

Service  
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# Service Manual

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## Technical Specifications

### General data

Description	:	50W Active Subwoofer System
Type of system	:	Ground Firing Bass Reflex
Acoustical Volume	:	11 litres
Dimension (W x H x D)	:	235mm x 310mm x 400mm

### Enclosure

Front Cabinet	:	HIPS Painted (Black)
Rear Cabinet	:	HIPS (Black)
Front board	:	Chipboard 12mm
Back Board	:	MDF 12mm
Side Board	:	Chipboard 9 mm

### Speaker Units

Woofer	:	170mm ( 60W 6W)
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### Electrical Characteristic

Testing Condition : Nominal supply,  $R_L=6W$ ,  $f=100Hz$ ,  $V_{out}=500mV$   
Unless otherwise stated

	Nominal	Limit
Output Power 10%THD	43W	$\pm 1dB$
Min. X-over Frequency	60Hz	$\pm 10Hz$
Max. X-over Frequency	140Hz	$\pm 10Hz$
Lower cut off frequency	30Hz	$>55dB$
Signal-to-Noise Ratio	60dB	$>55dB$
Total harmonic distortion	0.50%	$<2\%$
Line in Sensitivity, $R_s=2k2W$	250mV	$\pm 2dB$
Speaker in sensitivity, $R_s=600W$	3.4V	$\pm 2dB$
Wireless in sensitivity, $R_s=2k2W$	150mV	$\pm 2dB$
Standby power consumption	4.5W	-
Power consumption 1/8Prated	26W	-

## **Control Knob and Switches**

- Rotary potentiometer 3209 : Volume control  
Fully Clock-wise = max. vol.  
Fully anticlock-wise = min. vol.
- Rotary potentiometer 3208 : Adjustment of crossover frequency  
Fully clock-wise = min. x-over freq.  
Fully anti clock-wise = max. x-over freq.
- Push Switch 1501 : To switch the subwoofer from standby mode to active mode
- Slide switch 1502 : To reverse the phase of the output signal
- Slide switch 1503 : FB201 To select the signal source between line-in and spk-in  
FB202 To select the signal source between line-in and wireless
- Dual-colour LED 6201 : Green = Active mode, Red = Standby mode.

## **Operating Temperature**

+5 DegC to +35 DegC

- Testing standards : UAN-D1059
- Safety : IEC65, UL1492
- EM Compatibility : EMC : EN55013 / EN55020 / FCC15  
ESD : UAN-D1724 (Set level)

## **Demounting Instruction :**

### **Service Of Transformer.**

Unscrew the 6 screws which are fixed at the rear panel to wood.

Unscrew 2 small screw which are fixed between power terminal to rear terminal.

Unplug the cable connector which are fixed to the power amplifier PCB.

Unscrew the transformer holder and disassemble the transformer together with transformer PCB.

Disassemble the transformer from transformer PCB and replace it with a new transformer.

To remount the box again, repeat the same actions but in reverse sense.

### **Service Of The Power Amplifier.**

Unscrew the 2 screws which are fixed to the plastic PCB holder at each end of the heat sink holder.

Unscrew 1 screw at the back of the PCB near the rear panel.

Replace the components which are defected(burnt) with a new one.

To remount back the amplifier, repeat the same action but in the reverse sense.

### **Service Of Socket PCB.**

Unscrew the 5 screws from the rear panel.

Replace the components which are defected with new one.

To remount back the Socket PCB, repeat the same action but in the reverse sense.

### **Demounting The Front Panel & Service The Front PCB.**

Remove the 2 rubber feet from the front foot.

Unscrew the 2 screws from the front foot and remove the front foot.

Knock out the front panel slowly from the bottom and use a flat screw-driver to remove the front panel boss which are attached to the wooden box.

Remove the volume knob , power knob and the rotary knob from the front panel.

Unscrew one nut from the volume switch at the front part of the front panel.

Unscrew the 3 screws of the front PCB from the back part of the front panel.

Disassemble the front PCB and replace the defected components with new components.

