

# 4-Wire Buffer Amplifier User Manual



**RTS**<sup>TM</sup>



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Technical questions should be directed to:

Customer Service Department  
RTS/Telex  
12000 Portland Avenue South  
Burnsville, MN 55337 U.S.A.  
Telephone: (800) 392-3497  
Fax: (800) 323-0498

## **RETURN SHIPPING INSTRUCTIONS PROCEDURE FOR RETURNS**

If a repair is necessary, contact the dealer where this unit was purchased. If repair through the dealer is not possible, obtain a RETURN AUTHORIZATION from:

Customer Service Department  
Telex Communications, Inc.  
Telephone: (877) 392-3497  
Fax: (800) 323-0498

DO NOT RETURN ANY EQUIPMENT DIRECTLY TO THE FACTORY WITHOUT FIRST OBTAINING A RETURN AUTHORIZATION. Be prepared to provide the company name, address, phone number, a person to contact regarding the repair, the type and quantity of equipment, a description of the problem and the serial number(s).

## **SHIPPING TO MANUFACTURER FOR REPAIR OR ADJUSTMENT**

All shipments of RTS products should be made via United Parcel Service or the best available shipper, prepaid. The equipment should be shipped in the original packing carton; if that is not available, use any suitable container that is rigid and of adequate size. If a substitute container is used, the equipment should be wrapped in paper and surrounded with at least four inches of excelsior or similar shock-absorbing material. All shipments must be sent to the following address.

Telex Communications Inc.  
8601 East Cornhusker Hwy  
Lincoln, NE 68507  
Attn Service Dept.

Upon completion of any repair the equipment will be returned via United Parcel Service or specified shipper collect.

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## General Description

The 4-wire Buffer Amplifier(4WBA) is a six channel, high performance audio line driver amplifier with transformer balanced inputs and outputs. It can be used as a six input, six output group of individual amplifiers in a 1 RU mount. Electrical isolation between amplifiers is sufficient to eliminate any chance of crosstalk.

## Features

### Transformer Balanced Input:

Each input uses two cross-coupled audio transformers to help minimize hum and provide galvanic isolation.

### Impedence:

Input impedance selection to either 600 Ohms or 10.0 K Ohms via 3-pin jumpers.

### Gain:

-40 to +20 dBu, five step selectable and  $\pm 10$ dB gain volume for RX channel operating level. -10 to +10 dBu adjustable for TX channel operating level. RX channel is available for input mute position. Nominal setup level is selectable 0dBu or -10dBu, via jumpers.

### Limiter:

Threshold level is adjustable -30 to -10dBu, via panel trimmer. Each RX channel of VOX tally output DB15F connector for the UIO256 GPI function.

### Transformer Balanced Outputs:

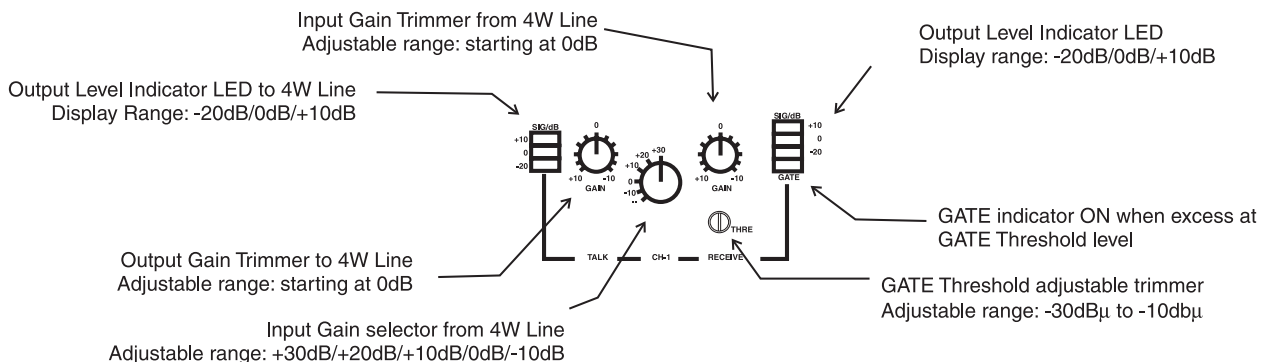
Four Wire side of In/Outputs capable of driving 600 Ohm loads. Matrix site In/Outputs stages transformer option.

