

**SONY**<sup>®</sup>

HD CAMERA REMOTE CONTROL UNIT

# HDCR-50




***HDVS***

MAINTENANCE MANUAL

1st Edition (Revised 1)

Serial No. 10001 and Higher

## SAFETY RELATED COMPONENT WARNING

Components identified by shading and  marked on the schematic diagrams and parts list are critical to safe operation. Replace these components with SONY parts whose part numbers appear as shown in this manual or in supplements published by SONY.

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2. SCOPE OF THE STUDY

The study is limited to the following areas:  
1. The study is limited to the following areas:  
2. The study is limited to the following areas:  
3. The study is limited to the following areas:  
4. The study is limited to the following areas:

3. OBJECTIVES OF THE STUDY

The objectives of the study are:  
1. To identify the factors influencing the study:  
2. To analyze the impact of the study:  
3. To evaluate the effectiveness of the study:  
4. To provide recommendations for the study:

4. RESEARCH METHODOLOGY

The research methodology used in this study is:  
1. The research methodology used in this study is:  
2. The research methodology used in this study is:  
3. The research methodology used in this study is:

5. DATA COLLECTION AND ANALYSIS

The data collection and analysis process is:  
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2. The data collection and analysis process is:  
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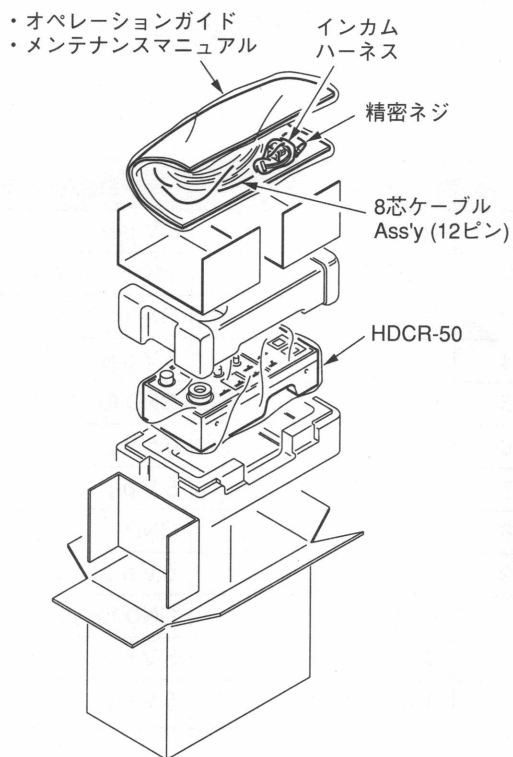
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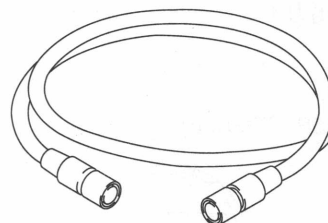
# 第1章 設置

## 1-1. 開梱と再梱包

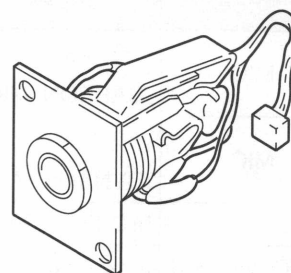


## 1-2. 標準付属品

- 8芯ケーブルASSY (12ピン) : 1個  
(Sony Parts No. 1-574-495-31)  
HDCA-50又はHDCD-50と接続する際に使用します。



- インカムハーネス : 1個 (Sony Parts No. 1-950-217-12)  
工場出荷時インカム取付板にはXLR型コネクタが付いて  
います。110型ジャックを使用する場合に交換して下さい。



- 精密ネジ (+P2.6×4) : 2個 (Sony Parts No. 7-627-556-38)  
上記のインカムハーネスを取り付ける際に使用します。

- オペレーションガイド : 1冊
- メンテナンスマニュアル : 1冊

### 1-3. 適合コネクタ/ケーブル

#### 1-3-1. コネクタの入出力信号

●主なコネクタの入出力信号は、次の通りです。

INCOM 大型110号ジャック (標準付属品)  
 入力インピーダンス5~10 kΩ  
 出力インピーダンス300 Ω不平衡

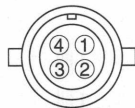
INCOM (5P, FEMALE)



(EXT VIEW)

Pin No.	SIGNAL	SPECIFICATION
1	INCOM MIC <sup>-</sup>	-20 dBs (CARBON MIC)
2	INCOM MIC <sup>+</sup>	-60 dBs (DYNAMIC MIC)
3	GND	MIC SHIELD & RECEIVE GND
4	INCOM RECEIVE OUT	max. 0 dBs
5	(Spare)	No Connection

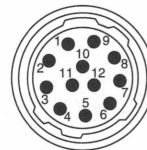
DC 12 V OUT (4P, FEMALE)



(EXT VIEW)

Pin No.	SIGNAL	SPECIFICATION
1	GND	GND for UNREG
2	(Spare)	No Connection
3	(Spare)	No Connection
4	UNREG	+10.5~+17 V

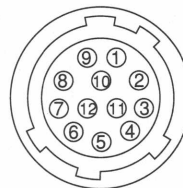
I/O (12P, MALE)



(EXT VIEW)

Pin No.	SIGNAL	SPECIFICATION
1	RX (PR-ADP)	5 V p-p
2	UNREG	+10.5~+17 V
3	POWER ON	GND
4	SCK	5 V p-p
5	GND	GND for INCOM
6	INCOM	0.5 V p-p
7	RX (VTR)	5 V p-p
8	REMOTE	GND
9	SDA	5 V p-p
10	GND	GND for UNREG
11	TX (PR-ADP)	5 V p-p
12	TX (VTR)	5 V p-p

AUX (12P, FEMALE)



(EXT VIEW)

Pin No.	SIGNAL	SPECIFICATION
1	GND	GND for UNREG
2	UNREG	+10.5~+17 V
3	(Spare)	No Connection
4	SCL	5 V p-p
5	SDA	5 V p-p
6	FOCUS	Not used
7	AUX	No Connection
8	(Spare)	No Connection
9	(Spare)	No Connection
10	(Spare)	No Connection
11	(Spare)	No Connection
12	(Spare)	No Connection

### 1-3-2. 接続コネクタ

設置時、サービス時等において、コネクタパネル部の各種コネクタにケーブルを接続する際には、その先端に次に記するコネクタ又は、同等品を使用して下さい。

コネクタ機能名称	接続するケーブル側のコネクタの部品番号および名称
INCOM (5P, FEMALE)	1-508-363-11 PLUG, 5P MALE CANNON XLR-5-11C equality
INCOM (JACK)	1-506-762-11 PULG (110)
DC 12 V OUT (4P, FEMALE)	1-560-343-00 PLUG, 4P MALE
I/O (12P, MALE)	1-562-221-51 PLUG, 12P FEMALE
AUX (12P, FEMALE)	1-564-360-11 PLUG, 12P MALE HRS HR10-10PA-12P equality

### 1-4. 基板内スイッチの機能

#### AU-167基板

- S1 (CARBON/DYNAMIC)

MICの種類 (CARBON又はDYNAMIC) に合わせて切り換えます。

工場出荷時は「CARBON」に設定されています。

#### IF-349基板

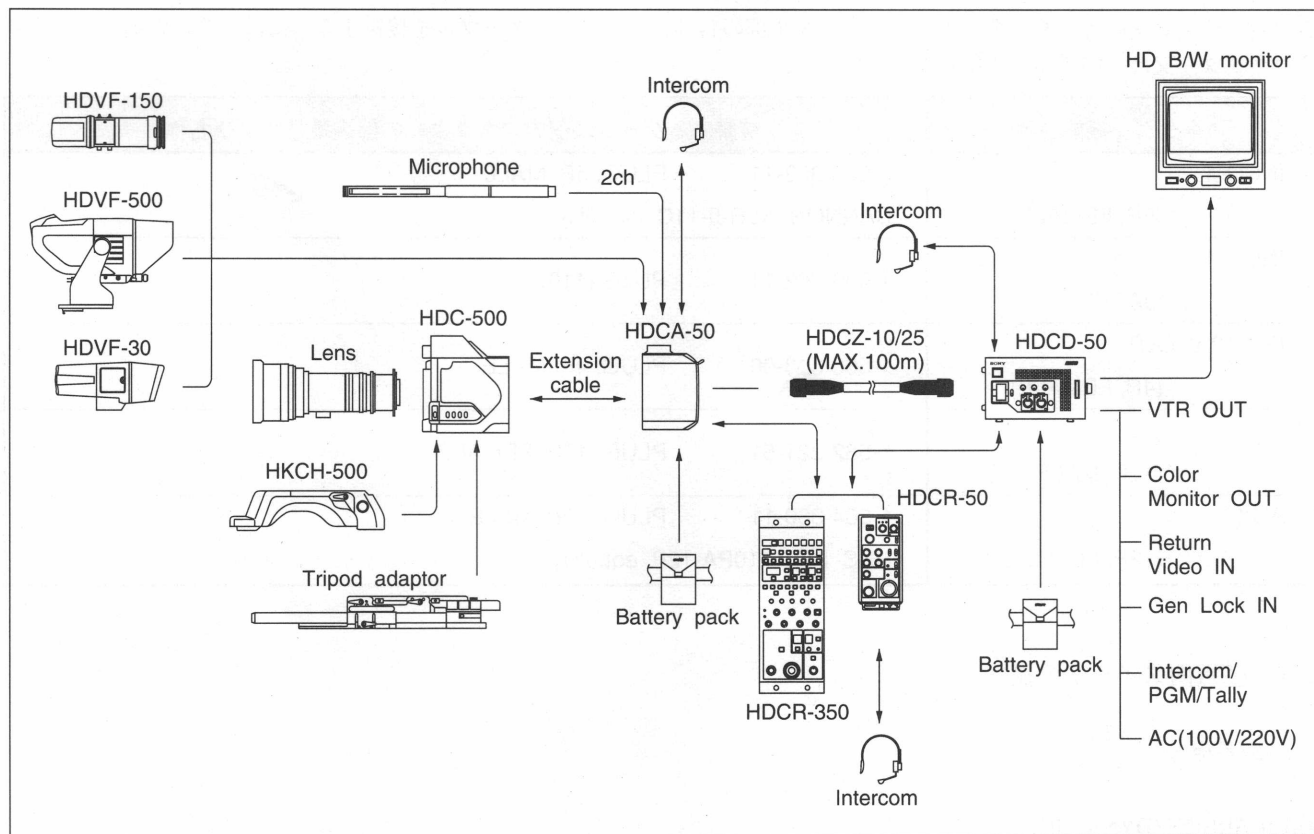
- S104

現在未使用なので「OFF」にしてあります。

- S112 (CPU RESET)

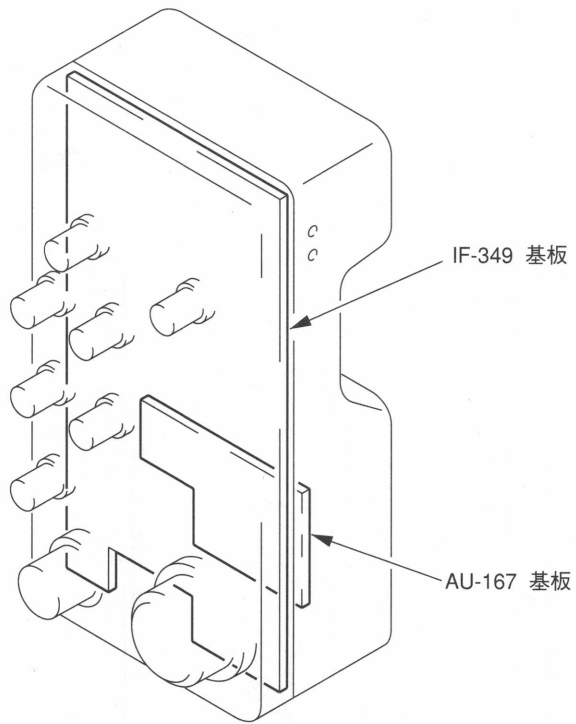
CPUをリセットします。

1-5. システム接続



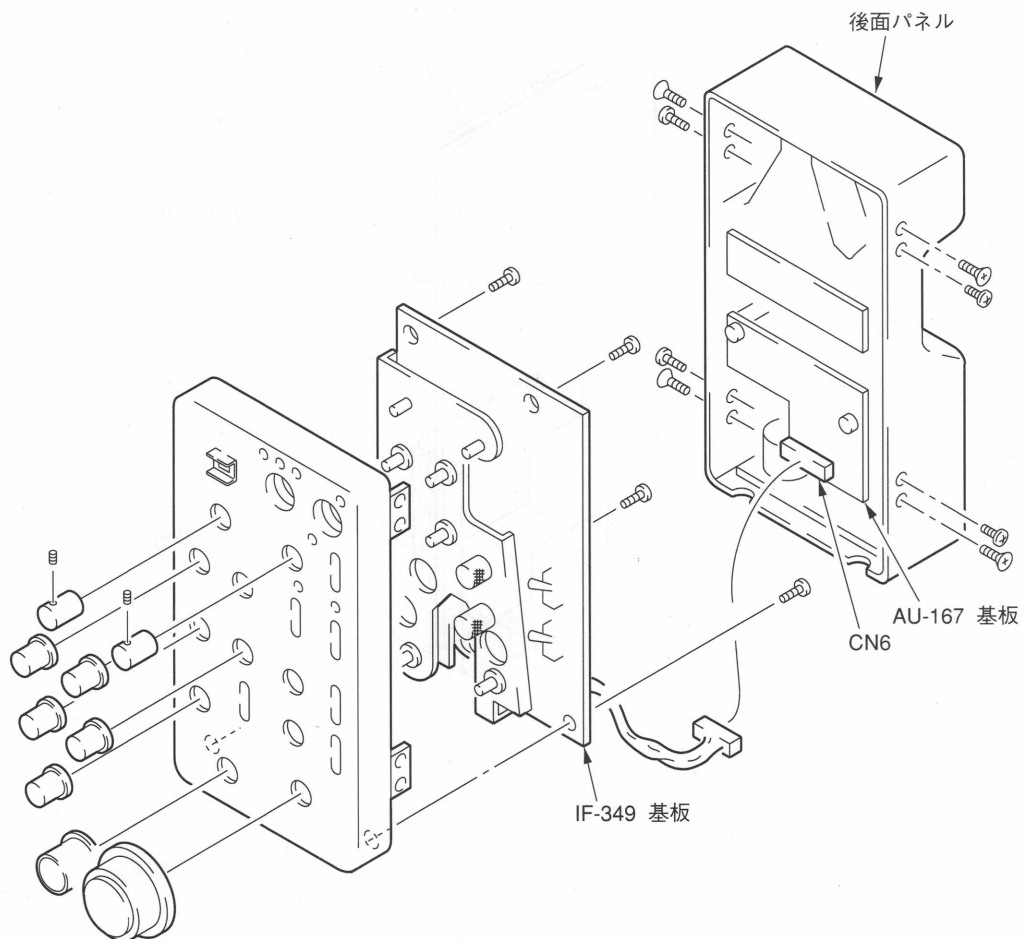
## 第2章 サービスインフォメーション

### 2-1. 基板配置図



## 2-2. 外装の外し方

1. セットスクリュウ (2本) を外し、つまみ (9個) を外します。
2. 後面パネルのねじ (8本) を外し、AU-167基板のコンネクターCN6を外します。
3. IF-349基板のねじ (5本) を外し、IF-349基板を外します。



