

**ZEPHYRUS**  
ELECTRONICS, LTD

**300 SERIES**  
**Satellite Radio &**  
**Data Products**

**ZEPHYRUS ELECTRONICS, Ltd**

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# ZEPHYRUS

**Thank you for using our equipment.** We will do our best to earn your continuing confidence in Zephyrus and our products. Any time you need information or help, give us a call at 918-437-3333 (US).

It's a good idea to look the equipment over for any shipping damage as soon as it is received. If damage is discovered, contact and file a claim with the freight company. They are responsible to you.

We hope it doesn't happen, but if you ever have a problem that requires you to send equipment back to us for repair or replacement, ***Please pack a note in with the device. Give us as much information as possible;***-- what the problem is and anything you can tell us that might help solve it. Customer feedback is the last line and a very vital part of our overall quality control.

It will also help both of us if you will get an RMA number from the service technician you are talking with. We will certainly accept products for service without a number, but any notes that the tech makes in his phone calls with you might not get tied to your unit when it gets here.

**Our Limited Warranty** is as follows:

We will fix or replace any product that is defective within One year (Australia) after you receive it. We won't cover damage from accident or misuse. Warranty is FOB the factory or our servicing distributor. Our responsibility is limited to repair or replacement only and no other expenses or consequential damages. No other warranties apply.

Whether your warranty has expired or not, customer support and assistance is the backbone of our business. Our management has a background in broadcasting, so we understand the seriousness of "equipment down." We'll do all we can. --Your referral to a friend might even be our next sale!

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*We make quality affordable*

## 304 Mainframe

Refer to Figures 1 & 4

**Physical:** The 304 Mainframe occupies one 1 3/4" space in a standard 19" equipment rack. Total depth is 15 1/2". Additional depth needs to be provided to allow for cable bends. Weight is 10 pounds. A removable smoked transparent front panel permits access to the front of circuit cards.

**Electrical:** The 304 requires 117 V, 60 Hz AC power. It contains an unregulated positive and negative power supply for operation of up to four standard width 300 series circuit boards. A Crowbar power shuts down voltage to the LNB in the event of a short circuit in the coax line. To restore power the load must be fully disconnected temporarily or the 304 power must be turned off for a few seconds. **Replace the fuse with a 1/2 amp slow blow only.**

**Circuit Boards:** The 304 has spaces for four standard width boards. However, each 304 mainframe can hold only one 391 or 392 satellite baseband receiver. Other cards can be of any mix. The 383 tone decoder is a double-wide board and occupies two spaces.

**Back Panels** of the 304 vary with the circuit board requirements. Factory installed cards are labeled on the rear panel. Stickers are furnished for labeling of boards added in the field.

**Interconnect Power Cables :** Three different interconnect jumpers are used within the 304. They are as follows:

<b>Application</b>	<b>Color</b>	<b>Voltage</b>
Board	Red	+18 unreg
power	Brown	Gnd
interconnect. Violet	- 18 unreg	
LNB Power	Red	+18 unreg
Tuner Power	Orange	+12 regulated
Tuning Voltage White	variable positive	
<i>(Wires to Tuner. Red is from power supply board. Orange and White run from the satellite receiver card)</i>		
Power to 391 or	Red	+18 unreg
392 Satellite Yellow	+28 tuning voltage supply	
Receiver card.	Brown	Gnd

## 331 (mono) and 332 (stereo) FM MODULATORS

### Installation and Operation

The 331 or 332 Modulators are synthesized for frequency agility in 200 kHz steps to standard FM Broadcast frequency assignments. Refer to the Operating Frequency Chart for Tune Switch settings. Special frequencies outside the standard FM band are available on special order. Modulator outputs are very free from spurious emissions and are designed to operate with cable TV head-end gear.

Refer to Figure 332-1 for location of key circuit board connections and controls. Input audio levels are adjusted with VR-7 (left or mono) and VR-8 (right channel). They are factory set for full deviation with an input audio level of Zero dbm. Audio input is unbalanced. Watch phasing if using "half" of a balanced audio line in stereo units.

Adjustments should not be attempted without proper instrumentation.

Do not operate the 331/332 without the lid in place.

### SPECIFICATIONS-STEREO (and mono where applicable)

100% Deviation	+/- 75 kHz includes 10% deviation of 19 kHz pilot
Freq Response	20-15000 Hz within 1 db
Pre emphasis	75 microseconds
Distortion	<1%
Stereo Separation	>30 db
Signal to Noise	>63 db\
Audio input level	-10 to +18 dbm adjustable
Input impedance	10k ohms, unbalanced
Stereo Format	Standard Stereo Multiplex with 19 kHz pilot
RF output	88.1 to 107.9 MHz agile in 200 kHz steps
RF level	+20 to +50 dbmv adjustable into 75 ohms
Spurious and Harmonics	>60 db below +50 dbmv
Power Requirement	+15 vdc (supplied by 304 mainframe)