### Redundant Power Supply:

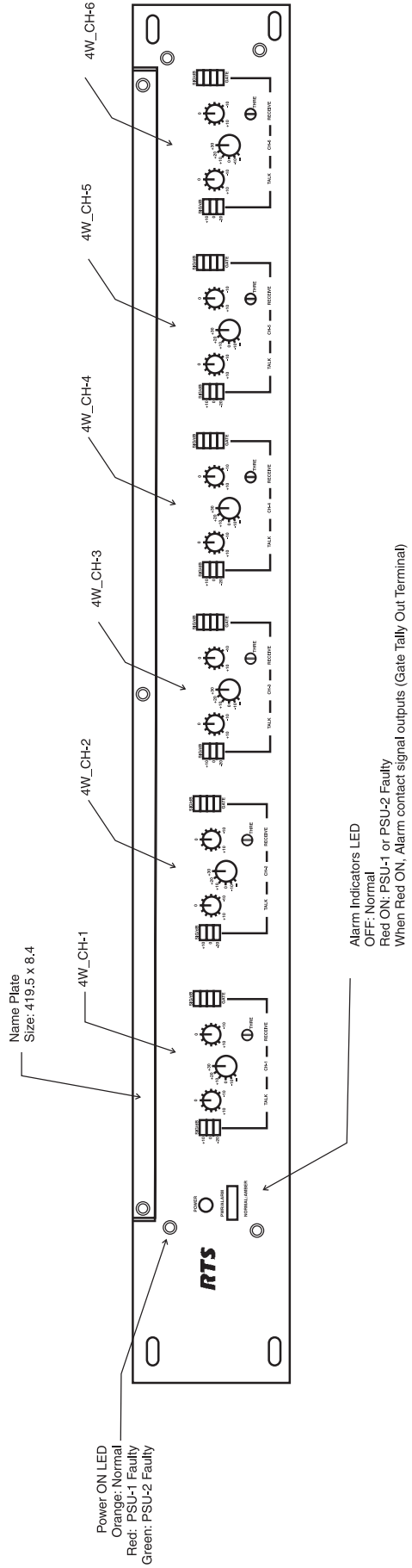
Dual power supply provides redundant operation. Bi-color LEDs and Fault LEDs with tally output to DB15F connector.