To remount the Front PCB again, repeat the same action but in the reverse sense.

## Mechanical Part List.

Item No	Description	Versions.	Qty.	Factory Code	Service Code
1	Front Panel. (Black)	FB 201 /01/02/17	1	4399 294 10811	4822 459 04567
2	Front Panel. (Silver)	FB 202 /01/02/10	1	4399 294 11051	4822 459 04716
3	Power Button.	FB 201 /01/02/17 FB 202 /01/02/10	1	4399 294 10531	4822 410 11136
4	Volume Knob.	FB 201 /01/02/17 FB 202 /01/02/10	1	4399 294 10541	4822 410 11137
5	Rotary Knob.	FB 201 /01/02/17 FB 202 /01/02/10	1	4399 294 10551	4822 410 11138
6	Rubber Foot	FB 201 /01/02/17 FB 202 /01/02/10	4	4399 294 01861	4822 462 10922
7	Transformer	FB 201 /01/02/17 FB 202 /01/02/10	1	3139 118 31651	4822 146 10795
8	Woofers 6 1/2"	FB 201 /01/02/17 FB 202 /01/02/10	1	2499 297 64506	4822 240 10224

## ELECTRICAL PARTS LIST

### MISCELLANEOUS

	4822 401 11695	SPRING CLIP
	4822 492 71733	SPRING CLIP AN7164
1201	4822 265 31016	△ MAINS SOCKETS /17
1201	4822 265 31015	△ MAINS SOCKETS /01/02
1202	4822 272 10269	△ VOLTAGE SELECTOR /01
1205	4822 071 52002	△ FUSE RAD T2A IEC 250V /01/02
1211	4822 252 51123	△ FUSE RAD T6.3A UL 250V /17
1211	4822 071 55002	△ FUSE RAD T5A IEC 250V /01/02
1212	4822 253 50137	△ FUSE RAD T2.5A UL 250V /02/17
1212	4822 071 51252	△ FUSE RAD T1.25A IEC 250V /01
1213	4822 253 50137	△ FUSE RAD T2.5A UL 250V /02/17
1213	4822 071 51252	△ FUSE RAD T1.25A IEC 250V /01
1291	4822 265 10967	LOUDSPEAKER-IN SOCKET
1292	4822 265 10967	LOUDSPEAKER-OUT SOCKET
1501	4822 276 12648	STANDBY SWITCH
1502	4822 277 11668	PHASE SELECT SWITCH
1503	4822 277 11668	SOURCE SELECT SWITCH
1601	4822 267 31729	LINE-IN CINCH SOCKET

### CAPACITORS

2101	5322 121 42386	CAP MPOL 63V S 100N PM10
2102	5322 121 42386	CAP MPOL 63V S 100N PM10
2103	5322 121 42386	CAP MPOL 63V S 100N PM10
2104	5322 121 42386	CAP MPOL 63V S 100N PM10
2105	4822 124 41596	ELCAP 50V S 22U PM20
2106	4822 124 41993	ELCAP RE2 35V S 2200U PM20
2107	4822 124 80415	ELCAP LA5 50V S 4700U PM20
2108	4822 124 41596	ELCAP 50V S 22U PM20
2109	4822 124 40433	ELCAP 25V S 47U PM20
2111	4822 124 40433	ELCAP 25V S 47U PM20
2201	5322 121 42386	CAP MPOL 63V S 100N PM10
2203	4822 124 22263	ELCAP 25V S 220U PM20 COL
2204	4822 124 41579	ELCAP 50V S 10U PM20 COL
2205	4822 124 40433	ELCAP 25V S 47U PM20 COL
2206	4822 121 43526	CAP MPOL 63V S 47N PM10
2207	4822 126 12339	CER2 TUB Y5R 16V A 2N2 PM10
2208	4822 121 51387	CER2 TUB Y5S 16V A 10N PM20
2301	4822 124 40242	ELCAP 50V S 1U PM20
2302	4822 124 41596	ELCAP 50V S 22U PM20
2303	4822 121 51387	CER2 TUB Y5S 16V A 10N PM20
2305	4822 121 51387	CER2 TUB Y5S 16V A 10N PM20
2306	4822 121 51387	CER2 TUB Y5S 16V A 10N PM20
2307	4822 124 40242	ELCAP 50V S 1U PM20
2308	4822 124 40433	ELCAP 25V S 47U PM20
2309	4822 124 40433	ELCAP 25V S 47U PM20
2310	4822 124 40242	ELCAP 50V S 1U PM20
2311	5322 121 42386	CAP MPOL 63V S 100N PM10
2312	5322 121 42386	CAP MPOL 63V S 100N PM10
2313	4822 126 11585	CER2 TUB Y5V 25V A 22N P8020
2315	4822 126 11585	CER2 TUB Y5V 25V A 22N P8020
2316	4822 121 51387	CER2 TUB Y5S 16V A 10N PM20
2317	4822 122 33519	CER2 TUB Y5P 50V A 470P PM10
2318	4822 122 33519	CER2 TUB Y5P 50V A 470P PM10
2401	4822 124 22263	ELCAP 25V S 220U PM20
2402	4822 121 51252	CAP POL 50V S 470N PM10

