  
*ICF-PRO70*

Destination	Part No.	description
Except French model	A-3614-013-A	Frequency Converter Ass'y (FRQ-80)
French model	A-3614-016-A	Frequency Converter Ass'y (FRQ-81)