## 2-3. サービス上の注意事項

### 2-3-1. PROM IC

PROM ICにはオリジナル品名の末尾にそのプログラムの名称が記載されています。下表にはその名称が太い文字で示されています。

また、バージョン変更された場合、この末尾の名称が変わります。オリジナル品名のみ(プログラム化されていない)は絶対に使用しないこと。

なお、各基板に使われているICは全てソケット化しています。

基板	Ref. No	名称
IF-349	IC 117	<b>9800-IF349-V1.0</b>
	IC 118	<b>27C512-RMC-V1.0</b>

### 2-3-2. 補修用部品の注意事項

#### (1) 安全重要部品

回路図、分解図、電気部品表中、△印付きの部品は安全性を維持するために重要な部品です。従って、これらの部品を交換するには必ず指定の部品と交換して下さい。

#### (2) 部品の共通化

ソニーから供給される部品はセットに実装されているものと異なることがあります。これは部品の共通化、改良等によるものです。分解図は電気部品表中には現時点での共通化された部品が記載されています。

#### (3) 部品在庫

分解図、電気部品表中、SP欄が"S"で示されている部品は常時在庫しています。

SP欄が"O"で示されている部品は交換頻度が低い部品であるので在庫しないことがあり、納期が長くなる場合があります。

#### (4) コンデンサ、インダクタ、抵抗の単位

回路図、分解図、電気部品表中、特に明記したものを除き、下記の単位は省略されています。

コンデンサ :  $\mu\text{F}$

インダクタ :  $\mu\text{H}$

抵抗 :  $\Omega$

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# 第3章 調整要項

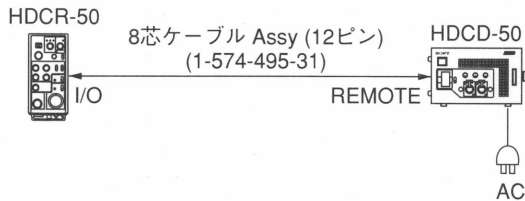
## 3-1. 測定器

- オーディオ発振器
- オーディオレベルメーター
- オシロスコープ
- HD CAMERA SIGNAL DISTRIBUTOR (HDCD-50)

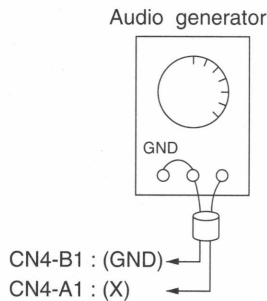
又は、DC安定化電源 (12 V dc)

※ DC安定化電源を使用する場合には、AU-167基板の CN2-A1 (+12 V) と E1 (GND) にDC電圧を供給して下さい。

## 3-2. 接続図



## 3-3. オーディオ接続方法



## 3-4. RMT-TALK調整

### 注意事項

- **RV2/AU-167基板**→メカニカルセンター (工場出荷時)
- 下記の調整を行う時には、AU-167基板のTP2とE1の間に 200 Ω (1/4 W) を接続してください。
- AU-167基板のCN4-B1とCN4-A2間をショートします。
- 使用になるマイクの種類によって、(A) 又は、(B) のどちらかで調整して下さい。

### (A) S1: C側の場合

- (1) S1がC側になっていること。
- (2) 入力点 : CN4-A1 (GND: CN4-B1) /AU-167基板  
入力レベル : -20 dBu
- (3) 測定点 : TP2 (GND: E1)/AU-167基板  
調整箇所 : **RV3/AU-167基板**  
規格 : 0.5±0.01 V p-p (200 Ω終端)

### (B) S1: D側の場合

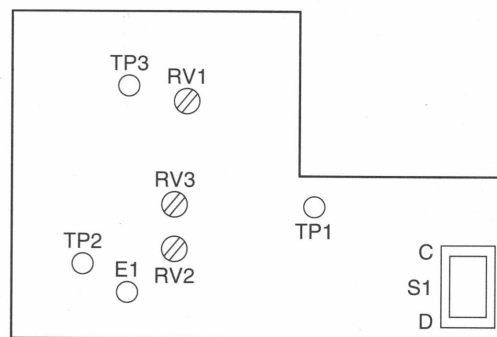
- (1) S1がD側になっていること。
- (2) 入力点 : CN4-A1 (GND: CN4-B1) /AU-167基板  
入力レベル : -60 dBu
- (3) 測定点 : TP2 (GND: E1)/AU-167基板  
調整箇所 : **RV3/AU-167基板**  
規格 : 0.5±0.01 V p-p (200 Ω終端)

## 3-5. BALANCE調整

- (1) 上記 (A) 又は、(B) のどちらかを選択して下さい。  
そして、手順 (1) (2) を行った後で、下記の手順 (2) を行ってください。
- (2) 測定点 : CN5-B3 (GND: E1)/AU-167基板  
調整箇所 : **RV1/AU-167基板**  
規格 : 最小レベル

**注意事項:** 調整終了後、下記の項目を行って下さい。

1. 200 Ωを外す。
2. CN4-B1とCN4-A2間のショートを解除する。



AU-167 Board (COMPONENT SIDE)

140-1111

140

140-1111-1000  
140-1111-1001  
140-1111-1002  
140-1111-1003  
140-1111-1004  
140-1111-1005  
140-1111-1006  
140-1111-1007  
140-1111-1008  
140-1111-1009  
140-1111-1010

140-1111-1011

140-1111-1012

140-1111-1013

140-1111-1014  
140-1111-1015  
140-1111-1016  
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140-1111-1050

140-1111-1051

140-1111-1052

140-1111-1053

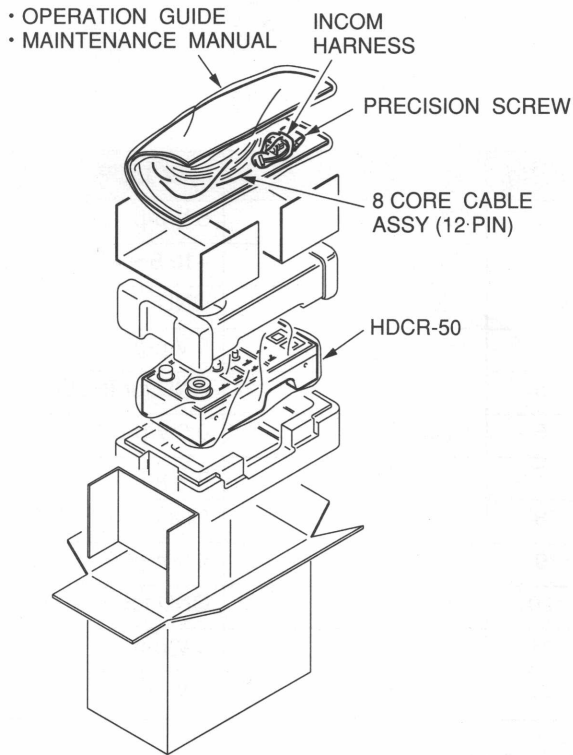
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140-1111-1072

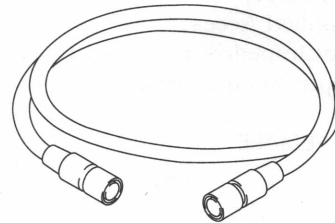
# SECTION 1 INSTALLATION

## 1-1. PACKING AND UNPACKING

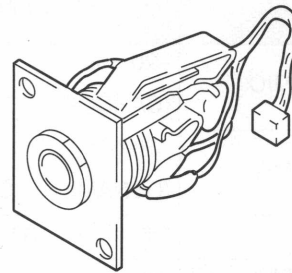


## 1-2. SUPPLIED ACCESSORIES

- 8 CORE CABLE ASSY (12 PIN) : ×1  
(Sony Parts No. 1-574-495-31)  
Use for connection with the HDCA-50 or HDCD-50.



- INCOM HARNESS : (Sony Parts No. 1-950-217-12)  
The XLR type connector is installed on the INCOM bracket when shipping at the factory. So, be sure to replace the connector when using the 110 type Jack.



- PRECISION SCREW +P2.6×4 : ×2  
(Sony Parts No. 7-627-556-38)  
Used to fix the INCOM HARNESS.

- OPERATION GUIDE : ×1
- MAINTENANCE MANUAL : ×1

### 1-3. CONNECTOR/CABLES

#### 1-3-1. Connector Input/Output Signals

•The main connector Input/Output signals are as follows.

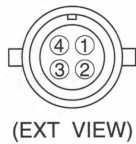
INCOM No. 110 Type Large Jack  
(Supplied Accessories)  
Input Impedance 5 kΩ to 10 kΩ  
Output Impedance 300 Ω Unbalanced

INCOM (5P, FEMALE)



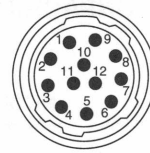
Pin No.	SIGNAL	SPECIFICATION
1	INCOM MIC <sup>-</sup>	-20 dBs (CARBON MIC)
2	INCOM MIC <sup>+</sup>	-60 dBs (DYNAMIC MIC)
3	GND	MIC SHIELD & RECEIVE GND
4	INCOM RECEIVE OUT	max. 0 dBs
5	(Spare)	No Connection

DC 12 V OUT (4P, FEMALE)



Pin No.	SIGNAL	SPECIFICATION
1	GND	GND for UNREG
2	(Spare)	No Connection
3	(Spare)	No Connection
4	UNREG	+10.5~+17 V

I/O (12P, MALE)



Pin No.	SIGNAL	SPECIFICATION
1	RX (PR-ADP)	5 V p-p
2	UNREG	+10.5~+17 V
3	POWER ON	GND
4	SCK	5 V p-p
5	GND	GND for INCOM
6	INCOM	0.5 V p-p
7	RX (VTR)	5 V p-p
8	REMOTE	GND
9	SDA	5 V p-p
10	GND	GND for UNREG
11	TX (PR-ADP)	5 V p-p
12	TX (VTR)	5 V p-p

AUX (12P, FEMALE)



Pin No.	SIGNAL	SPECIFICATION
1	GND	GND for UNREG
2	UNREG	+10.5~+17 V
3	(Spare)	No Connection
4	SCL	5 V p-p
5	SDA	5 V p-p
6	FOCUS	Not used
7	AUX	No Connection
8	(Spare)	No Connection
9	(Spare)	No Connection
10	(Spare)	No Connection
11	(Spare)	No Connection
12	(Spare)	No Connection

### 1-3-2. Connectors

When cable with connectors are set to the respective connectors on the connector panel during installation or service, the specified or equivalent connectors with cables, or the specified cable assemblies should be used, these are listed as follows;

Connector function	Parts No. and name of connector with cable
INCOM (5P, FEMALE)	1-508-363-11 PLUG, 5P MALE CANNON XLR-5-11C equality
INCOM (JACK)	1-506-762-11 PULG (110)
DC 12 V OUT (4P, FEMALE)	1-560-343-00 PLUG, 4P MALE
I/O (12P, MALE)	1-562-221-51 PLUG, 12P FEMALE
AUX (12P, FEMALE)	1-564-360-11 PLUG, 12P MALE HRS HR10-10PA-12P equality

### 1-4. FUNCTION OF SWITCHES ON PC BOARD

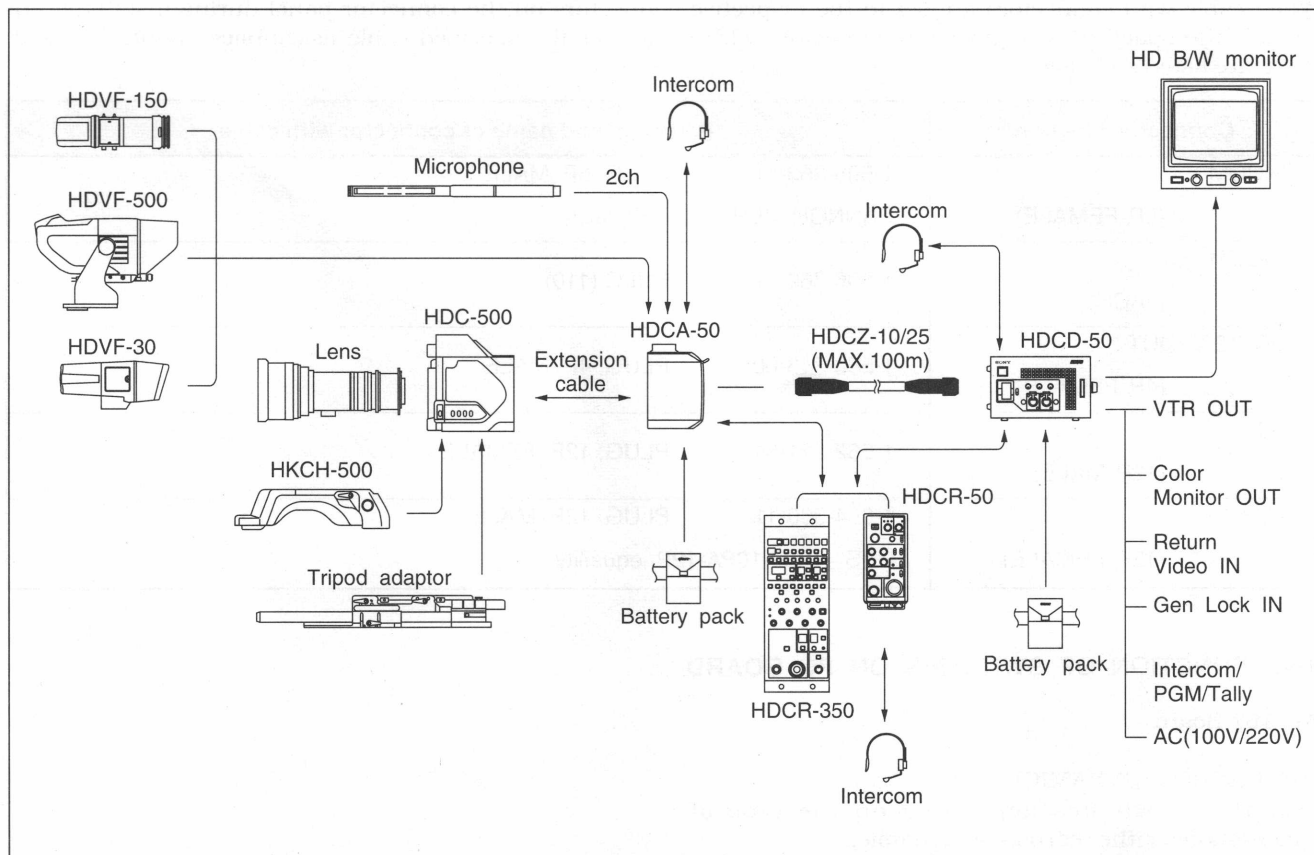
#### AU-167 Board

- S1 (CARBON/DYNAMIC)  
Set these switches depending on the type of microphone, either carbon on dynamic.  
The switch is factory-set to CARBON.

#### IF-349 Board

- S104  
Not used. Set the switch to OFF.
- S112 (CPU RESET)  
This switch is used to reset CPU.