2403	4822 121 51252	CAP POL 50V S 470N PM10
2404	4822 126 12339	CER2 TUB Y5R 16V A 2N2 PM10
2405	4822 126 12339	CER2 TUB Y5R 16V A 2N2 PM10
2406	5322 121 42386	CAP MPOL 63V S 100N PM10
2407	5322 121 42386	CAP MPOL 63V S 100N PM10
2408	4822 126 12339	CER2 TUB Y5R 16V A 2N2 PM10
2601	4822 126 11585	CER2 TUB Y5V 25V A 22N P8020
2602	4822 126 11585	CER2 TUB Y5V 25V A 22N P8020
2603	4822 126 12785	CER2 TUB Y5V 50V A 47N P8020
2604	4822 126 11585	CER2 TUB Y5V 25V A 22N P8020
2605	4822 126 11585	CER2 TUB Y5V 25V A 22N P8020

### RESISTORS

3101	4822 116 52283	RST FLM 1/6W A 4K7 PM5
3102	4822 116 52283	RST FLM 1/6W A 4K7 PM5
3103	4822 116 52283	RST FLM 1/6W A 4K7 PM5
3104	4822 116 52175	RST FLM 1/6W A 100R PM5
3106	4822 053 21106	△ RST MGL VR37 A 10M PM5 /17
3107	4822 052 10228	△ RST FUSE NFR25 A 2R2 PM5
3108	4822 116 83864	RST FLM 1/6W A 10K PM5
3109	4822 050 11002	RST FLM 1/6W A 1K PM5
3110	4822 116 83864	RST FLM 1/6W A 10K PM5
3201	4822 116 52257	RST FLM 1/6W A 22K PM5
3202	4822 116 83883	RST FLM 1/6W A 470R PM5
3203	4822 116 52257	RST FLM 1/6W A 22K PM5
3204	4822 116 52228	RST FLM 1/6W A 680R PM5
3205	4822 116 52244	RST FLM 1/6W A 15K PM5
3206	4822 116 52297	RST FLM 1/6W A 68K PM5
3207	4822 116 52297	RST FLM 1/6W A 68K PM5
3208	4822 102 10453	CARB POT ROT 50KAX2
3209	4822 102 10453	CARB POT ROT 50KAX2
3210	4822 116 52219	RST FLM 1/6W A 330R PM5
3211	4822 116 52175	RST FLM 1/6W A 100R PM5
3212	4822 116 83864	RST FLM 1/6W A 10K PM5
3301	4822 116 83884	RST FLM 1/6W A 47K PM5
3302	4822 116 52276	RST FLM 1/6W A 3K9 PM5
3303	4822 116 52269	RST FLM 1/6W A 3K3 PM5
3304	4822 116 83872	RST FLM 1/6W A 220R PM5
3305	4822 116 83872	RST FLM 1/6W A 220R PM5
3307	4822 116 83872	RST FLM 1/6W A 220R PM5
3308	4822 116 83872	RST FLM 1/6W A 220R PM5
3309	4822 052 10228	△ RST FUSE NFR25 A 2R2 PM5
3310	4822 052 10228	△ RST FUSE NFR25 A 2R2 PM5
3311	4822 116 52249	RST FLM 1/6W A 1K8 PM5A
3401	4822 116 83883	RST FLM 1/6W A 470R PM5
3402	4822 116 52291	RST FLM 1/6W A 56K PM5
3403	4822 116 52239	RST FLM 1/6W A 120K PM5
3404	4822 116 52245	RST FLM 1/6W A 150K PM5
3405	4822 116 83864	RST FLM 1/6W A 10K PM5
3406	4822 116 83961	RST FLM 1/6W A 6K8 PM5
3407	4822 116 83878	RST FLM 1/6W A 270K PM5
3408	4822 116 52303	RST FLM 1/6W A 8K2 PM5
3409	4822 116 52257	RST FLM 1/6W A 22K PM5
3410	4822 116 52303	RST FLM 1/6W A 8K2 PM5
3411	4822 116 52238	RST FLM 1/6W A 12K PM5