**300 SERIES EQUIPMENT**  
**SPECIAL PRODUCTS**

## Operating Frequency Chart

S1 Switch Settings 1=ON 0=OFF

FREQUENCY			FREQUENCY			FREQUENCY		
IN MHZ	S1 SETTINGS		IN MHZ	S1 SETTINGS		IN MHZ	S1 SETTINGS	
	#10	#1		#10	#1		#10	#1
88.1	1001000111		94.7	1000100110		101.3	1000000101	
88.3	1001000110		94.9	1000100101		101.5	1000000100	
88.5	1001000101		95.1	1000100100		101.7	1000000011	
88.7	1001000100		95.3	1000100011		101.9	1000000010	
88.9	1001000011		95.5	1000100010		102.1	1000000001	
89.1	1001000010		95.7	1000100001		102.3	1000000000	
89.3	1001000001		95.9	1000100000		102.5	0111111111	
89.5	1001000000		96.1	1000011111		102.7	0111111110	
89.7	1000111111		96.3	1000011110		102.9	0111111101	
89.9	1000111110		96.5	1000011101		103.1	0111111100	
90.1	1000111101		96.7	1000011100		103.3	0111111011	
90.3	1000111100		96.9	1000011011		103.5	0111111010	
90.5	1000111011		97.1	1000011010		103.7	0111111001	
90.7	1000111010		97.3	1000011001		103.9	0111111000	
90.9	1000111001		97.5	1000011000		104.1	0111110111	
91.1	1000111000		97.7	1000010111		104.3	0111110110	
91.3	1000110111		97.9	1000010110		104.5	0111110101	
91.5	1000110110		98.1	1000010101		104.7	0111110100	
91.7	1000110101		98.3	1000000100		104.9	0111110011	
91.9	1000110100		98.5	1000010011		105.1	0111110010	
92.1	1000110011		98.7	1000010010		105.3	0111110001	
92.3	1000110010		98.9	1000010001		105.5	0111110000	
92.5	1000110001		99.1	1000010000		105.7	0111101111	
92.7	1000110000		99.3	1000001111		105.9	0111101110	
92.9	1000101111		99.5	1000001110		106.1	0111101101	
93.1	1000101110		99.7	1000001101		106.3	0111101100	
93.3	1000101101		99.9	1000001100		106.5	0111101011	
93.5	1000101100		100.1	1000001011		106.7	0111101010	
93.7	1000101011		100.3	1000001010		106.9	0111101001	
93.9	1000101010		100.5	1000001001		107.1	0111101000	
94.1	1000101001		100.7	1000001000		107.3	0111100111	
94.3	1000101000		100.9	1000000111		107.5	0111100110	
94.5	1000100111		101.1	1000001000		107.7	0111100101	

300 SERIES EQUIPMENT  
SPECIAL PRODUCTS

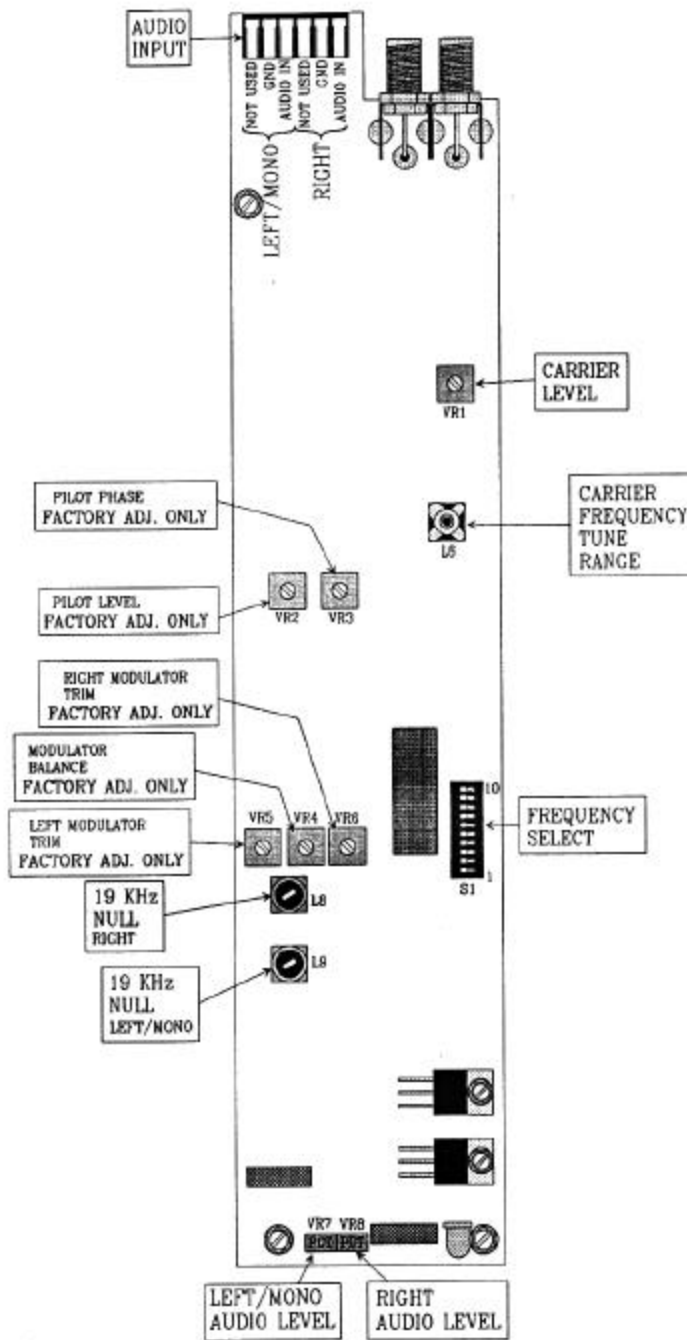


FIGURE 332-1

FIGURE 332-1