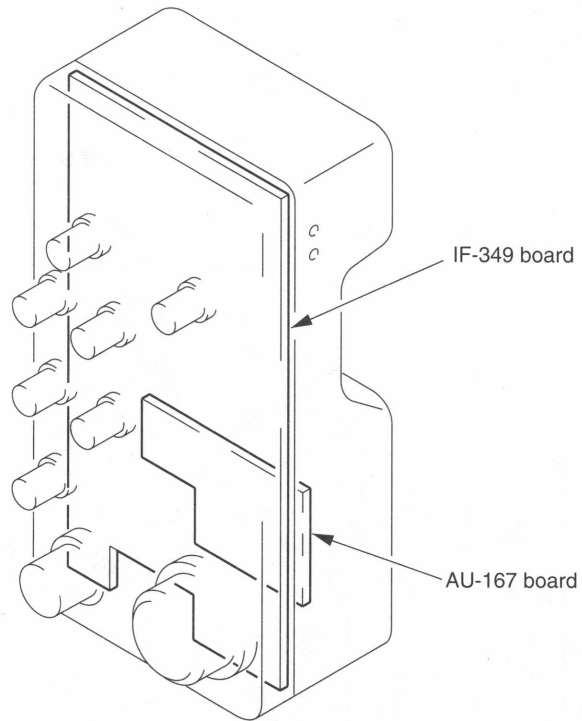
# 1-5. SYSTEM CONFIGURATION



1. INSTALLATION

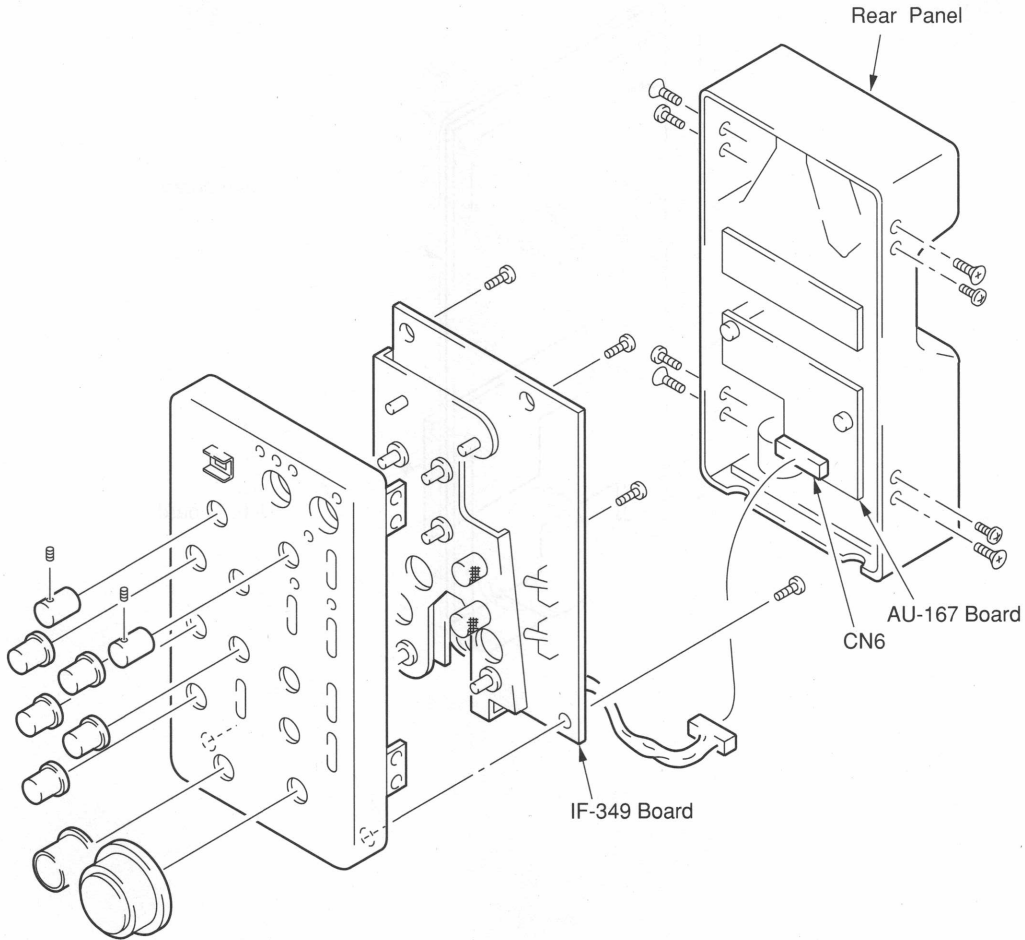
# SECTION 2 SERVICE INFORMATION

## 2-1. BOARD LAYOUT



## 2-2. REMOVAL OF CABINET

1. Remove the two setscrews and remove the nine knobs from the front Panel.
2. Remove the eight screws fixing the rear panel and the rear panel. Disconnect the connector CN6 on the AU-167 board.
3. Remove the five screws fixing the IF-349 board and remove the IF-349 board.



## 2-3. NOTE ON MAINTENANCE SERVICES

### 2-3-1. PROM IC

Each PROM IC on the PC board has a suffix to its original designation, which is shown in bold-face type in the following table. This suffix may change according to improvement of IC. Never use an IC having no suffix to its original designation, because its memory has not been programmed. Each PROM IC is mounted to the PC board via socket.

BOARD	Ref. No	PROM IC
IF-349	IC 117	9800-IF349-V1.0
	IC 118	27C512-RMC-V1.0

### 2-3-2. Note On Replacement Parts

#### 1. Safety Related on Components Warning

Components identified by shading marked with  $\triangle$  on the schematic diagrams, exploded views and electrical spare parts list are critical to safe operation. Replace these components with Sony Parts whose parts numbers appear as shown in this manual or in service manual supplements published by Sony.

#### 2. Standardization of Parts

Replace Parts that are supplied from Sony Parts Center can sometimes have different shape and external appearance than what are actually used in equipment. This is due to "accommodating the improved parts and/or engineering changes" or "standardization of genuine parts."

- This manual's exploded view and electrical spare parts lists are indicating the parts numbers of "the standardized genuine parts at present."
- Regarding engineering parts and diagrams changes in our engineering department, refer Sony service bulletins and service manual supplements.

#### 3. Stocked of Parts

The parts marked with "S" in the SP column of the exploded views and electrical spare parts list are normally required for routine service work. Order for parts marked with "O" will be proceed, but allow for additional delivery time.

#### 4. Units of Capacitors, Inductors, and Resistors

The following units are omitted in the schematic diagrams, exploded views, and electrical parts lists unless otherwise specified;

Capacitor :  $\mu\text{F}$   
Inductor :  $\mu\text{H}$   
Resistor :  $\Omega$

State of Tennessee  
County of \_\_\_\_\_  
I, \_\_\_\_\_, Clerk of the Court,  
do hereby certify that \_\_\_\_\_  
is the true and correct copy of the  
original filed in my office on \_\_\_\_\_  
at \_\_\_\_\_, Tennessee.

State of Tennessee  
County of \_\_\_\_\_  
I, \_\_\_\_\_, Clerk of the Court,  
do hereby certify that \_\_\_\_\_  
is the true and correct copy of the  
original filed in my office on \_\_\_\_\_  
at \_\_\_\_\_, Tennessee.

Witness my hand and the seal of the  
Court at \_\_\_\_\_, Tennessee,  
this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

Witness my hand and the seal of the  
Court at \_\_\_\_\_, Tennessee,  
this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

\_\_\_\_\_  
Clerk of the Court

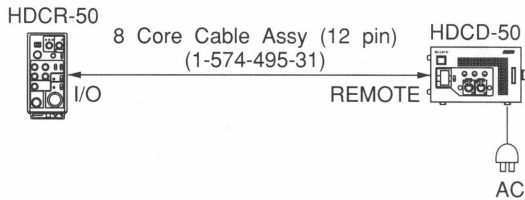
\_\_\_\_\_  
Clerk of the Court

# SECTION 3 ALIGNMENT

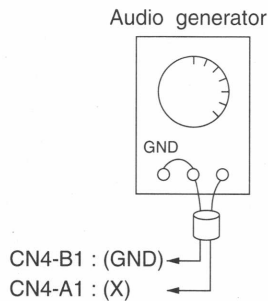
## 3-1. MEASURING EQUIPMENT

- Audio generator
  - Audio Level meter
  - Oscilloscope
  - HD Camera Signal Distributor (HDCD-50), or, DC power supply (12 V dc)
- ※ When using the DC power supply, supply between the CN2-A1 (+12 V) and E1 (GND) on the AU-167 board with the DC voltage.

## 3-2. CONNECTION



## 3-3. AUDIO CONNECTION



## 3-4. RMT-TALK ADJUSTMENT

### NOTE:

- RV2/AU-167 board → mechanical center (at the factory)
- Connect TP2 and E1 on the AU-167 board with a 200-ohm (1/4W) resistor when performing the following adjustment.
- Connect CN4-pin B1 and CN4-pin A2 on the AU-167 board with shorting clip.
- Perform the adjustment by choosing either (A) or (B) depend on a kind of microphone.

### (A) S1: C side

- (1) S1 → "C" side
- (2) Input point : CN4-pin A1 (GND: CN4-B1)/AU-167 board  
Input level : -20 dBu
- (3) Test point : TP2 (GND: E1)/AU-167 board  
Adj. point : RV3/AU-167 board  
Spec. : 0.5±0.01 V p-p (Terminated with 200 Ω)

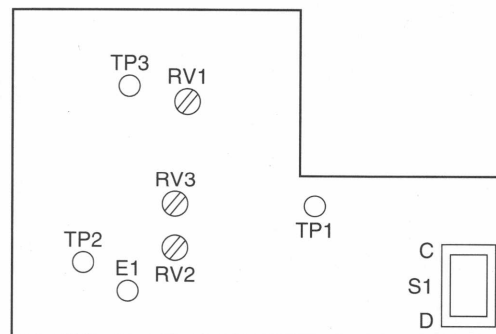
### (B) S1: D side

- (1) S1 → "D" side
- (2) Input point : CN4-pin A1 (GND: CN4-B1)/AU-167 board  
Input level : -60 dBu
- (3) Test point : TP2 (GND: E1)/AU-167 board  
Adj. point : RV3/AU-167 board  
Spec. : 0.5±0.01 V p-p (Terminated with 200 Ω)

## 3-5. BALANCE ADJUSTMENT

- (1) Choose one of above item (A) or (B), and, perform the procedures (1) and (2), then, perform the following procedure (2).
- (2) Test point : CN5-Pin B3 (GND: E1)/AU-167 board  
Adj. point : RV1/AU-167 board  
Spec. : Minimum level

**NOTE:** After the adjustment, remove a 200-ohm resistor and a shorting clip.



AU-167 Board (COMPONENT SIDE)