## **ELECTRICAL PARTS LIST**

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3601	4822 050 11002	RST FLM 1/6W A 1K PM5
3602	4822 050 11002	RST FLM 1/6W A 1K PM5
3603	4822 050 11002	RST FLM 1/6W A 1K PM5
3604	4822 050 11002	RST FLM 1/6W A 1K PM5
3605	4822 116 52195	RST FLM 1/6W A 47R PM5
3606	4822 116 52195	RST FLM 1/6W A 47R PM5
3607	4822 116 52283	RST FLM 1/6W A 4K7 PM5

### **COILS & FILTERS**

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5202	4822 157 71285	△ INDFXD CHOKE COIL 400U PM30 /01/02
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### **DIODES**

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6102	5322 130 80686	1N5392
6103	5322 130 80686	1N5392
6105	4822 130 82079	D3SBA20
6106	4822 130 34278	BZX79-C6V8
6107	4822 130 34197	BZX79-C12V
6108	4822 130 30621	1N4148
6109	4822 130 30621	1N4148
6201	4822 130 10774	LTL-293SJ
6202	4822 130 30621	1N4148
6303	4822 130 34174	BZX79-C4V7
6304	4822 130 34174	BZX79-C4V7
6305	4822 130 30621	1N4148
6306	4822 130 30621	1N4148
6307	5322 130 80686	1N5392
6308	4822 130 34281	BZX79-C15
6309	4822 130 30621	1N4148
6311	4822 130 30621	1N4148
6312	4822 130 30621	1N4148
6313	4822 130 34278	BZX79-C6V8
6601	4822 130 30621	1N4148
6602	4822 130 30621	1N4148

### **TRANSISTORS & INTEGRATED CIRCUITS**

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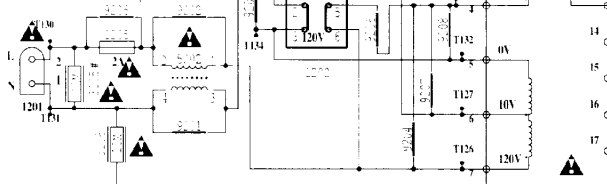
7101	4822 130 40959	BC547B
7102	4822 130 40982	BD437
7103	4822 130 44568	BC557B
7104	4822 130 44568	BC557B
7105	4822 130 40959	BC547B
7106	4822 130 44568	BC557B
7107	4822 130 40959	BC547B
7108	4822 130 10812	BDX53BFI
7164	4822 209 90411	AN7164

NOTE: ONLY THE PARTS MENTIONED IN THIS LIST ARE NORMAL SERVICE PARTS.

