

Exhibit IX Parts and Tune up

HO2WUALS13
ALS1300

Tuning Instructions

The ALS1300 uses factory preset bandpass filters. There are no user tuning or level adjustments or field serviceable tuning adjustments. The user sets the bandswitch to the proper band and transmits.

Components

2KWF filter

Count	Label-Value			P/N			Designation
4	1500pf	Chip Capacitor		100E152JW			C1,C2,C3,C4
4	680pf	Chip Capacitor		100E681JW			C5,C6,C7,C8
4	360pf	Chip Capacitor		100E361JW			C9,C10,C11,C12
4	270pf	Chip Capacitor		100E271JW			C13,C14,C15,C16
4	180pf	Chip Capacitor		100E181JW			C17,C18,C19,C20
1	.001uf	Disc 50V					C21
1	10pf	Disc 3kV					C98
6	0.1uf	Disc 50V					C22, C23, C24, C25, C26, C27
1	270pf	Mica CM03					C28
1	0.01uf	Disc 50V					C29
1	Gimmik						C99
2	1N916	Diode					D1, D2
4	HD8P						J1,J2,H1,H2
		Core	Wire type	Wire Size	Wire Lng	Turns	
2	16T/T157-2	T157-2	Enamel	12 AWG	36 inch	16	L1,L2
2	11T/T157-2	T157-2	Enamel	12 AWG	25 inch	11	L3,L4
2	12T/T157-17	T157-17	Enamel	12 AWG	27 inch	12	L5,L6
2	12T/T157-17	T157-17	Bus/Tef	10 AWG/ Tef 8 AWG	20 inch	8	L7,L8
2	6.5 T	Air	Bus	10 AWG	26 inches	6.5	L9,L10
2	1k ohms						R1, R3
1	51 ohms	Metal oxide 2W					R2
1	10k ohms						R4
12	SMIH - 12VDC - SL - C						RLY1, RLY2, RLY3, RLY4, RLY5, RLY6, RLY7, RLY8, RLY9, RLY10, RLY11, RLY12
1	5:1 Turns	2843000202	GrnEnam/ RedEnam w/Tef	G24 AWG/ R 24 AWG/ Tef ?	G 10.5inch/ R 2.5 inch/ Tef 3 inch	7G/1R	T1

AWG

1 MFJ SWR Transformer T2

Location	Screws	Qty	Spacers	Qty
CMB	#6 3/16 inch	12	hx/trd 0.312	6
FL 10	#6 3/16 inch	10	hx/trd 0.375	5
Relay	#6 3/16 inch	8	hx/trd 0.375	4

BS1

Count	Label-Value	Designation
6	1N4001	D1,D2,D3,D4,D5,D6
2	HD8P	J1,J3
1	HD3P	J2
9	RED LED	LED1, LED2, LED3, LED4, LED5, LED6, LED7, LED8, LED9
1	1k ohms 1/2W	R1
1	SP12T APEM	SW-1

CB1

Count	Label-Value	Designation
24	0.1uf Disc 50V	C1,C2, C3, C8, C9, C10, C13, C16, C17, C18, C19, C23, C24, C25, C26, C27, C28, C29, C34, C35, C36, C37, C38, C39
7	0.01uf Disc 50V	C4,C5,C6,C7,C11,C12,C14
6	0.47uf Tant or Elect 25V Radial	C15,C20,C22,C21,C30,C31
2	47uf/50v Elect 25V Radial	C32,C33
11	1N916	D1,D2,D3,D4,D5,D6,D7,D8,D9,D10,D11
2	1A Chemical fuse autoreset 30R090	F1,F2
4	HD8P	J1,J2,J3,J8A
1	HD8P 90	J8B
1	HD10P	J4
1	HD6P	J5
1	HD3P	J7
3	2N3906 PNP	Q1,Q8,Q9
2	2N2955 PNP	Q2,Q5
4	2N3904 NPN	Q3,Q4,Q10,Q11

3	2N3055	NPN	Q6,Q7,Q12
16	1k ohms		R1, R7, R8, R13, R17, R22, R23, R30, R35, R44, R45, R46, R47, R52, R57, R61
11	100 ohms		R2,R3,R4,R5,R10,R11,R28,R53,R54,R55,R56
2	100k ohms		R6,R62
13	10k ohms		R9, R12, R15, R32, R34, R38, R39, R41, R43, R48, R50, R58, R59
11	4.7k ohms		R16,R24,R25,R26,R27,R31,R33,R40,R42,R49,R51
3	10 ohms		R14,R18,R19
2	6.8k ohms		R20,R21
1	27k ohms		R29
2	2.2k		R36, R37
1	Socket 16 Pin		RJ1
1	4042BE	Latch	U3
1	LM7809	Reg 9V	U5
2	LM324	op amp	U1,U2
1	LM358	op amp	U4
8	1k ohm variable	Linear Piher Horizontal PC mount PT10	VR1,VR2,VR3,VR4,VR5,VR6,VR7,VR8
1	25k ohm variable	Linear Piher Horizontal PC mount PT10	VR9
1	1N752A	Zener 5.6V 1/2W	ZD1