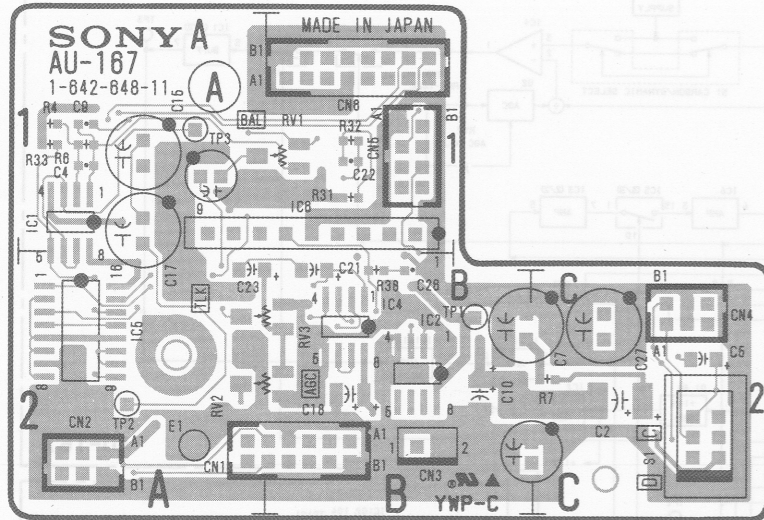


AU-167 BOARD

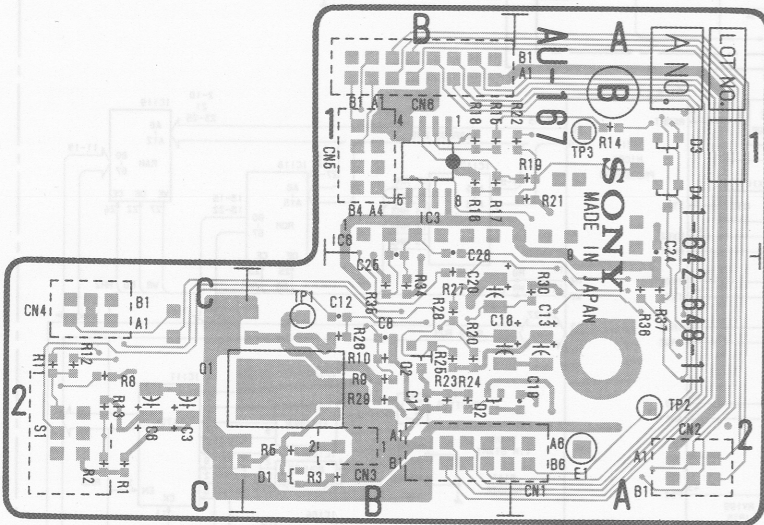
Ser No. 10001-10100

IF-349 BOARD

AU-167 IF-349 FRAME AU-167 IF-349



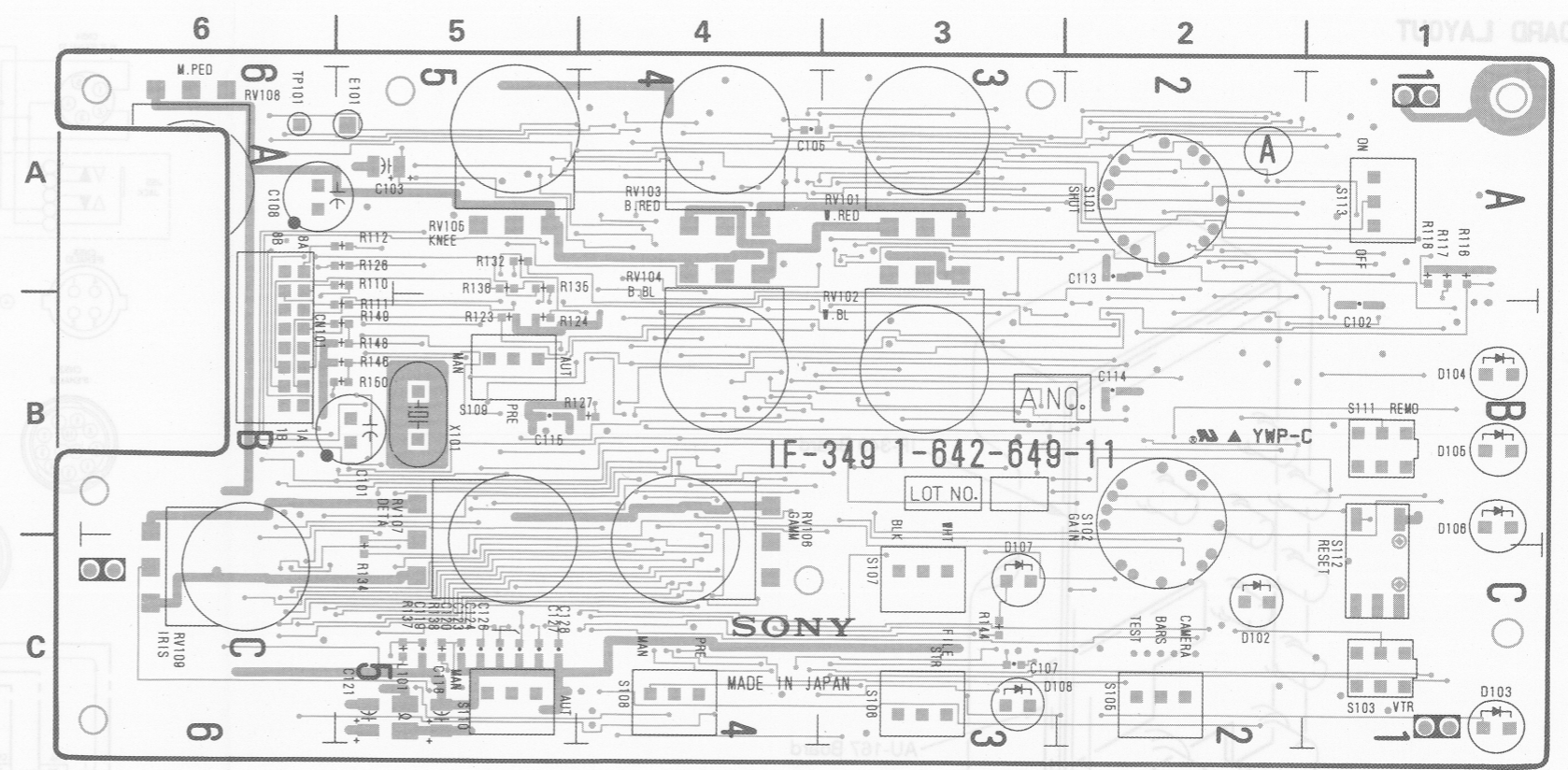
1-642-648-11 COMPONENT SIDE



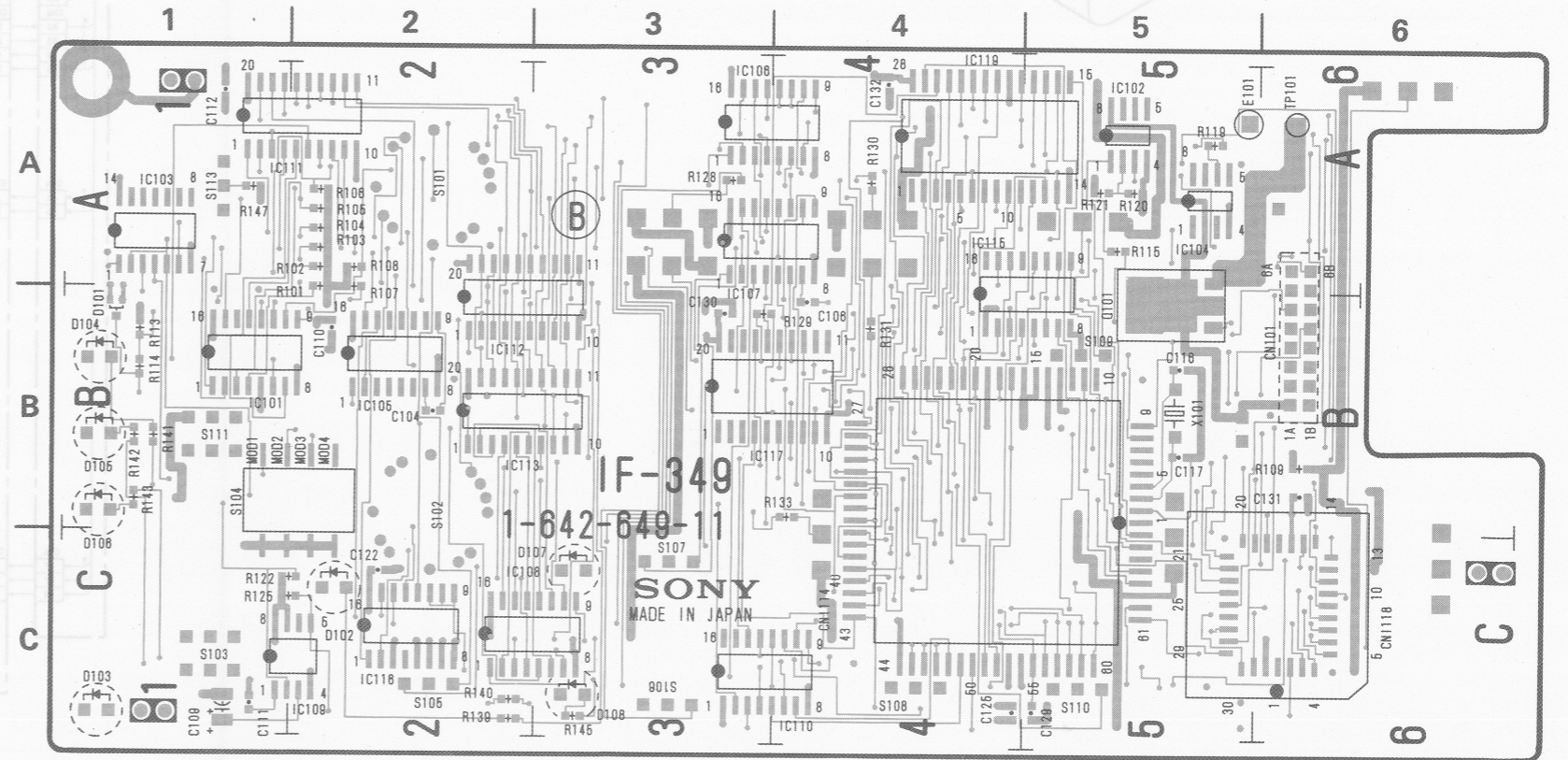
1-642-648-11 SOLDERING SIDE

IF-349 (1-642-649-11)

- CN101 B-6
- D101 B-1
- D102 C-2
- D103 C-1
- D104 B-1
- D105 B-1
- D106 B-1
- D107 C-3
- D108 C-3
- E101 A-5
- IC101 B-1
- IC102 A-5
- IC103 A-1
- IC104 A-5
- IC105 B-2
- IC106 A-3
- IC107 B-3
- IC108 C-2
- IC109 C-2
- IC110 C-4
- IC111 A-1
- IC112 B-2
- IC113 B-2
- IC115 A-4
- IC116 C-2
- IC117 B-3
- IC119 A-4
- Q101 B-5
- RV101 A-3
- RV102 B-3
- RV103 A-4
- RV104 A-4
- RV105 A-5
- RV106 B-4
- RV107 B-5
- RV108 A-6
- RV109 C-6
- S101 A-2
- S102 B-2
- S103 C-1
- S104 A-1
- S105 C-2
- S106 C-3
- S107 C-3
- S108 C-4
- S109 B-5
- S110 C-5
- S111 B-1
- S112 C-1
- S113 A-1
- TP101 A-6
- X101 B-5



1-642-649-11 COMPONENT SIDE



1-642-649-11 SOLDERING SIDE

A-2 (a)

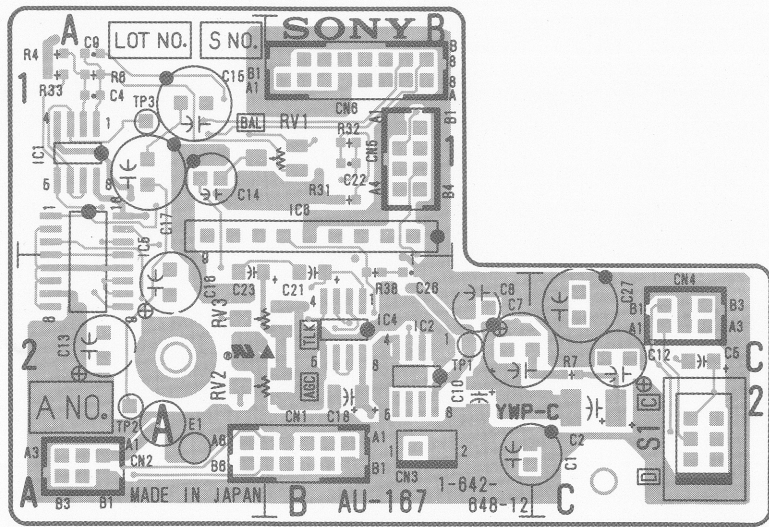
A-2 (a)

HDCR-50

Ser No. 10101-

AU-167 BOARD

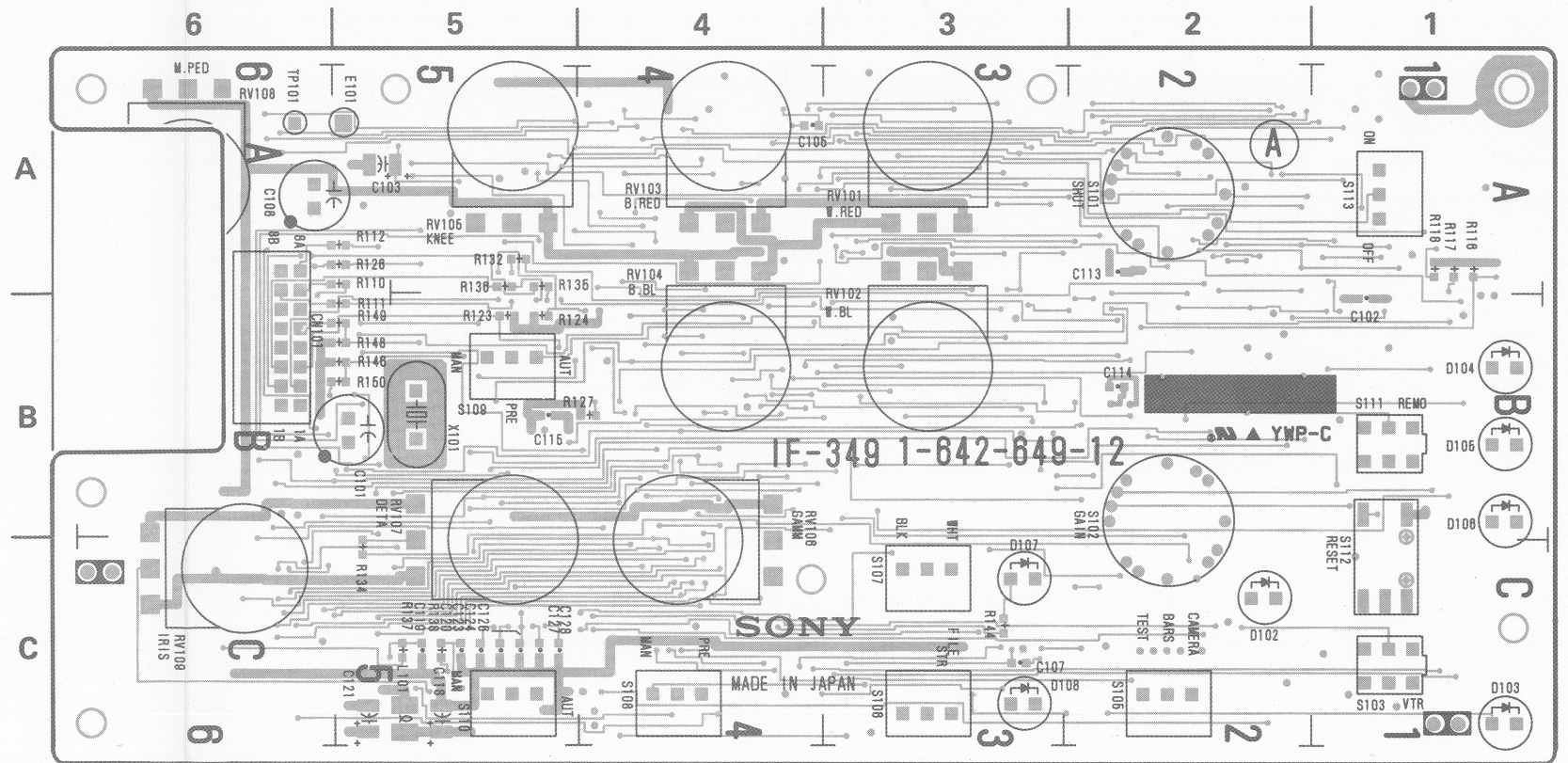
IF-349 BOARD



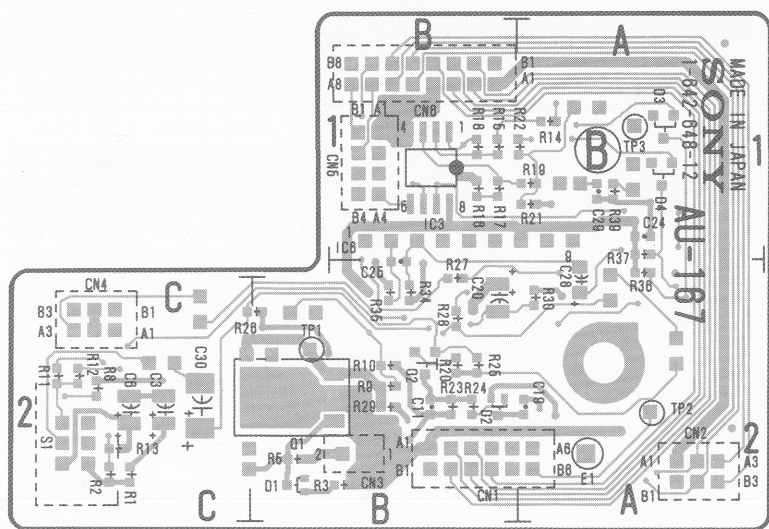
1-642-648-12 COMPONENT SIDE

IF-349 (1-642-649-12)

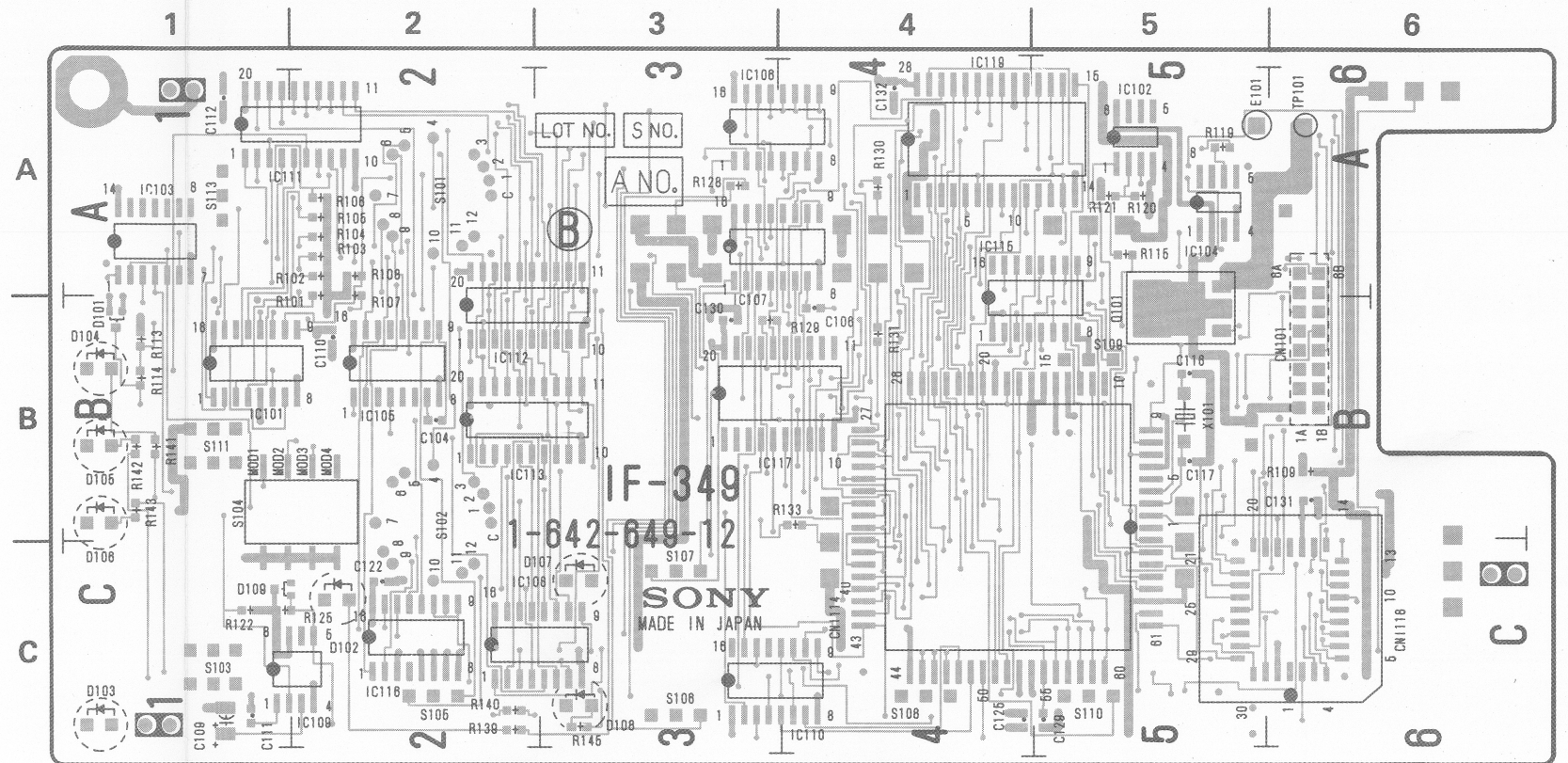
- KN101 B-6
- D101 B-1
- D102 C-2
- D103 C-1
- D104 B-1
- D105 B-1
- D106 B-1
- D107 C-3
- D108 C-3
- D109 C-1
- E101 A-5
- IC101 B-1
- IC102 A-5
- IC103 A-1
- IC104 A-5
- IC105 B-2
- IC106 A-3
- IC107 A-3
- IC108 C-2
- IC109 C-2
- IC110 C-4
- IC111 A-1
- IC112 B-2
- IC113 B-2
- IC114 C-4
- IC115 A-4
- IC116 C-2
- IC117 B-3
- IC118 C-6
- IC119 A-4
- Q101 B-5
- RV101 A-3
- RV102 B-3
- RV103 A-4
- RV104 A-4
- RV105 A-5
- RV106 B-4
- RV107 B-5
- RV108 A-6
- RV109 C-6
- S101 A-2
- S102 B-2
- S103 C-1
- S104 B-1
- S105 C-2
- S106 C-3
- S107 C-3
- S108 C-4
- S109 B-5
- S110 C-5
- S111 B-1
- S112 C-1
- S113 A-1
- TP101 A-6
- X101 B-5