# TRAF0 PCB

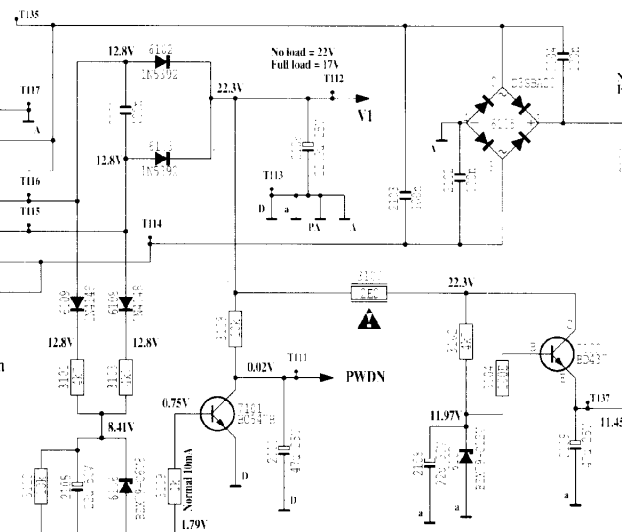
157mm X 81mm

A DR for U.L. version only



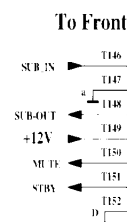
1240 - CWAS 07EH/07OP 220mm

Version	1202	1205	1211	1212	5202	9201	9203	9205	9206	9207	9208	9209
				1213		9202	9204					
001,021	X	X	5.0A	1.25A	X	-	-	-	X	-	-	X
002,022	-	X	5.0A	1.25A	X	-	-	-	-	X	-	-
017,037	-	-	6.3A	2.5A	-	X	X	X	-	-	-	-
010,030	-	-	5.0A	1.25A	X	-	-	X	-	-	X	-