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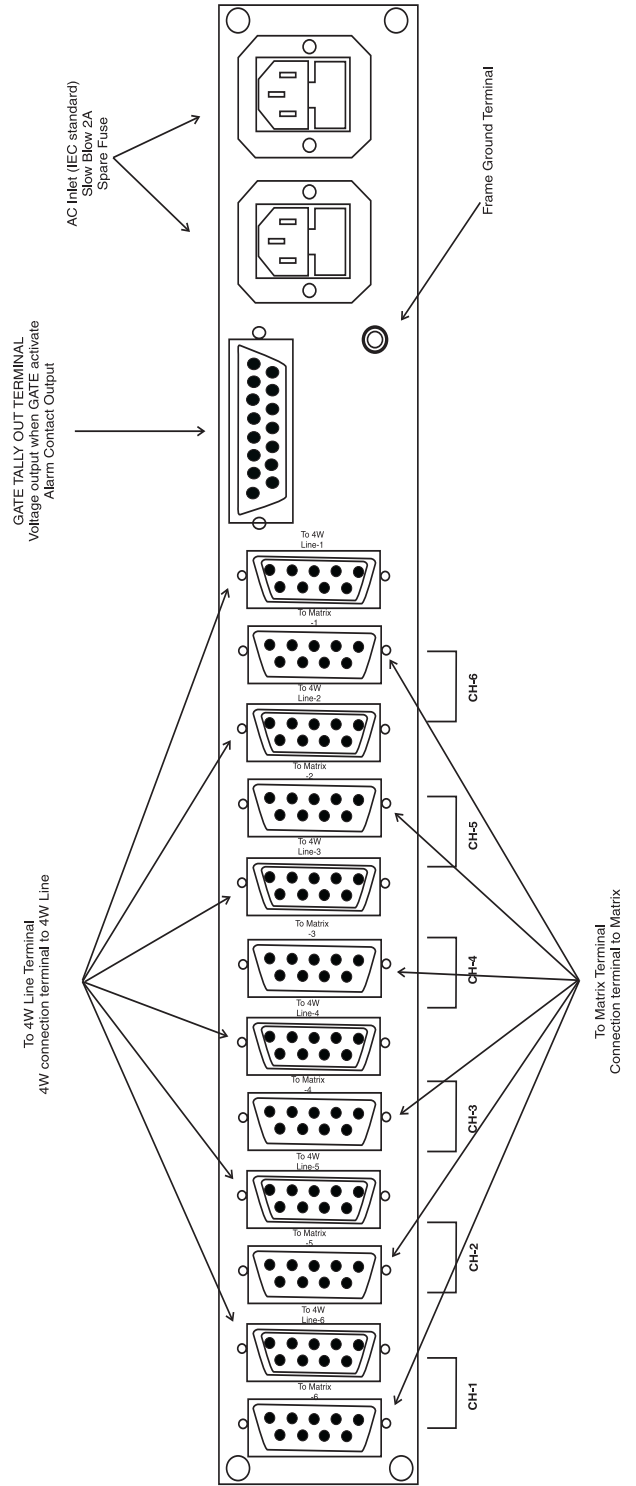
## Front Panel Controls



## Front Panel



## Rear Panel



## Connector Specifications

DB-9M (4W SIDE)		DB-9F (Matrix Side)		DB-15F (Gate Tally out)	
Pin No.		Pin No.		Pin No.	
1	Link	1	Link	1	CH-1 out
2	Link	2	Link	2	CH-2 out
3	Talk Ch Gnd	3	Talk Ch Gnd	3	CH-3 out
4	Receive Ch (Hi)	4	Receive Ch (Hi)	4	CH-4 out
5	Receive Ch (Lo)	5	Receive Ch (Lo)	5	CH-5 out
6	Link-	6	Link	6	Ch-6 out
7	Talk Ch (Lo)	7	Talk Ch (Lo)	7	NC
8	Talk Ch (Hi)	8	Talk Ch (Hi)	8	ALM-MC
9	Receive ch gnd	9	Receive ch gnd	9	(+) 12V
				10	(+) 12V
				11	(+) 12V
				12	(+) 12V
				13	(+) 12V
				14	(+) 12V
				15	ALM-COM



## Specifications

### 4-wire side

Connector type: DB-9 M (pin connection)

Receive Channel:

Input Gain Selector  
+30/+20/+10/0/+10 dB 6 position

Input Gain Trimmer  
±10dB selectable (except -)

Maximum Input Level:  
+30dBu (Input protection circuit is activated in case of excess input)

Input Circuit / Impedance  
Transformer balanced input 600 (20k selectable)

Gate Circuit (Bypass is selectable with setting inside)  
Threshold Level  
-30dBu - 10dBu (selectable in front panel by adjustable VR)

Audio Gate Attack Time  
30 msec

Holding Time  
3 sec (0.2.2 sec is adjustable with VR inside)

Release Time  
3 sec

Operation indication  
Mute - Red LED turn OFF  
VOX - Red LED turn ON

Filter Circuit  
80Hz H.P.F. and 10kHz L.P.F.