1-642-649-12 COMPONENT SIDE



1-642-648-12 SOLDERING SIDE



1-642-649-12 SOLDERING SIDE







## SECTION B SEMICONDUCTOR

The circuit diagram of IC is obtained from the IC data book published by the manufacturer.

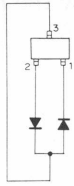
TYPE	PAGE
02CZ?? .....	B-2
1SS226 .....	B-2
2SC3074LB .....	B-2
2SK425 .....	B-2
AM27C512-150LI ....	B-3
CXA1297M .....	B-3
HD14053BFP .....	B-3
HD6475208CP .....	B-4
HM6264ALFP-10.....	B-5
MA143 .....	B-2
MC14053BF .....	B-3
MC14490F .....	B-6
MC74HC4050F .....	B-6
NJM386BS .....	B-6
NJM4556M-A.....	B-6
RC4556MA .....	B-6
RD??M .....	B-2
REF-03GS .....	B-6
SLP144B .....	B-2
SN74HC148NS .....	B-6
SN74HC574ANS .....	B-7
TC40H008F .....	B-7
TC74HC4050AF .....	B-6
TC9800FW .....	B-7
TL7705CPS-B .....	B-7
TLG206.....	B-2
TLR206.....	B-2
UPC4062G2 .....	B-7

# DIODE, TRANSISTOR

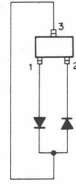
(SCALE 4/1)  
TOP VIEW  
02CZ ? ?  
RD ? ?M



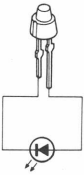
(SCALE 4/1)  
TOP VIEW  
1SS226



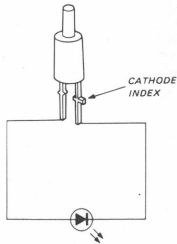
(SCALE 4/1)  
TOP VIEW  
MA143



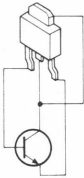
SLP144B ; RED



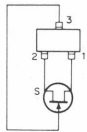
TLG206 ; GREEN  
TLR206 ; RED



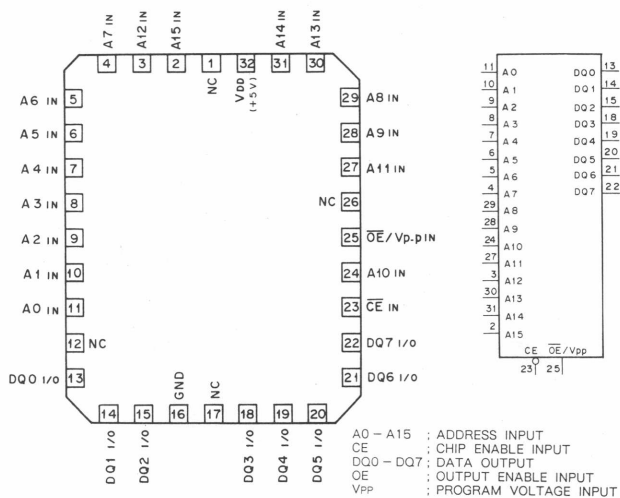
2SC3074LB



TOP VIEW (SCALE 4/1) 2SK425

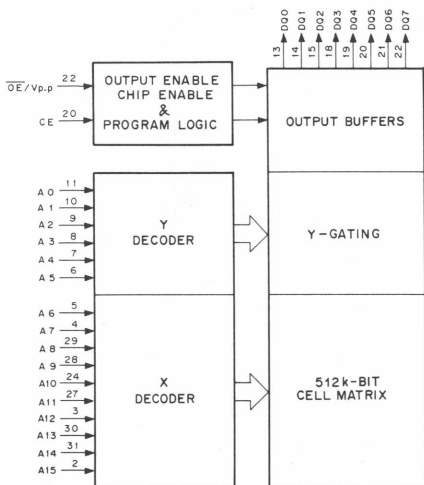


AM27C512-150LI (AMD)  
C-MOS 512K (65,536x8)-BIT UV EPROM  
- TOP VIEW -

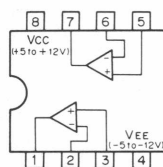


A <sub>n</sub>	CE	OE/V <sub>PP</sub>	V <sub>DD</sub>	D <sub>n</sub>	FUNCTION
A <sub>n</sub> IN	0	0	+5V	DOUT	READ
A <sub>n</sub> IN	0	1	+5V	HI-Z	OUTPUT DISABLE
X	1	X	+5V	HI-Z	STANDBY
A <sub>n</sub> IN	0	+12.5V	+6V	DIN	PGM
A <sub>n</sub> IN	0	0	+6V	DOUT	PGM VERIFY
X	1	+12.5V	+6V	HI-Z	PGM INH

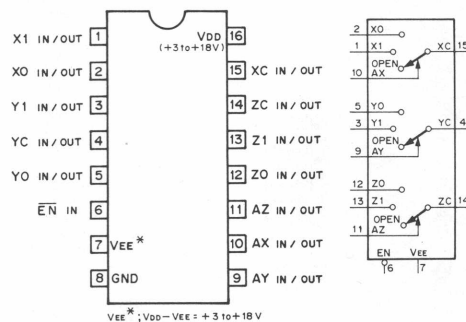
0: LOW LEVEL  
1: HIGH LEVEL  
X: DON'T CARE  
HI-Z: HIGH IMPEDANCE



CXA1297M (SONY) FLAT PACKAGE  
OPERATIONAL AMPLIFIER  
- TOP VIEW -



HD14053BFP (HITACHI) FLAT PACKAGE  
MC14053BF (MOTOROLA) FLAT PACKAGE  
C-MOS TRIPLE 2-CHANNEL ANALOG MULTIPLEXERS/DEMULTEPLEXERS  
- TOP VIEW -

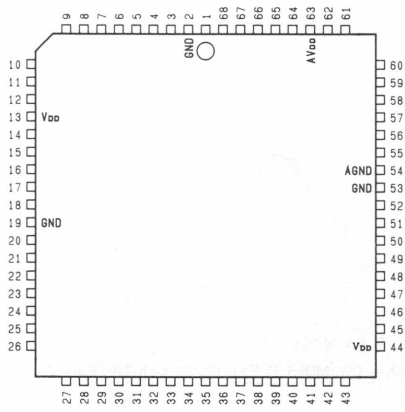


VEE\*: V<sub>DD</sub>-VEE = +3 to +18 V

0: LOW LEVEL  
1: HIGH LEVEL  
X: DON'T CARE.

CONT. INPUTS	ON CHANNEL	
EN	A (X,Y,Z)	CHANNEL
0	0	0
0	1	1
1	X	OPEN

HD6475208CP (HITACHI)  
 C-MOS MICRO COMPUTER UNIT  
 - TOP VIEW -



MODE 1

45	P5 <sub>1</sub> /TMC1	D <sub>1</sub>	20
46	P5 <sub>1</sub> /FTI1	D <sub>1</sub>	21
47	P5 <sub>1</sub> /FTI2/TMRI	D <sub>2</sub>	22
48	P5 <sub>1</sub> /TMO	D <sub>3</sub>	23
49	P5 <sub>1</sub> /FTOB1/FTCI <sub>1</sub>	D <sub>4</sub>	24
50	P5 <sub>1</sub> /FTOB2/FTCI <sub>2</sub>	D <sub>5</sub>	25
51	P5 <sub>1</sub> /FTOA1	D <sub>6</sub>	26
52	P5 <sub>1</sub> /FIOA2/φ	D <sub>7</sub>	27
28	P6 <sub>1</sub> /AN0	A <sub>8</sub>	28
29	P6 <sub>1</sub> /AN1	A <sub>9</sub>	29
30	P6 <sub>1</sub> /AN2	A <sub>3</sub>	30
31	P6 <sub>1</sub> /AN3	A <sub>4</sub>	31
32	P6 <sub>1</sub> /AN4	A <sub>5</sub>	32
33	P6 <sub>1</sub> /AN5	A <sub>6</sub>	33
34	P6 <sub>1</sub> /AN6	A <sub>7</sub>	34
35	P6 <sub>1</sub> /AN7	A <sub>8</sub>	35
36	P7 <sub>1</sub> /TXD2	P3 <sub>1</sub> /A <sub>1</sub>	36
37	P7 <sub>1</sub> /RXD2	P3 <sub>1</sub> /A <sub>2</sub>	37
38	P7 <sub>1</sub> /SCK2	P3 <sub>1</sub> /A <sub>3</sub>	38
39	P7 <sub>1</sub> /TXD1	P3 <sub>1</sub> /A <sub>4</sub>	39
40	P7 <sub>1</sub> /RXD1	P3 <sub>1</sub> /A <sub>5</sub>	40
41	P7 <sub>1</sub> /SCK1	P3 <sub>1</sub> /A <sub>6</sub>	41
42	P7 <sub>1</sub> /TXD1	P3 <sub>1</sub> /A <sub>7</sub>	42
43	P7 <sub>1</sub> /RXD1	P3 <sub>1</sub> /A <sub>8</sub>	43
11	RD		11
12	WR		12
5	P1 <sub>1</sub> /WAIT		5
6	P1 <sub>1</sub> /IRQ <sub>0</sub>		6
7	P1 <sub>1</sub> /ADTRG/IRQ <sub>1</sub>		7
8	P1 <sub>1</sub> /IRQ <sub>2</sub>		8
9	P1 <sub>1</sub> /IRQ <sub>3</sub>		9
14	MD <sub>0</sub>		14
15	MD <sub>1</sub>		15
16	MD <sub>2</sub>		16
17	RES		17
18	NMI		18
3	EXTAL		3
4	XTAL		4

MODE 2

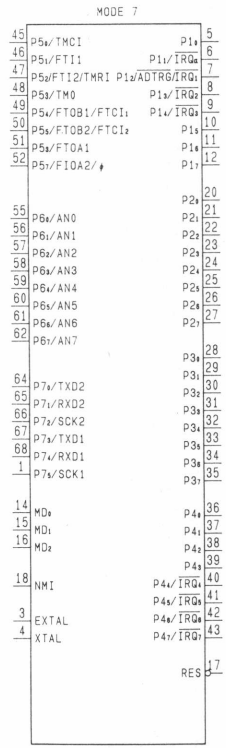
55	P6 <sub>1</sub> /AN0	D <sub>1</sub>	20
56	P6 <sub>1</sub> /AN1	D <sub>1</sub>	21
57	P6 <sub>1</sub> /AN2	D <sub>2</sub>	22
58	P6 <sub>1</sub> /AN3	D <sub>3</sub>	23
59	P6 <sub>1</sub> /AN4	D <sub>4</sub>	24
60	P6 <sub>1</sub> /AN4	D <sub>5</sub>	25
61	P6 <sub>1</sub> /AN6	D <sub>6</sub>	26
62	P6 <sub>1</sub> /AN7	D <sub>7</sub>	27
64	P7 <sub>1</sub> /TXD2	P3 <sub>1</sub> /A <sub>1</sub>	28
65	P7 <sub>1</sub> /RXD2	P3 <sub>1</sub> /A <sub>2</sub>	29
66	P7 <sub>1</sub> /SCK2	P3 <sub>1</sub> /A <sub>3</sub>	30
67	P7 <sub>1</sub> /TXD1	P3 <sub>1</sub> /A <sub>4</sub>	31
68	P7 <sub>1</sub> /RXD1	P3 <sub>1</sub> /A <sub>5</sub>	32
1	P7 <sub>1</sub> /SCK1	P3 <sub>1</sub> /A <sub>6</sub>	33
5	P1 <sub>1</sub> /WAIT		36
6	P1 <sub>1</sub> /IRQ <sub>0</sub>		37
7	P1 <sub>1</sub> /ADTRG/IRQ <sub>1</sub>		38
8	P1 <sub>1</sub> /IRQ <sub>2</sub>		39
9	P1 <sub>1</sub> /IRQ <sub>3</sub>		40
14	MD <sub>0</sub>		41
15	MD <sub>1</sub>		42
16	MD <sub>2</sub>		43
17	RES		45
18	NMI		46
3	EXTAL		47
4	XTAL		48
14	MD <sub>0</sub>		49
15	MD <sub>1</sub>		50
16	MD <sub>2</sub>		51
17	RES		52
18	NMI		53
3	EXTAL		54
4	XTAL		55