# POWER AMP PCB

145mm X 85mm



# SOCKET PCB

135mm X 45mm

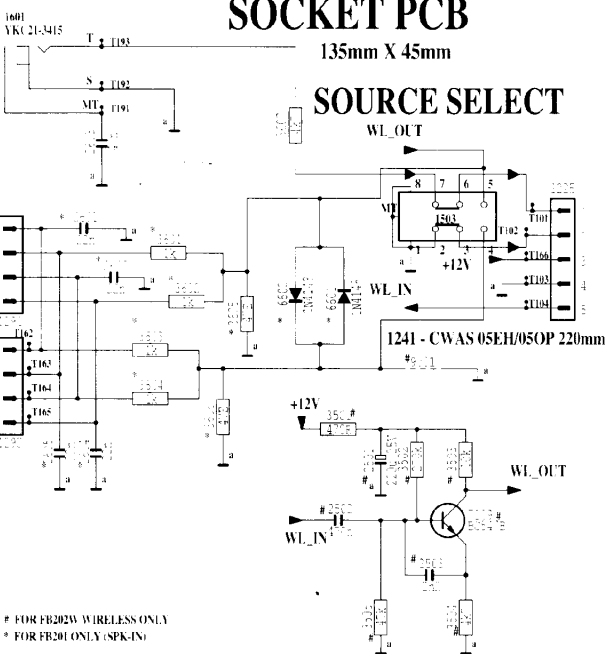
## LINE IN

300mV  
Z\_OUT < 2K2  
100Hz

3.4Vrms 100Hz  
6 Ohm Bridge

## SPK IN

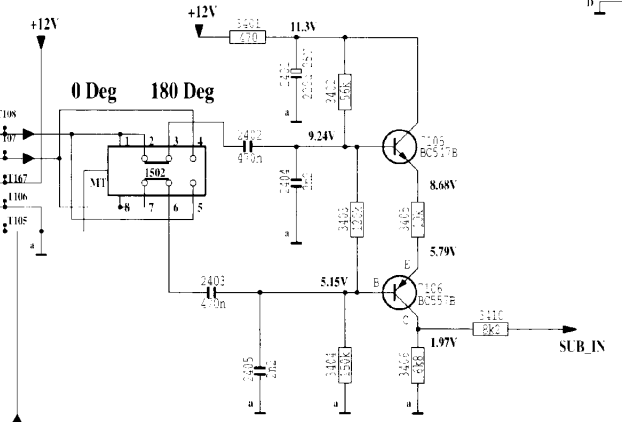
## SPK OUT



# FOR FB202W WIRELESS ONLY  
\* FOR FB201 ONLY (SPK-IN)

## PHASE SELECT

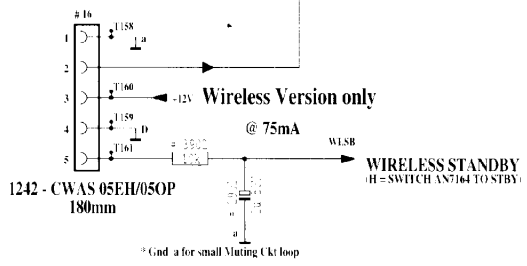
0 Deg 180 Deg



# WIRELESS RECEIVER

- Sig Gnd 1
  - Output 2
  - Supply 3
  - Supply Gnd 4
  - STANDBY 5
- (H = Sw Power Amp to Sby)

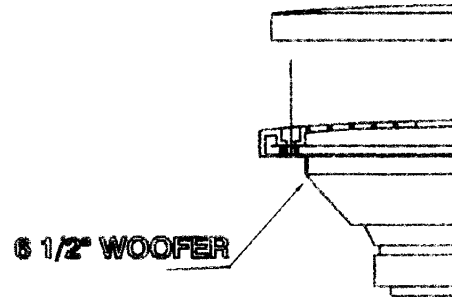
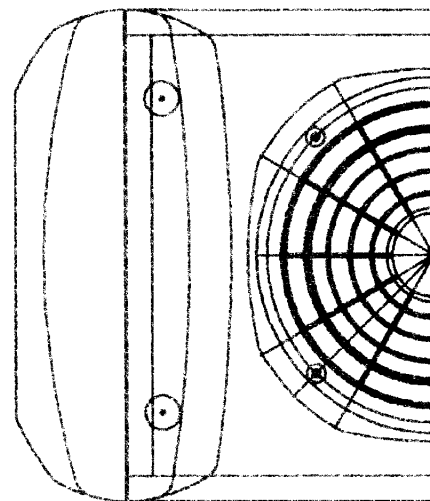
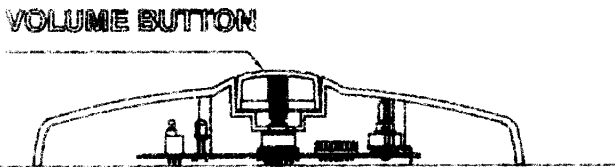
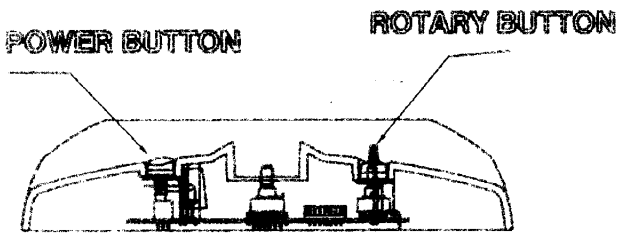
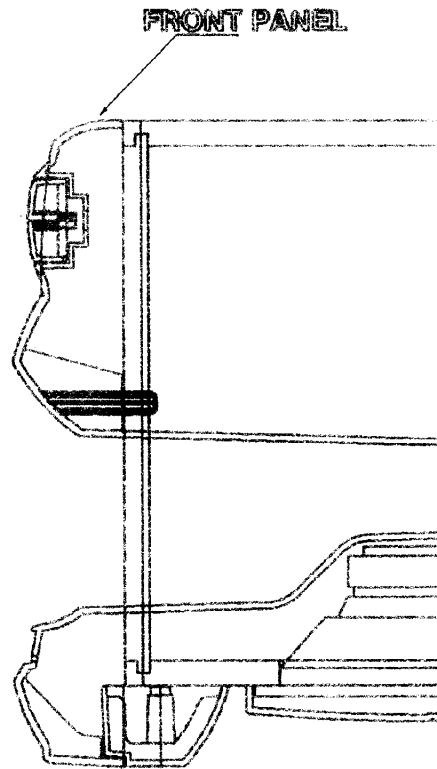
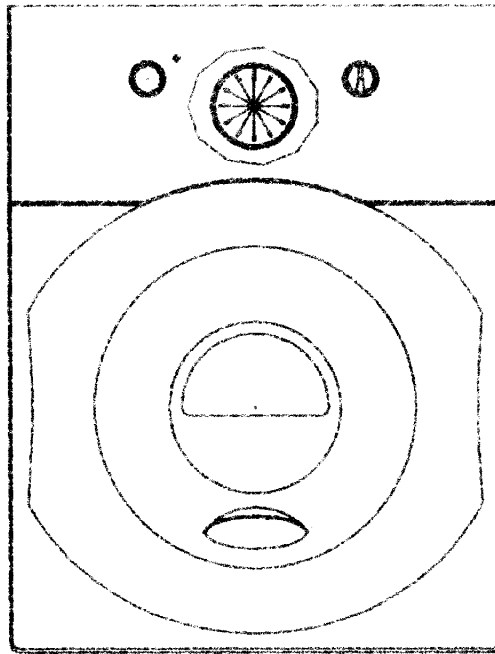
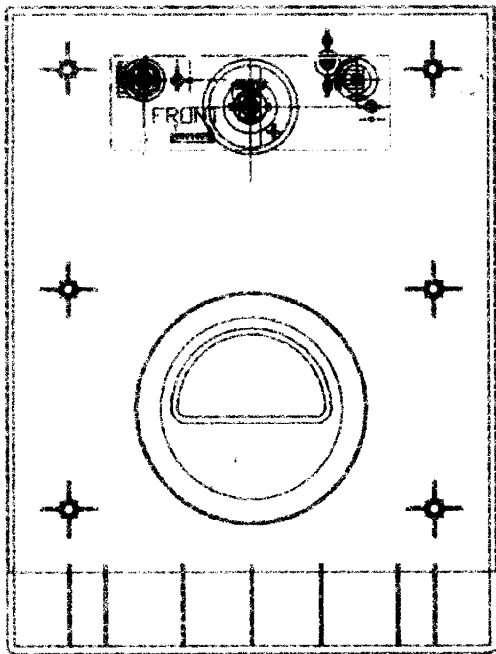
1242 - CWAS 05EH/05OP  
180mm