Limiter Circuit  
Threshold Level  
+10dBu (adjustable -6dB + 12dB via front panel trimmer VR)

Gate Tally Circuit  
Connector Type  
DB-15F (Pin Connection)  
Output signal  
Open collector output  
DC 12V 50mA load operate is possible  
Mute = High (DC12V)  
VOX = Low (0V)

### Talk CH

Operating Output Level  
0dBu (-10dBu is selectable by jumper inside)

Maximum Output Level  
+10dBu (in case of adjustment 0dBu for operating level, 600 load, 1kHz)  
0 dBu (in case of adjustment -10dBu for operating level, 600 load, 1kHz)

Output Gain Trimmer  
±10dB adjustable

Output Circuit/ Impedance  
Transformer balance output (600 transformer connected)

Ground Setting  
Floating (unfloating is selectable by jumper inside)

Signal Level Indicators  
+10dBu (Red)  
0dBu (Yellow)  
-20dBu (Green)

### Matrix Side

Connector Type  
DB-9F

Receive CH  
Operating Output Level  
0dBu

Maximum Output Level  
+10dBu (in case of adjustment 0dBu for operating level, 600 load, 1kHz)

Output Circuit/Impedance  
Transformer balanced output 20  
(Option: 600 balanced output by transformer coupling)

Signal Level Indicators  
+10dBu (Red)  
0dBu (Yellow)  
-20dBu (Red)

Talk CH  
Operating Output Level  
0dBu

Maximum Output Level  
+20dBu

Input Circuit / Impedance  
Activate balanced input 20K  
(option 600 balanced input by transformer coupling)

Ground Setting  
Floating (Unfloating is selectable by jumper inside)

### General

Frequency Response  
Talk CH 50Hz 10kHz (-3dB)  
Receive CH 80Hz 10kHz (-3dB)

Noise Level  
-60dB (30.30kHz)

Distortion  
0.5% (under limiter activate point)  
Frequency range 100Hz 10kHz (0dBu Output)

#### Crosstalk

-60dB (30Hz-10kHz)

-80dB (1kHz)

#### CMRR

-70dB (30Hz-1kHz)

-50dB (15kHz)

#### Activate Warranty Temperature

0.50

#### Power Supply

##### Power Requirements

+12V 2.5A 30W

DC/DC CON  $\pm 12$  V 0.45A (on board)

2PS unit for Redundant

##### Power Supply Indicators

Bi-color LED display. When NORMAL, Amber color turn ON. When in Fault, PSU-1 shows a Red LED ON, PSU-2 shows a Green LED ON.

##### Fault Alarm Signal Output

Contact signal (make) output to GATE

TALLY OUT

Front panel Red LED will appear.