MODE 3

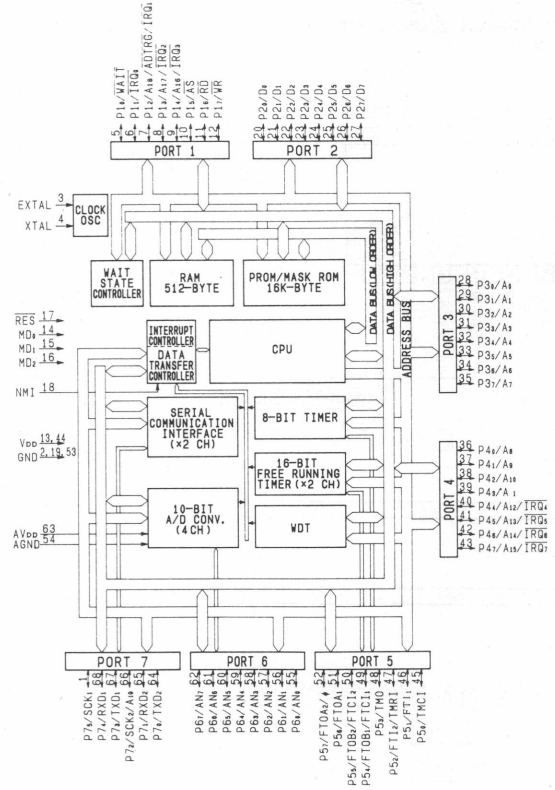
45	P5 <sub>1</sub> /TMC1	D <sub>1</sub>	20
46	P5 <sub>1</sub> /FTI1	D <sub>1</sub>	21
47	P5 <sub>1</sub> /FTI2/TMRI	D <sub>2</sub>	22
48	P5 <sub>1</sub> /TMO	D <sub>3</sub>	23
49	P5 <sub>1</sub> /FTOB1/FTCI <sub>1</sub>	D <sub>4</sub>	24
50	P5 <sub>1</sub> /FTOB2/FTCI <sub>2</sub>	D <sub>5</sub>	25
51	P5 <sub>1</sub> /FTOA1	D <sub>6</sub>	26
52	P5 <sub>1</sub> /FIOA2/φ	D <sub>7</sub>	27
28	P6 <sub>1</sub> /AN0	A <sub>8</sub>	28
29	P6 <sub>1</sub> /AN1	A <sub>9</sub>	29
30	P6 <sub>1</sub> /AN2	A <sub>3</sub>	30
31	P6 <sub>1</sub> /AN3	A <sub>4</sub>	31
32	P6 <sub>1</sub> /AN4	A <sub>5</sub>	32
33	P6 <sub>1</sub> /AN5	A <sub>6</sub>	33
34	P6 <sub>1</sub> /AN6	A <sub>7</sub>	34
35	P6 <sub>1</sub> /AN7	A <sub>8</sub>	35
64	P7 <sub>1</sub> /TXD2	P4 <sub>1</sub> /A <sub>1</sub>	36
65	P7 <sub>1</sub> /RXD2	P4 <sub>1</sub> /A <sub>2</sub>	37
66	P7 <sub>1</sub> /SCK2	P4 <sub>1</sub> /A <sub>3</sub>	38
67	P7 <sub>1</sub> /TXD1	P4 <sub>1</sub> /A <sub>4</sub>	39
68	P7 <sub>1</sub> /RXD1	P4 <sub>1</sub> /A <sub>5</sub>	40
1	P7 <sub>1</sub> /SCK1	P4 <sub>1</sub> /A <sub>6</sub>	41
5	P1 <sub>1</sub> /WAIT		45
6	P1 <sub>1</sub> /IRQ <sub>0</sub>		46
7	P1 <sub>1</sub> /ADTRG/IRQ <sub>1</sub>		47
8	P1 <sub>1</sub> /IRQ <sub>2</sub>		48
9	P1 <sub>1</sub> /IRQ <sub>3</sub>		49
14	MD <sub>0</sub>		50
15	MD <sub>1</sub>		51
16	MD <sub>2</sub>		52
17	RES		53
18	NMI		54
3	EXTAL		55
4	XTAL		56

MODE 4

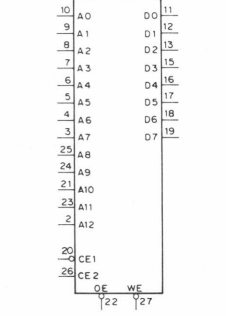
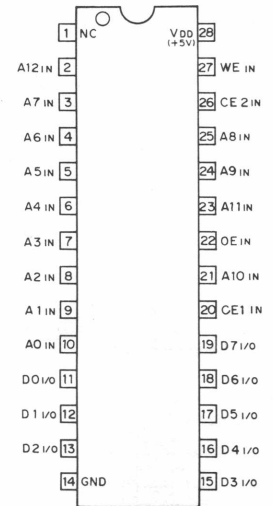
45	P5 <sub>1</sub> /TMC1	D <sub>1</sub>	20
46	P5 <sub>1</sub> /FTI1	D <sub>1</sub>	21
47	P5 <sub>1</sub> /FTI2/TMRI	D <sub>2</sub>	22
48	P5 <sub>1</sub> /TMO	D <sub>3</sub>	23
49	P5 <sub>1</sub> /FTOB1/FTCI <sub>1</sub>	D <sub>4</sub>	24
50	P5 <sub>1</sub> /FTOB2/FTCI <sub>2</sub>	D <sub>5</sub>	25
51	P5 <sub>1</sub> /FTOA1	D <sub>6</sub>	26
52	P5 <sub>1</sub> /FIOA2/φ	D <sub>7</sub>	27
28	P6 <sub>1</sub> /AN0	P3 <sub>1</sub> /A <sub>1</sub>	28
29	P6 <sub>1</sub> /AN1	P3 <sub>1</sub> /A <sub>2</sub>	29
30	P6 <sub>1</sub> /AN2	P3 <sub>1</sub> /A <sub>3</sub>	30
31	P6 <sub>1</sub> /AN3	P3 <sub>1</sub> /A <sub>4</sub>	31
32	P6 <sub>1</sub> /AN4	P3 <sub>1</sub> /A <sub>5</sub>	32
33	P6 <sub>1</sub> /AN5	P3 <sub>1</sub> /A <sub>6</sub>	33
34	P6 <sub>1</sub> /AN6	P3 <sub>1</sub> /A <sub>7</sub>	34
35	P6 <sub>1</sub> /AN7	P3 <sub>1</sub> /A <sub>8</sub>	35
36	P7 <sub>1</sub> /TXD2	P4 <sub>1</sub> /A <sub>1</sub>	36
37	P7 <sub>1</sub> /RXD2	P4 <sub>1</sub> /A <sub>2</sub>	37
38	P7 <sub>1</sub> /SCK2	P4 <sub>1</sub> /A <sub>3</sub>	38
39	P7 <sub>1</sub> /TXD1	P4 <sub>1</sub> /A <sub>4</sub>	39
40	P7 <sub>1</sub> /RXD1	P4 <sub>1</sub> /A <sub>5</sub>	40
41	P7 <sub>1</sub> /SCK1	P4 <sub>1</sub> /A <sub>6</sub>	41
14	MD <sub>0</sub>		42
15	MD <sub>1</sub>		43
16	MD <sub>2</sub>		44
17	RES		45
18	NMI		46
3	EXTAL		47
4	XTAL		48
14	MD <sub>0</sub>		49
15	MD <sub>1</sub>		50
16	MD <sub>2</sub>		51
17	RES		52
18	NMI		53
3	EXTAL		54
4	XTAL		55



INPUTS			OPERATION	CONTENTS
MD2	MD1	MD0	MODE	
0	0	1	MODE 1	EXTENSION MINIMUM MODE (ROM INVALID)
0	1	0	MODE 2	EXTENSION MINIMUM MODE (ROM VALID)
0	1	1	MODE 3	EXTENSION MAXIMUM MODE (ROM INVALID)
1	0	0	MODE 4	EXTENSION MAXIMUM MODE (ROM VALID)
1	1	1	MODE 7	SINGLE CHIP MODE

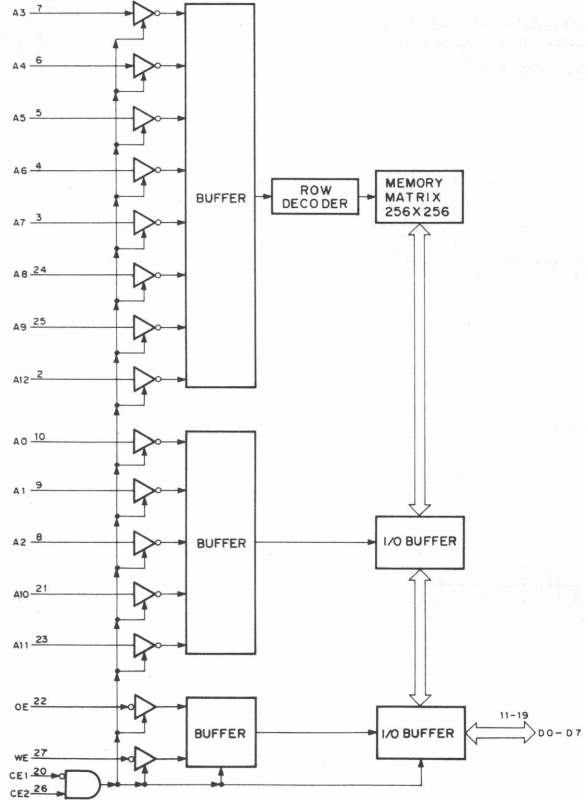


HM6264ALFP-10 (HITACHI) (ACCESS TIME = 100ns)  
 CMOS 64K (8192x8)-BIT STATIC RAM  
 - TOP VIEW -

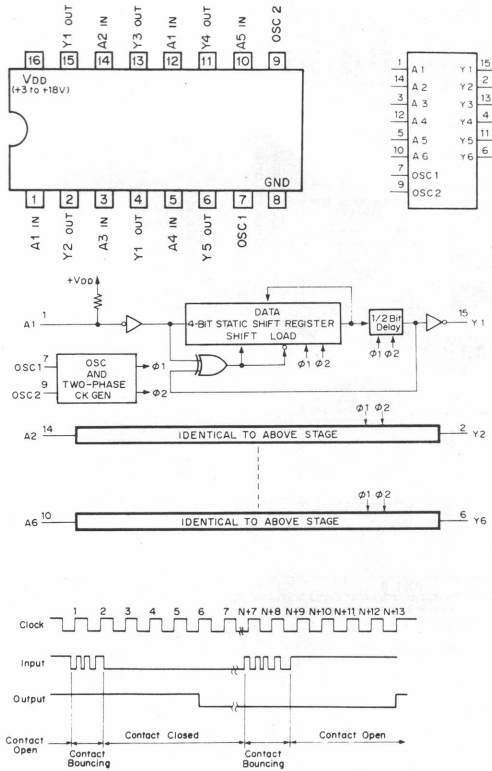


MODE SELECTION				
CONTROL INPUTS				MODE
CE1	CE2	OE	WE	
1	X	X	X	NO CHANGE
X	0	X	X	NO CHANGE
0	1	1	1	DISABLE OUTPUT
0	1	0	1	READ
0	1	X	0	WRITE

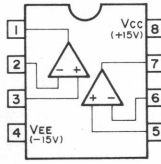
0 ; LOW LEVEL  
 1 ; HIGH LEVEL  
 X ; DON'T CARE



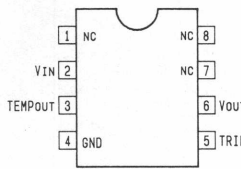
MC14490F (MOTOROLA) FLAT PACKAGE  
 CMOS HEX CONTACT BOUNCE ELIMINATOR  
 - TOP VIEW -



NJM4556M-A (JRC) FLAT PACKAGE  
 RC4556MA (RAYTHEON) FLAT PACKAGE  
 OPERATIONAL AMPLIFIER  
 (WIDE BAND, DECOMPENSATED)  
 - TOP VIEW -

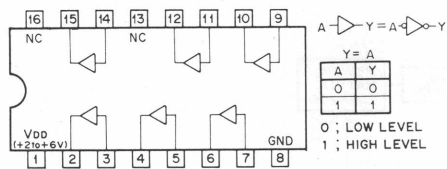


REF-03GS (PMI)  
 REFERENCE/TEMPERATURE TRANSDUCER  
 - TOP VIEW -

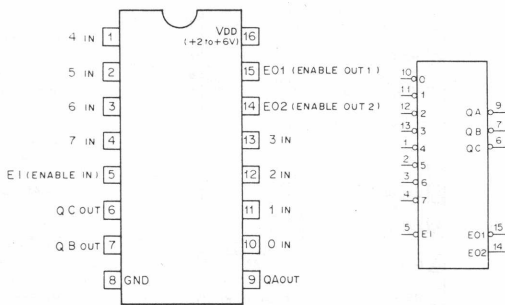


VIN : INPUT VOLTAGE (+4.5V to +33V)  
 TEMP : TEMPERATURE TRANSDUCER  
 VOLTAGE OUTPUT  
 TRIM : OUTPUT SIGNAL TRIMMING  
 VOUT : OUTPUT VOLTAGE (+2.5V)

MC74HC4050F (MOTOROLA) FLAT PACKAGE  
 TC74HC4050AF (TOSHIBA) FLAT PACKAGE  
 CMOS NON-INVERTING TYPE BUFFER/CONVERTER  
 - TOP VIEW -



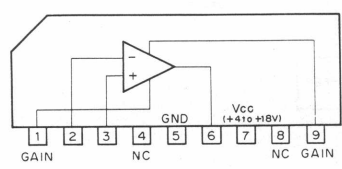
SN74HC148NS (TI) FLAT PACKAGE  
 CMOS 8-TO-3-LINE PRIORITY ENCODER  
 - TOP VIEW -



INPUTS								OUTPUTS					
E1	7	6	5	4	3	2	1	0	QC	QB	QA	E01	E02
1	X	X	X	X	X	X	X	X	1	1	1	1	1
0	1	1	1	1	1	1	1	1	1	1	1	0	1
0	1	1	1	1	1	1	1	0	1	1	1	1	0
0	1	1	1	1	1	1	0	X	1	1	0	1	0
0	1	1	1	1	1	0	X	X	1	0	1	1	0
0	1	1	1	1	0	X	X	X	0	1	1	1	0
0	1	1	0	X	X	X	X	X	0	1	0	1	0
0	1	0	X	X	X	X	X	X	0	0	1	1	0
0	0	X	X	X	X	X	X	X	0	0	0	1	0

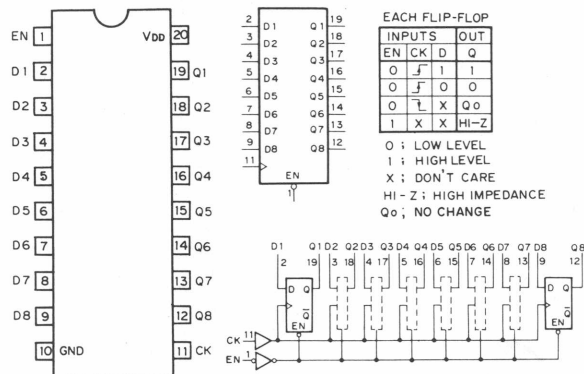
0 ; LOW LEVEL    1 ; HIGH LEVEL    X ; DON'T CARE

NJM386BS (JRC)  
 AUDIO POWER AMPLIFIER  
 - SIDE VIEW -



SN74HC574ANS (TI) FLAT PACKAGE

C-MOS 3-STATE D-TYPE EDGE-TRIGGERED FLIP-FLOP  
- TOP VIEW -

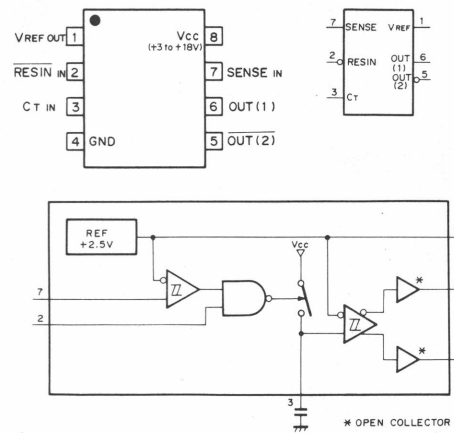


NOTE:

TYPE	V <sub>DD</sub>
74AC/74HC	+2 to +6V
74ACT/74HCT	+5V
TC74AC574F	+2 to +5.5V

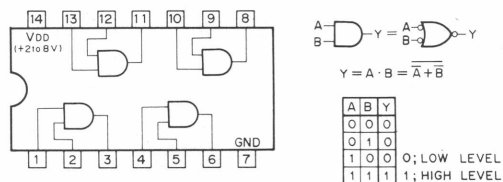
TL7705CPS-B (TI) FLAT PACKAGE

POWER VOLTAGE SUPERVISOR  
- TOP VIEW -



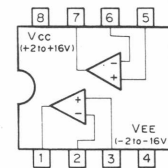
TC40H008F (TOSHIBA) FLAT PACKAGE

C-MOS 2-INPUT POSITIVE-AND GATE  
- TOP VIEW -



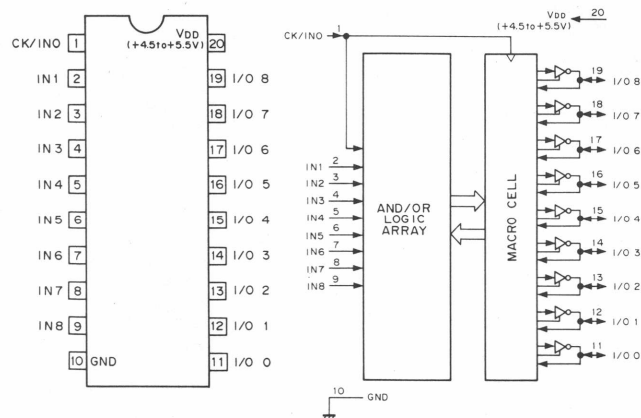
UPC4062G2 (NEC) FLAT PACKAGE

TTL-DUAL OPERATIONAL AMPLIFIER WITH LOW POWER CONSUMPTION  
- TOP VIEW -



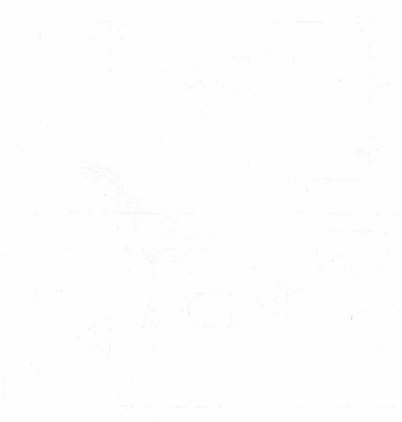
TC9800FW (TOSHIBA)

C-MOS ELECTRICALLY ERASABLE PROGRAMMABLE LOGIC DEVICE  
- TOP VIEW -



\* ABOVE DIAGRAM SHOWS CONDITIONS BEFORE PROGRAMMING.

Page 1 of 1



Page 2 of 2



# SECTION C

## SPARE PARTS

### PARTS INFORMATION

#### 1. Safety Related Component Warning

Components identified by shading marked with  $\triangle$  on the schematic diagrams, exploded views and electrical spare parts list are critical to safe operation. Replace these components with Sony parts whose parts numbers appear as shown in this manual or in service manual supplements published by Sony.

#### 2. Replace Parts that are supplied from Sony Parts Center can sometimes have different shape and external appearance than what are actually used in equipment. This is due to "accommodating the improved parts and/or engineering changes" or "standardization of genuine parts."

- This manual's exploded view and electrical spare parts lists are indicating the parts numbers of "the standardized genuine parts at present."
- Regarding engineering parts and diagrams changes in our engineering department, refer to Sony service bulletins and service manual supplements.

#### 3. The parts marked with "S" in the SP column of the exploded views and electrical spare parts list are normally required for routine service work. Orders for parts marked with "O" will be processed, but allow for additional delivery time.

#### 4. Item with no parts number and/or no description are not stocked because they are seldom required for routine service.

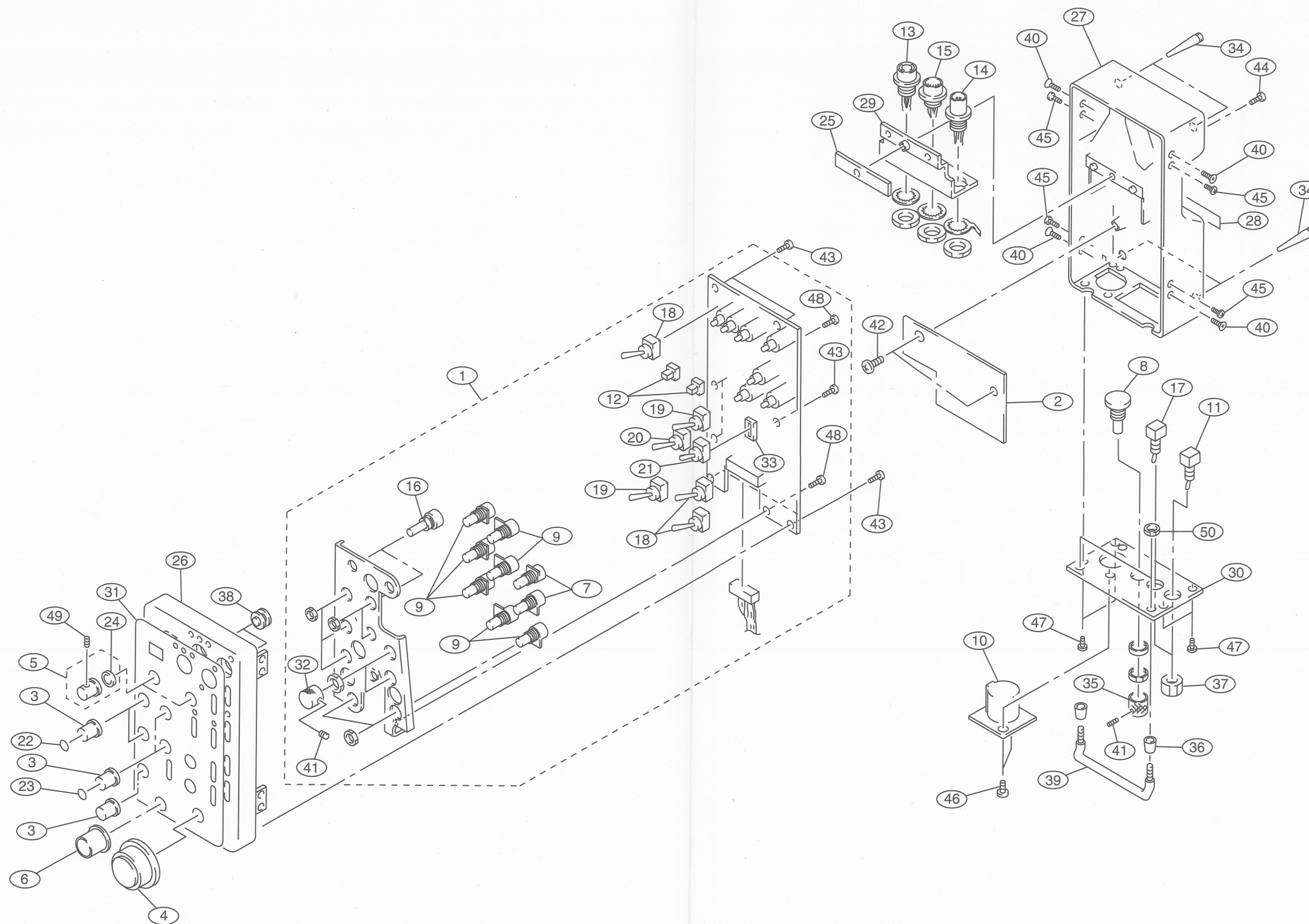
#### 5. All capacitors are in micro farads unless otherwise specified. All inductors are in micro henries unless otherwise specified. All resistors are in ohms.

# HD CAMERA CONTROL UNIT

## EXPLODED VIEW

No.	Part No.	SP Description
1	A-8271-401-A	o MOUNTED CIRCUIT BOARD, IF-349
2	A-8271-402-A	o MOUNTED CIRCUIT BOARD, AU-167
3	X-2355-502-1	s KNOB ASSY, CONTROL
4	X-2387-004-1	s KNOB ASSY
5	X-3166-783-1	s KNOB ASSY (BL), VOLUME
6	X-3651-342-0	s KNOB ASSY, CONTROL
7	1-230-139-00	s RES, VAR CARBON 10K "GAMMA" "DETAIL"
8	1-237-981-11	s RES, VAR CARBON 20K "LEVEL"
9	1-238-289-11	s RES, VAR CARBON 10K "W/B BARANCE" "KNEE" "MASTER BLACK" "IRIS"
10	1-509-186-31	s CONNECTOR, XLR 5P "INCOM"
11	1-554-396-00	s SWITCH, TOGGLE "CALL/MIC"
12	1-554-909-11	s SWITCH, PUSH "REMOTE" "VTR START"
13	1-561-376-00	s CONNECTOR, 4P FEMALE "DC 12V OUT"
14	1-562-221-21	s CONNECTOR, 12P FEMALE "AUX"
15	1-562-335-00	s CONNECTOR, 12P MALE "I/O"
16	1-570-185-11	s SWICH, ROTARY "SHUTTER" "GAIN"
17	1-571-070-11	s SWITCH, TOGGLE "COMMON/PRIVATE"
18	1-571-414-11	s SWITCH, TOGGLE "CHU POWER" "GAMMA" "DETAIL"
19	1-571-415-11	s SWITCH TOGGLE "MODE" "KNEE"
20	1-571-679-11	s SWITCH, TOGGLE "WHITE/BLACK"
21	1-572-660-11	s SWITCH, TOGGLE "FILE"
22	2-141-015-01	o PLATE, COLOR (R)
23	2-141-015-21	o PLATE, COLOR (B)
24	2-356-506-01	o FELT, KNOB
25	2-387-018-01	o SHEET, INSULATING
26	2-387-021-11	o CASE (UPPER), REMOTE CONTROL
27	2-387-022-13	o CASE (LOWER), REMOTE CONTROL
28	3-176-299-01	o SHEET, INDICATION, CONNECTOR
29	3-176-306-01	o BRACKET, CONNECTOR
30	3-176-311-02	o BRACKET, INCOME
31	3-176-313-03	o PANEL, CONTROL
32	3-177-241-01	s KNOB (S), VOLUME
33	3-177-595-01	o SPACER, SW
34	3-644-002-00	o CUSHION, HANDLE
35	3-657-627-11	s KNOB (2)
36	3-657-654-00	o RING, ORNAMENTAL
37	3-672-267-00	s NUT, CONTROL
38	3-676-244-00	s COVER, SWITCH
39	3-716-342-02	o GUARD, CONNECTOR
40	7-621-559-30	s SCREW +K 2.6X5
41	7-621-731-08	s SET-SCT, HEX. 2X2.5, FLAT POINT
42	7-621-770-87	s SCREW +B 2.6X5
43	7-621-773-86	s SCREW +B 2.6X4
44	7-621-775-10	s SCREW +B 2.6X4
45	7-621-775-20	s SCREW +B 2.6X5
46	7-627-556-37	s SCREW, PRECISION +P2.6X4 TYPE 1
47	7-627-556-38	s SCREW +P 2.6X4.0
48	7-682-546-04	s SCREW +B 3X5
49	7-683-237-01	s SET-SCT, HEX. 3X3 FLAT POINT
50	7-684-023-04	s N3 TYPE2

HD CAMERA REMOTE CONTROL UNIT





-----  
 AU-167 BOARD  
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Ref. No. or Q'ty	Part No.	SP	Description
Ipc	A-8271-402-A	o	MOUNTED CIRCUIT BOARD, AU-167
C1	1-126-947-11	s	ELECT 47uF 20% 35V
C2	1-135-164-21	s	TANTALUM, CHIP 22uF 20% 10V
C3	1-135-212-21	s	TANTAL 2.2uF 10% 35V
C4	1-164-392-11	s	CERAMIC 390PF 5% 50V
C5	1-135-071-21	s	TANTALUM, CHIP 0.15uF 10% 35V
C6	1-135-212-21	s	TANTAL 2.2uF 10% 35V
C7	1-126-948-11	s	ELECT 100uF 20% 35V
C8	1-131-370-00	s	TANTALUM 6.8uF 10% 16V
C9	1-164-156-11	s	CERAMIC 0.1uF 25V0%
C10	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C11	1-164-156-11	s	CERAMIC 0.1uF 25V0%
C12	1-131-350-00	s	TANTALUM 3.3uF 10% 35V
C13	1-131-367-00	s	TANTALUM 22uF 10% 20V
C14	1-126-160-11	s	ELECT 1uF 20% 50V
C15	1-124-589-11	s	ELECT 47uF 20% 16V
C16	1-131-367-00	s	TANTALUM 22uF 10% 20V
C17	1-124-589-11	s	ELECT 47uF 20% 16V
C18	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C19	1-164-156-11	s	CERAMIC 0.1uF 25V0%
C20	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C21	1-135-179-21	s	TANTALUM, CHIP 2.2uF 10% 16V
C22	1-162-922-11	s	CERAMIC, CHIP 39PF 5% 50V
C23	1-135-179-21	s	TANTALUM, CHIP 2.2uF 10% 16V
C24	1-164-156-11	s	CERAMIC 0.1uF 25V0%
C25	1-164-392-11	s	CERAMIC 390PF 5% 50V
C26	1-164-156-11	s	CERAMIC 0.1uF 25V0%
C27	1-126-948-11	s	ELECT 100uF 20% 35V
C28	1-135-073-00	s	TANTALUM, CHIP 0.33uF 10% 35V
C29	1-162-969-11	s	CERAMIC 0.0068uF 10% 25V
C30	1-135-079-21	s	TANTALUM, CHIP 3.3uF 20% 25V
CN1	1-580-535-11	o	CONNECTOR, 12P, MALE
CN2	1-580-532-11	o	CONNECTOR, 6P, MALE
CN3	1-506-467-11	o	CONNECTOR, 2P, MALE
CN4	1-580-532-11	o	CONNECTOR, 6P, MALE
CN5	1-580-533-11	s	CONNECTOR, 8P, MALE
CN6	1-580-537-11	o	CONNECTOR, 16P, MALE
D1	8-719-800-76	s	DIODE 1SS226
D2	8-719-800-76	s	DIODE 1SS226
D3	8-719-025-28	s	DIODE 02CZ4.7
D4	8-719-025-28	s	DIODE 02CZ4.7
IC1	8-759-142-20	s	IC UPC4062G2
IC2	8-759-142-20	s	IC UPC4062G2
IC3	8-759-700-45	s	IC NJM4556M-A
IC4	8-759-605-63	s	IC CXA1297M
IC5	8-759-300-71	s	IC MC14053BF
IC6	8-759-702-01	s	IC NJM386BS
Q1	8-729-230-31	s	TRANSISTOR 2SC3074LB
Q2	8-729-110-94	s	TRANSISTOR 2SK425-X15
R1	1-216-797-11	s	METAL, CHIP 10 5% 1/16W
R2	1-216-817-11	s	METAL, CHIP 470 5% 1/16W
R3	1-216-826-11	s	METAL, CHIP 2.7K 5% 1/16W
R4	1-218-721-11	s	METAL 16K 0.50% 1/16W
R5	1-218-740-11	s	METAL 100K 0.50% 1/16W
R6	1-218-733-11	s	METAL 51K 0.50% 1/16W
R7	1-218-668-11	s	METAL 100 0.50% 1/16W