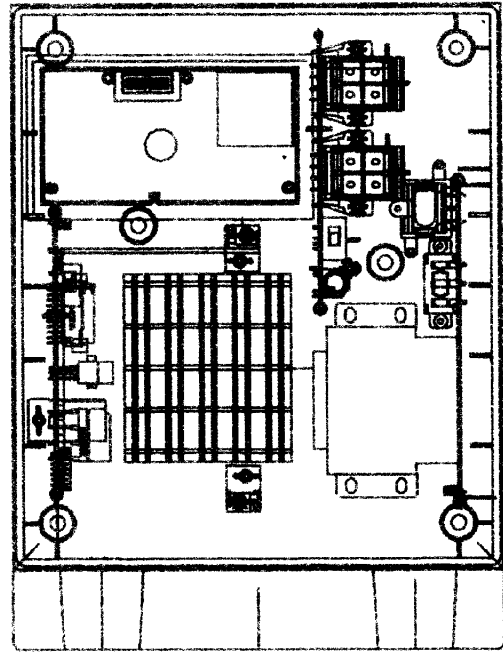
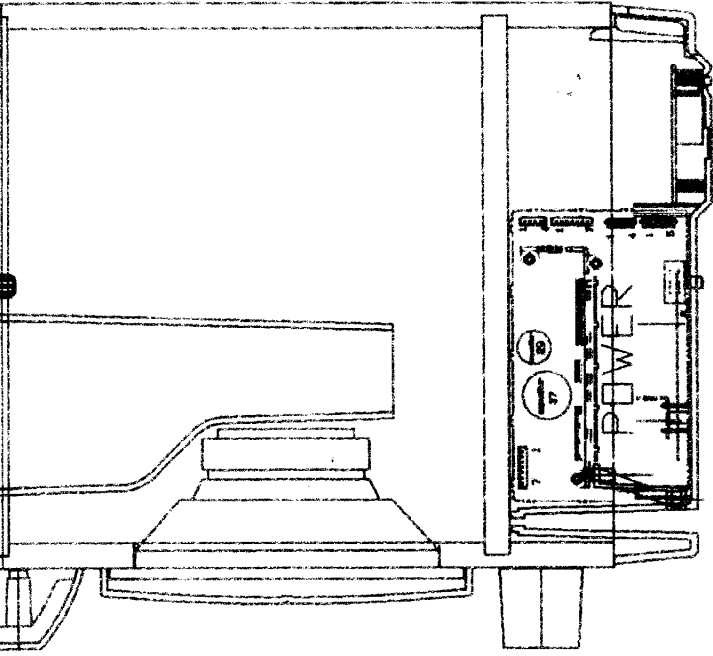
# FOR FB202W WIRELESS  
\* FOR FB201 ONLY (SPK-IN)  
@ FOR PROVISION ONLY