##### AC Inputs

AC 100V/240V  $\pm 10\%$

##### Power Consumption

100 W

##### Fuse

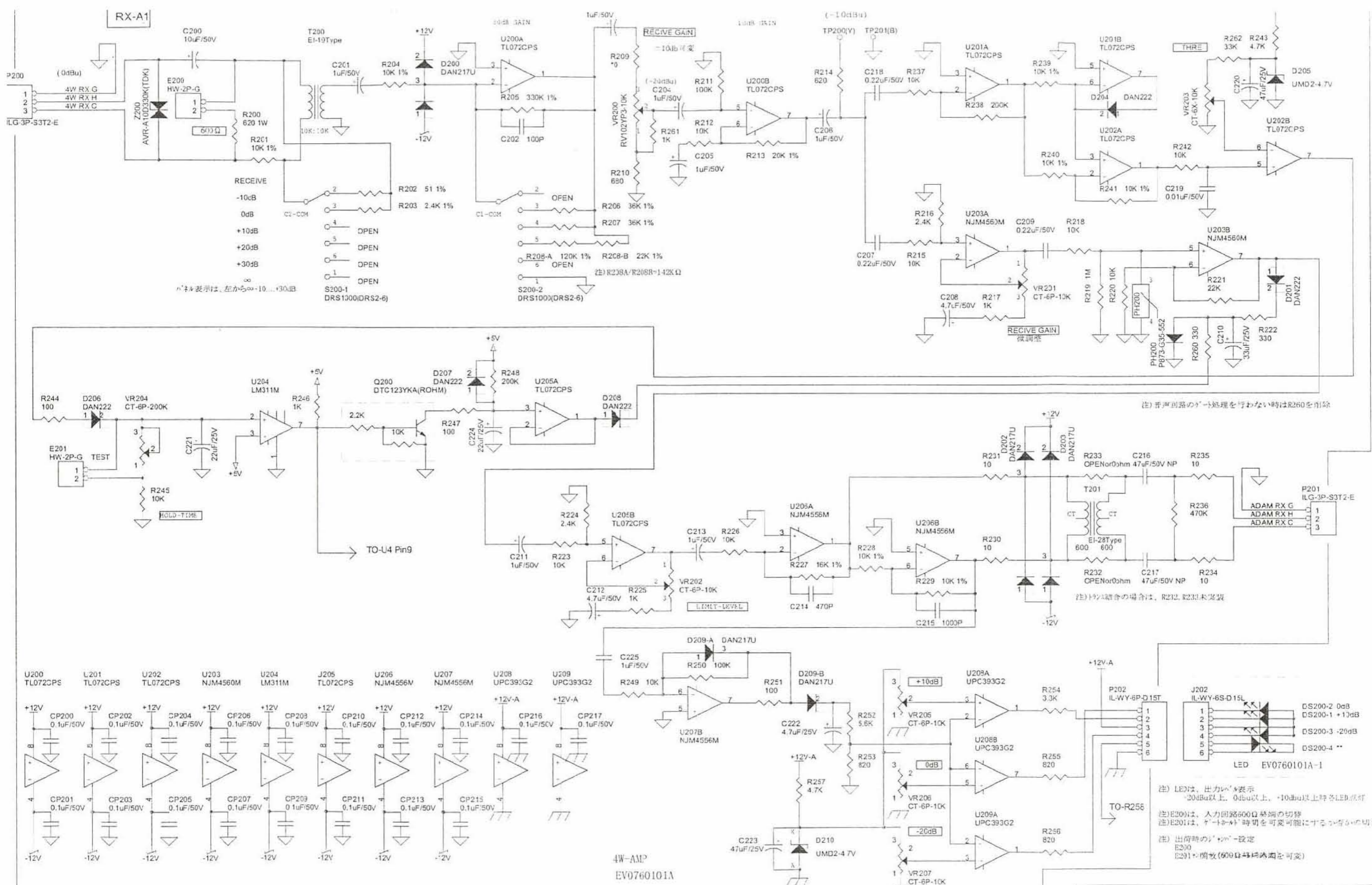
2 A (slow blow)

#### Dimensions / Weight

483(w) x 400(d) x 44(h) (mm)