(AU-167 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R8	1-218-484-11	s	METAL 750 0.50% 1/16W
R9	1-218-716-11	s	METAL 10K 0.50% 1/16W
R10	1-218-716-11	s	METAL 10K 0.50% 1/16W
R11	1-216-804-11	s	METAL 39K 0.50% 1/16W
R12	1-216-816-11	s	METAL, CHIP 390 5% 1/16W
R13	1-216-804-11	s	METAL 39K 0.50% 1/16W
R14	1-216-842-11	s	METAL, CHIP 56K 5% 1/16W
R15	1-218-707-11	s	METAL 4.3K 0.50% 1/16W
R16	1-216-842-11	s	METAL, CHIP 56K 5% 1/16W
R17	1-218-707-11	s	METAL 4.3K 0.50% 1/16W
R18	1-218-723-11	s	METAL 20K 0.50% 1/16W
R19	1-218-723-11	s	METAL 20K 0.50% 1/16W
R20	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R21	1-218-724-11	s	METAL 22K 0.50% 1/16W
R22	1-218-668-11	s	METAL 100 0.50% 1/16W
R23	1-216-857-11	s	METAL, CHIP 1M 5% 1/16W
R24	1-218-704-11	s	METAL 3.3K 0.50% 1/16W
R25	1-218-716-11	s	METAL 10K 0.50% 1/16W
R26	1-218-716-11	s	METAL 10K 0.50% 1/16W
R27	1-218-748-11	s	METAL 220K 0.50% 1/16W
R28	1-218-750-11	s	METAL 270K 0.50% 1/16W
R29	1-218-668-11	s	METAL 100 0.50% 1/16W
R30	1-218-668-11	s	METAL 100 0.50% 1/16W
R31	1-218-716-11	s	METAL 10K 0.50% 1/16W
R32	1-218-295-11	s	METAL 5.6K 0.50% 1/16W
R33	1-218-732-11	s	METAL 47K 0.50% 1/16W
R34	1-218-716-11	s	METAL 10K 0.50% 1/16W
R35	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R36	1-218-700-11	s	METAL 2.2K 0.50% 1/16W
R37	1-218-700-11	s	METAL 2.2K 0.50% 1/16W
R38	1-216-793-11	s	METAL 4.7 5% 1/16W
R39	1-218-676-11	s	METAL 220 0.50% 1/16W
RV1	1-237-036-11	s	RES, ADJ, METAL 10K
RV2	1-237-036-11	s	RES, ADJ, METAL 10K
RV3	1-237-036-11	s	RES, ADJ, METAL 10K
S1	1-570-839-11	s	SWITCH, SLIDE

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 IF-349 BOARD  
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Ref. No. or Q'ty	Part No.	SP Description
1pc	A-8271-401-A	o MOUNTED CIRCUIT BOARD, IF-349
7pcs	2-381-904-00	o HOLDER, LED
3pcs	7-682-546-04	s SCREW +B 3X5
2pcs	3-177-241-01	s KNOB (S), VOLUME
2pcs	7-621-731-08	s SET-SCT,HEX. 2X2.5,FLAT POINT
1pc	3-177-595-01	o SPACER, SW
C101	1-126-948-11	s ELECT 100uF 20% 35V
C102	1-164-156-11	s CERAMIC 0.1uF 25V0%
C103	1-135-076-21	s TANTALUM, CHIP 1uF 10% 35V
C104	1-162-970-11	s CERAMIC, CHIP 0.01uF 10% 25V
C105	1-162-970-11	s CERAMIC, CHIP 0.01uF 10% 25V
C106	1-162-970-11	s CERAMIC, CHIP 0.01uF 10% 25V
C107	1-162-970-11	s CERAMIC, CHIP 0.01uF 10% 25V
C108	1-126-948-11	s ELECT 100uF 20% 35V
C109	1-135-216-11	s TANTALUM, CHIP 10uF 20% 10V
C110	1-164-156-11	s CERAMIC 0.1uF 25V0%
C111	1-164-156-11	s CERAMIC 0.1uF 25V0%
C112	1-164-156-11	s CERAMIC 0.1uF 25V0%
C113	1-164-156-11	s CERAMIC 0.1uF 25V0%
C114	1-164-156-11	s CERAMIC 0.1uF 25V0%
C115	1-164-156-11	s CERAMIC 0.1uF 25V0%
C116	1-162-919-11	s CERAMIC, CHIP 22PF 5% 50V
C117	1-162-919-11	s CERAMIC, CHIP 22PF 5% 50V
C118	1-135-216-11	s TANTALUM, CHIP 10uF 20% 10V
C119	1-164-156-11	s CERAMIC 0.1uF 25V0%
C120	1-164-156-11	s CERAMIC 0.1uF 25V0%
C121	1-135-216-11	s TANTALUM, CHIP 10uF 20% 10V
C122	1-164-156-11	s CERAMIC 0.1uF 25V0%
C123	1-164-156-11	s CERAMIC 0.1uF 25V0%
C124	1-164-156-11	s CERAMIC 0.1uF 25V0%
C125	1-164-156-11	s CERAMIC 0.1uF 25V0%
C126	1-164-156-11	s CERAMIC 0.1uF 25V0%
C127	1-164-156-11	s CERAMIC 0.1uF 25V0%
C128	1-164-156-11	s CERAMIC 0.1uF 25V0%
C129	1-164-156-11	s CERAMIC 0.1uF 25V0%
C130	1-164-156-11	s CERAMIC 0.1uF 25V0%
C131	1-164-156-11	s CERAMIC 0.1uF 25V0%
C132	1-164-156-11	s CERAMIC 0.1uF 25V0%
CN101	1-580-563-11	o CONNECTOR, 16P, MALE
CNI114	1-540-253-11	s SOCKET, IC (PLCC)
CNI118	1-540-151-11	s SOCKET, IC
D101	8-719-800-76	s DIODE 1SS226
D102	8-719-901-44	s DIODE SLP144B
D103	8-719-901-44	s DIODE SLP144B
D104	8-719-822-06	s DIODE TLG206
D105	8-719-822-06	s DIODE TLG206
D106	8-719-822-06	s DIODE TLG206
D107	8-719-822-06	s DIODE TLG206
D108	8-719-822-06	s DIODE TLG206
D109	8-719-800-76	s DIODE 1SS226
IC101	8-759-926-14	s IC SN74HC148NS
IC102	8-759-142-20	s IC UPC4062G2
IC103	8-759-204-51	s IC TC40H008F
IC104	8-759-066-68	s IC REF-03GS
IC105	8-759-030-50	s IC MC14490F
IC106	8-759-030-50	s IC MC14490F

(IF-349 BOARD)

Ref. No. or Q'ty	Part No.	SP Description
IC107	8-759-030-50	s IC MC14490F
IC108	8-759-030-50	s IC MC14490F
IC109	8-759-973-71	s IC TL7705CPS-B
IC110	8-759-008-37	s IC MC74HC4050F
IC111	8-759-926-82	s IC SN74HC574ANS
IC112	8-759-926-82	s IC SN74HC574ANS
IC113	8-759-926-82	s IC SN74HC574ANS
IC114	8-759-054-59	s IC HD6475208CP
IC115	8-759-008-37	s IC MC74HC4050F
IC116	8-759-300-71	s IC MC14053BF
IC117	8-759-063-11	s IC 9800-IF349-V1.0
IC118	8-759-063-20	s IC 27C512-RMC-V1.0
IC119	8-759-322-72	s IC HM6264ALFP-10
L101	1-410-389-31	s INDUCTOR, CHIP 47uH
Q101	8-729-230-31	s TRANSISTOR 2SC3074LB
R101	1-218-883-11	s METAL 33K 0.50% 1/16W
R102	1-218-883-11	s METAL 33K 0.50% 1/16W
R103	1-218-883-11	s METAL 33K 0.50% 1/16W
R104	1-218-883-11	s METAL 33K 0.50% 1/16W
R105	1-218-883-11	s METAL 33K 0.50% 1/16W
R106	1-218-883-11	s METAL 33K 0.50% 1/16W
R107	1-218-883-11	s METAL 33K 0.50% 1/16W
R108	1-218-883-11	s METAL 33K 0.50% 1/16W
R109	1-216-864-11	s METAL, CHIP 0-OHM
R110	1-216-821-11	s METAL, CHIP 1K 5% 1/16W
R111	1-216-821-11	s METAL, CHIP 1K 5% 1/16W
R112	1-216-821-11	s METAL, CHIP 1K 5% 1/16W
R113	1-218-740-11	s METAL 100K 0.50% 1/16W
R114	1-216-821-11	s METAL, CHIP 1K 5% 1/16W
R115	1-218-668-11	s METAL 100 0.50% 1/16W
R116	1-218-883-11	s METAL 33K 0.50% 1/16W
R117	1-218-883-11	s METAL 33K 0.50% 1/16W
R118	1-218-883-11	s METAL 33K 0.50% 1/16W
R119	1-216-821-11	s METAL, CHIP 1K 5% 1/16W
R120	1-218-716-11	s METAL 10K 0.50% 1/16W
R121	1-218-716-11	s METAL 10K 0.50% 1/16W
R122	1-218-716-11	s METAL 10K 0.50% 1/16W
R123	1-218-740-11	s METAL 100K 0.50% 1/16W
R124	1-218-740-11	s METAL 100K 0.50% 1/16W
R125	1-218-716-11	s METAL 10K 0.50% 1/16W
R126	1-218-668-11	s METAL 100 0.50% 1/16W
R127	1-218-883-11	s METAL 33K 0.50% 1/16W
R128	1-216-821-11	s METAL, CHIP 1K 5% 1/16W
R129	1-216-821-11	s METAL, CHIP 1K 5% 1/16W
R130	1-216-821-11	s METAL, CHIP 1K 5% 1/16W
R131	1-216-821-11	s METAL, CHIP 1K 5% 1/16W
R132	1-216-821-11	s METAL, CHIP 1K 5% 1/16W
R133	1-216-821-11	s METAL, CHIP 1K 5% 1/16W
R134	1-216-821-11	s METAL, CHIP 1K 5% 1/16W
R135	1-218-668-11	s METAL 100 0.50% 1/16W
R136	1-218-668-11	s METAL 100 0.50% 1/16W
R137	1-216-821-11	s METAL, CHIP 1K 5% 1/16W
R138	1-216-821-11	s METAL, CHIP 1K 5% 1/16W
R139	1-216-817-11	s METAL, CHIP 470 5% 1/16W
R140	1-216-817-11	s METAL, CHIP 470 5% 1/16W
R141	1-216-817-11	s METAL, CHIP 470 5% 1/16W
R142	1-216-817-11	s METAL, CHIP 470 5% 1/16W

(IF-349 BOARD)

Ref. No. or Q'ty	Part No.	SP Description
R143	1-216-817-11 s	METAL, CHIP 470 5% 1/16W
R144	1-216-817-11 s	METAL, CHIP 470 5% 1/16W
R145	1-216-817-11 s	METAL, CHIP 470 5% 1/16W
R146	1-218-883-11 s	METAL 33K 0.50% 1/16W
R148	1-218-883-11 s	METAL 33K 0.50% 1/16W
R149	1-218-676-11 s	METAL 220 0.50% 1/16W
R150	1-218-676-11 s	METAL 220 0.50% 1/16W
RV101	1-238-289-11 s	RES, VAR CARBON 10K
RV102	1-238-289-11 s	RES, VAR CARBON 10K
RV103	1-238-289-11 s	RES, VAR CARBON 10K
RV104	1-238-289-11 s	RES, VAR CARBON 10K
RV105	1-238-289-11 s	RES, VAR CARBON 10K
RV106	1-230-139-00 s	RES, VAR CARBON 10K
RV107	1-230-139-00 s	RES, VAR CARBON 10K
RV108	1-238-289-11 s	RES, VAR CARBON 10K
RV109	1-238-289-11 s	RES, VAR CARBON 10K
S101	1-570-185-11 s	SWITCH, ROTARY
S102	1-570-185-11 s	SWITCH, ROTARY
S103	1-554-909-11 s	SWITCH, PUSH (1 KEY)
S104	1-572-565-11 s	SWITCH, DIP
S105	1-571-415-11 s	SWITCH, TOGGLE
S106	1-572-660-11 s	SWITCH, TOGGLE
S107	1-571-679-11 s	SWITCH, TOGGLE
S108	1-571-414-11 s	SWITCH, TOGGLE
S109	1-571-415-11 s	SWITCH, TOGGLE
S110	1-571-414-11 s	SWITCH, TOGGLE
S111	1-554-909-11 s	SWITCH, PUSH (1 KEY)
S112	1-554-371-51 s	SWITCH, TACTILE
S113	1-571-414-11 s	SWITCH, TOGGLE
X101	1-579-594-11 s	CRYSTAL 19.66080000MHZ

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FRAME  
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Ref. No. or Q'ty	Part No.	SP Description
1pc	1-950-218-11 o	HARNESS (INCOM-2)
C102	1-136-205-11 s	FILM 0.022MF 5% 630V
CN1F(to AU-167 board)	1-580-582-11 o	HOUSING, 12P
	1-580-599-11 o	CONTACT, FEMALE AWG22-30
CN2F(to AU-167 board)	1-580-579-11 o	HOUSING, 6P
	1-580-599-11 o	CONTACT, FEMALE AWG22-30
CN3F(to AU-167 board)	1-569-195-11 o	HOUSING, 2P
	1-569-192-11 o	CONTACT, FEMALE AWG22-26
CN4F(to AU-167 board)	1-580-579-11 o	HOUSING, 6P
	1-580-599-11 o	CONTACT, FEMALE AWG22-30
CN5F(to AU-167 board)	1-580-580-11 o	HOUSING, 8P
	1-580-599-11 o	CONTACT, FEMALE AWG22-30
CN6F(to AU-167 board)	1-580-584-11 o	HOUSING, 16P
	1-580-599-11 o	CONTACT, FEMALE AWG22-30
CN101F(to IF-349 board)	1-580-584-11 o	HOUSING, 16P
	1-580-599-11 o	CONTACT, FEMALE AWG22-30
CN51	1-562-221-21 s	CONNECTOR, 12P FEMALE "AUX"
CN52	1-562-335-00 s	CONNECTOR, 12P MALE "I/O"
CN53	1-561-376-00 s	CONNECTOR (S) 4P "DC 12V OUT"
CN54	1-509-186-31 s	CONNECTOR, 5P, FEMALE "INCOM"
R52	1-249-407-11 s	CARBON 150 5% 1/4W
RV51	1-237-981-11 s	RES, VAR, CARBON 20K "LEVEL"
S51	1-571-070-11 s	SWITCH, TOGGLE "COMMON/PRIVATE"
S52	1-554-396-00 s	SWITCH, TOGGLE "CALL/MIC"
VDR102	1-806-500-11 s	ERZ-C05DK390
(SUPPLIED ACCESSORY)		
	1-950-217-11 o	HARNESS (INCOM-1)
C101	1-136-205-11 s	FILM 0.022MF 5% 630V
R51	1-249-407-11 s	CARBON 150 5% 1/4W
J55	1-507-253-00 s	JACK, PHONE
VDR101	1-806-500-11 s	ERZ-C05DK390

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PACKING MATERIALS & SUPPLIED ACCESSORIES  
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Ref. No. or Q'ty	Part No.	SP Description
1pc	1-574-495-31	s CABLE 12P (8 CORE) 5m
1pc	1-950-217-12	o HARNESS (INCOM-1)
2pcs	7-627-556-38	s SCREW +P 2.6X4.0



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