All fixed Resistors 1/4 watt

CMB

Count	Label-Value						Designation
1	100 ohms 100W	Noninductive Resistor					R1
		Core x qty	Wire type	Wire Size	Wire Lng	Turns	
1	Transformer	5961002701 X2	Enamel 3 Twisted (1 w/Teflon)	12 AWG (9 AWG)	21 inch x3 (20 inch)	5	T5
1	Transformer	5961002701 X2	Enamel Twisted Pair (1 w/Teflon)	12 AWG (9 AWG)	21 inch x2 (20 inch)	5	T6

MB1

Count	Label-Value			Designation
2	0.01uf	Disc		C8,C9
2	2.2uf	Elect		C3, C4
13	0.1uf	Disc		C1,C2,C5,C6,C7,C10,C11,C12,C13,C14,C15,C16,C17
9	1N916	Diode		D1,D2,D3,D4,D5,D6,D7,D8,D9
1	HD10P			J1
1	HD6P			J2
1	HD4P			J3
1	HD3P			J4

2	2k ohms variable	Vertical Pot CA6H2.5 2K ROHS Compliant Belford Elec. Inc.	R1,R2
2	1m ohm variable	Vertical Pot CA6H2.5 2K ROHS Compliant Belford Elec. Inc.	R15,R16
1	1	Alpha 5J3 B10k ALC 10k pot	R39
2	5.6k ohms	1/4 watt	R3,R4
3	10k ohms	1/4 watt	R5,R9, R28
3	1m ohms	1/4 watt	R6,R8,R31
9	1k ohms	1/4 watt	R22,R25,R27,R29,R32,R36,R37,R40,R41
1	560 ohms	1/4 watt	R26
3	10 ohms	1/4 watt	R7,R12,R19
1	100 ohms	1/4 watt	R21
4	4.7k ohms	1/4 watt	R17,R18,R20,R38
2	68k ohms	1/4 watt	R10,R11
2	47k ohms	1/4 watt	R23,R24
1	6.8k ohms	1/4 watt	R30
2	220k ohms	1/4 watt	R33,R34
1	100k ohms	1/4 watt	R35
1	475 ohms	1/2 watt Metal	R13
1	1k ohms	1/2 watt Metal	R14
2	2N3904	NPN	Q1,Q2
1	LM324		U1
1	LM358		U2
1	Green LED		LED1
2	Red LED		LED2,LED3
1	Yellow LED		LED4
1	6PDT APEM		SW 1

PA module

Count	Label-Value		Designation
8	.1uF		C1,C4,C5,C8,C12, C14,C15,C18,
4	.001uF		C2,C9,C13,C19
2	470pF	Chip Cap	C3,C20
8	.33uF		C6,C7,C16,C17,
1	470pF		C21,C22,C23,C24,
1	330pF		C10
1	.47uF 100V		C11
1	100uF 100v	Polarized	C25
1	LC103J2K or	US Sensor	C26
2	PT103j2	Thermistor	R1,R2

8	18 ohms		R3,R6,R8,R10,R19, R22,R24,R26,
4	1 ohms		R4,R11,R20,R27
4	470 ohms	2W OY Series Ohmite	R5,R12,R21,R28
4	1k ohms		R7,R9,R23,R25
6	22 ohms		R13,R14,R15,R16, R17,R18
6	HD1P		P1,P2,P3,P4,P5,P6
4	MRF150A	PA transistor	Q1,Q2,Q3,Q4
1	Input Transformer		T1
1	Feedback Transformer		T2
2	Output Transformer		T3,T4

PD8

Count	Value		P/N				Designation
4	200 ohms	Caddock Resis	MP930- 200-1%				R1, R3, R4, R6
2	27 ohms	Caddock Resis	MP930- 27-1%				R2, R5
1	100 ohms	Metal oxide 3W					R7
		Core x qty	Wire type	Wire Size	Wire Lng	Turns	
1	Transformer	2843000202 x 3	Enam/ Red Enam	16 AWG	6 inch/ 6 inch	5	T1
1	Transformer	1/2 inch toroid core (from ALS 600 part 406-2601)	Grn Enam/ Red Enam	16 AWG	6 inch/ 6 inch	5	T2

RJ45

Count	Label-Value		Designation
13	0.1uF	Disc 50V	C1,C2,C3,C4,C5,C6,C7,C8,C9,C10,C11,C12,C13
2	1N916	Diode	D1,D2
1	150k	1/4 watt	R1
1	560 ohms	1/2 watt	R2
2	RJ45		J1,J2
1	Socket 16 Pin		J3

RLY

Count	Label-Value	Designation
2	HD8P receptacle	J1,J2
2	12VDC	RLY1,RLY2

SWR

Count	Label- Value		Designation
1	33pF	3kV	C1
1	33pF	1kV	C2
2	150pF	1kV	C3,C4
2	0.01uF	50V	C5,C6
1	3-12pF	500V	C7
2	1N34A	Diode	D1,D2
1	3.3k ohms	1/4 watt	R1
2	1.3k ohms	1/4 watt	R2,R3
1	68 ohms	2W mox	R4
1	1000uH	molded choke	L1
		Current	
1		Transformer	T1