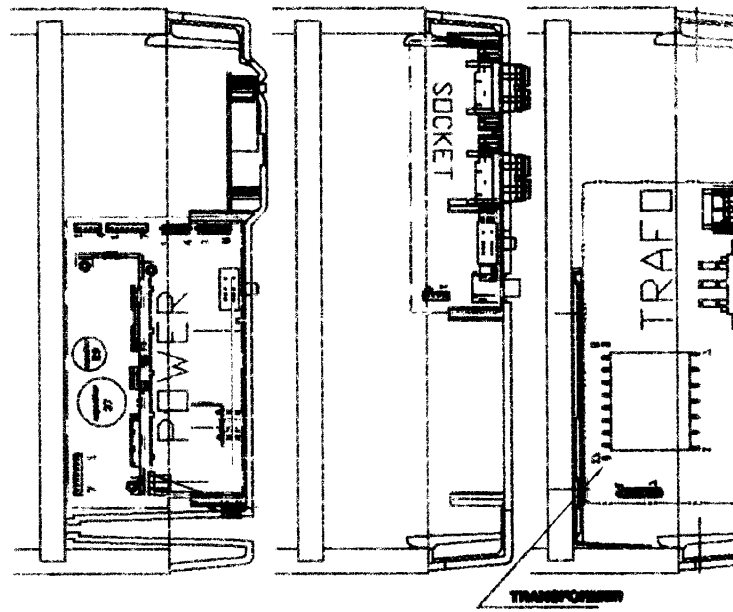
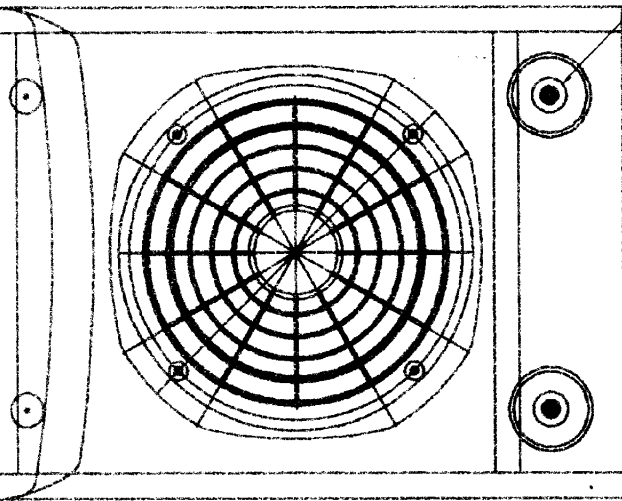




FRONT PANEL



RUBBER FOOT



OFFER