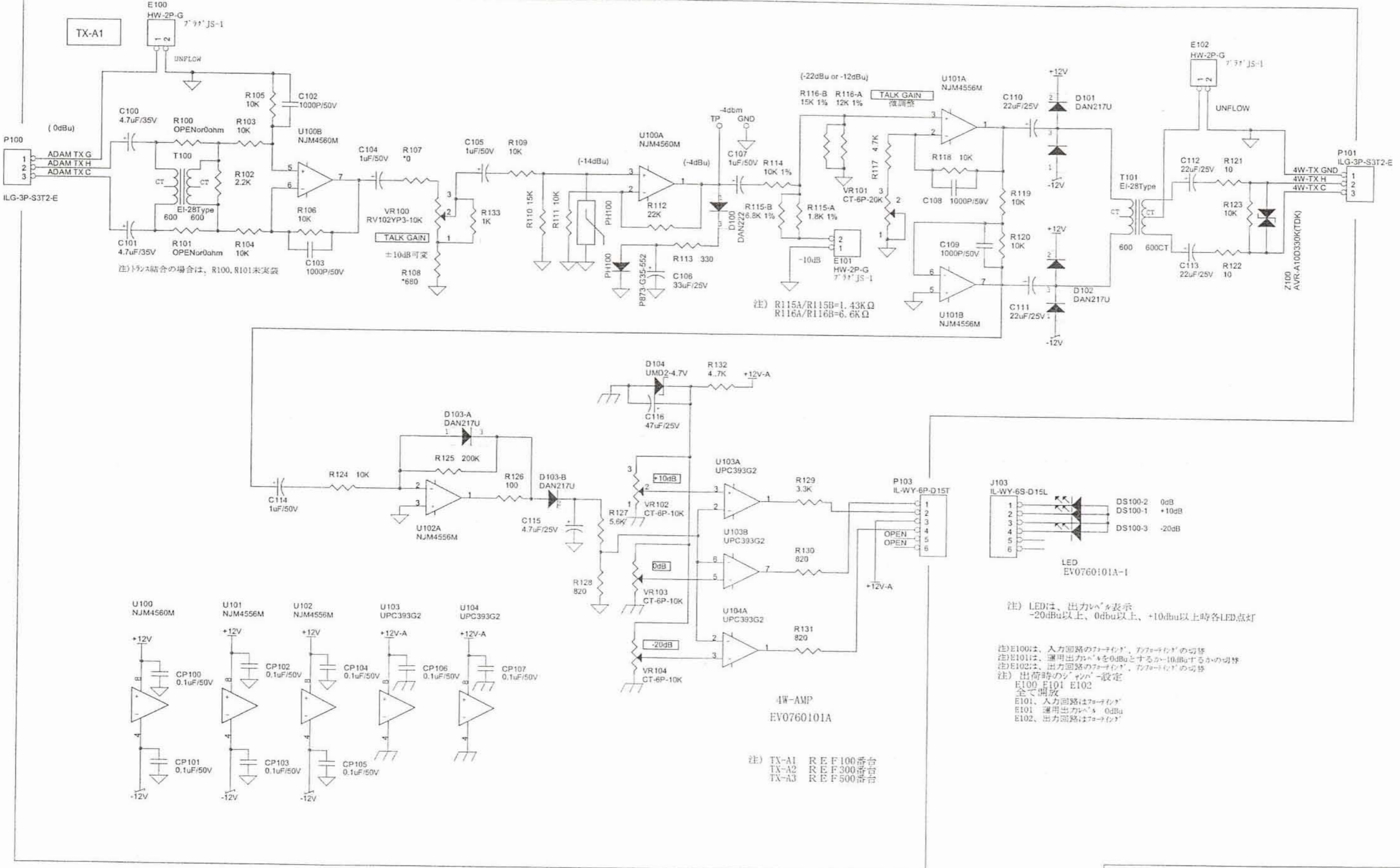
excl. maximum protuberance

weight = 5Kg



注) RX-A1 R E F 200番号  
 RX-A2 R E F 400番号  
 RX-A3 R E F 600番号

Title	RX CHANNEL	
Size	A3	Document Number
Date	2002.11.14	EV076102A
Sheet	1	of 1



注) トランス結合の場合は、R100, R101未実装

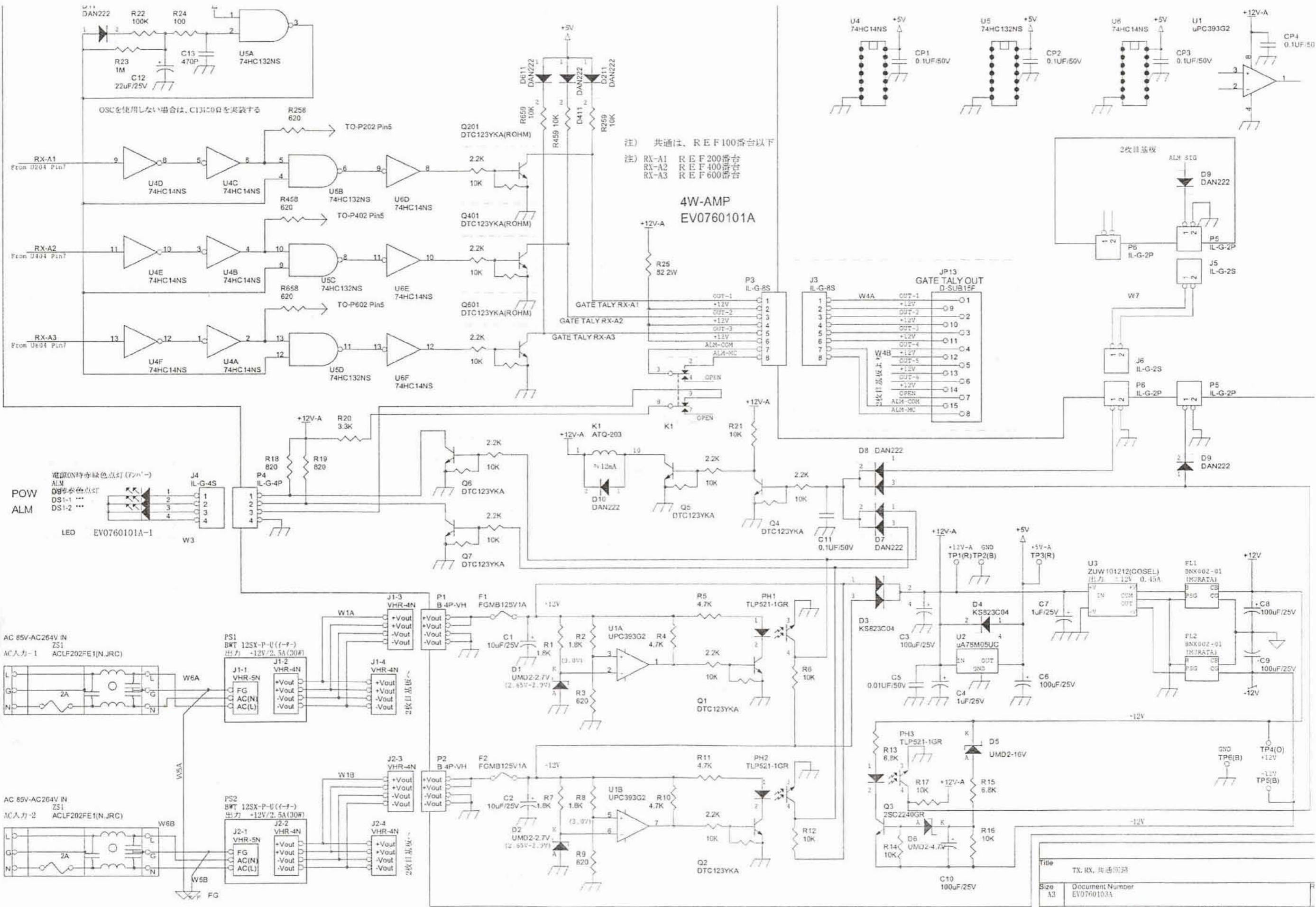
注) R115A/R115B=1.43KΩ  
R116A/R116B=6.6KΩ

注) LEDは、出力レベル表示  
-20dB以上、0dB以上、+10dB以上時各LED点灯

注) E100は、入力回路の「フーティング」、フ「フーティング」の切替  
注) E101は、運用出力レベルを0dBとするか-10dBとするかの切替  
注) E102は、出力回路の「フーティング」、フ「フーティング」の切替  
注) 出荷時の「ジャンパ」-設定  
E100 E101 E102  
全て開放  
E101、入力回路は「フーティング」  
E101 運用出力レベル 0dB  
E102、出力回路は「フーティング」

注) TX-A1 R E F 100番台  
TX-A2 R E F 300番台  
TX-A3 R E F 500番台

Title	TX CANNEL	
Size	Document Number	Rev
A3	EV0760101A	
Date	2003.3.24	Sheet 1 of 1



注) 共通は、REF 100番台以下  
 注) RX-A1 REF 200番台  
 RX-A2 REF 400番台  
 RX-A3 REF 600番台

4W-AMP  
EV0760101A

Title	TX, RX, 共通部
Size	A3
Document Number	EV0760101A
Date	2003.1.24
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