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PARTS LIST

Main Board, Transmitter Board and Mechanical

AWOS 760 TRANSMITTER**MAIN BOARD**

Nomenclature	VPN	Description	Value
C401	251031	Capacitor	M/F .0033uf
C402	251042	Capacitor	M/F .1uf
C403	251060	Capacitor	Elect 470uf 16v
C404	251060	Capacitor	Elect 470up 16v
C405	251042	Capacitor	M/F .1uf
C406	251042	Capacitor	M/F .1uf
C407	251024	Capacitor	C/D 330pf
C408	251067	Capacitor	10 pf
C409	251042	Capacitor	M/F .1uf
C410	251060	Capacitor	Elect 470uf 16v
C411	251060	Capacitor	Elect 470uf 16v
C412	251076	Capacitor	22uf
C413	251024	Capacitor	C/D 330pf
C414	251071	Capacitor	Mica 47pf
C415	251042	Capacitor	M/F .1uf
C416	251024	Capacitor	C/D 330pf
C417	251039	Capacitor	M/F .047pf
C418	251029	Capacitor	C/D .001uf
C419	251029	Capacitor	C/D .001uf
C420	251007	Capacitor	C/D 6.8pf

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C421	251013	Capacitor	C/D 27pf
C422	251011	Capacitor	C/D 18pf
C423	251042	Capacitor	M/F .1uf
C424	251055	Capacitor	Elect 47uf 16v
C425	251045	Capacitor	Tant 1uf 35v
C426	251039	Capacitor	M/F .047uf
C427	251064	Capacitor	Vari 1-4pf
C428	251005	Capacitor	C/D 4.7pf Option
C429	251042	Capacitor	M/F .1uf
C430	251035	Capacitor	M/F .018uf
C431	251010	Capacitor	C/D 8.2pf
C432	251042	Capacitor	M/F .1uf
C433	251076	Capacitor	Elec 22uf 16v
C434	251001	Capacitor	C/D 2.2pf
C435	251076	Capacitor	Elect 22uf 16v
C436	251026	Capacitor	C/D 470pf
C437	251042	Capacitor	M/F .1uf
C438	251042	Capacitor	M/F .1uf
C439	251042	Capacitor	M/F .1uf
C440	251042	Capacitor	M/F .1uf
C441	251076	Capacitor	Elect 22uf 16v
C442	251042	Capacitor	M/F .1uf
C444	251026	Capacitor	C/D 470pf

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C445	251042	Capacitor	M/F .1uf
C446	251076	Capacitor	Elect 22uf 16v
CR401	151006	Diodes, Matched	MV409
CR402	151002	Diode	1N4454
CR403	151007	Diode	1N5240B 10v
CR404		Diode	LED
DS401		Dip Switch	
DS402		Dip Switch	
F401	331000	Picofuse	10 Amp
LA01	351000	Coil	.1uh
LA02	351000	Coil	.1uh
LA03	351018	Coil	.08uh
Q401	101000	Transistor	NPN 2N3563
Q402	101000	Transistor	NPN 2N3563
Q403	101010	Transistor	NPN MPSH10
Q404	Not used	Not used	Not used
Q405	101072	Transistor	PNP 2N5194
Q406	101071	Transistor	NPN 2N6486
Q407	101000	Transistor	NPN MPS3563
R401	201000	Resistor	47 Ohm C/F QW
R402	201029	Resistor	2.2k C/F QW 5%
R403	201002	Resistor	6.8k C/F QW 5%
R404	201001	Resistor	1k C/F QW 5%

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R405	201001	Resistor	1k C/F QW 5%
R406	201018	Resistor	4.7k
R407	201001	Resistor	1k C/F QW 5%
R408	201024	Resistor	1.5k C/F QW 5%
R409	201002	Resistor	6.8k C/F QW 5%
R410	201031	Resistor	220 Ohm C/F QW
R411	201001	Resistor	1k C/F QW 5%
R412	201027	Resistor	560 Ohm C/F
R413	201008	Resistor	3.3k C/F QW 5%
R414	201038	Resistor	39 C/F QW 5%
R415	201021	Resistor	56 Ohm
R416	201031	Resistor	220 Ohm
R417	201061	Resistor	3.9 C/F QW 5%
R418	201030	Resistor	1.6k C/F QW 5%
R419	201025	Resistor	1k Variable
R420	201024	Resistor	1.5k C/F QW 5%
R421	201008	Resistor	3.3k C/F QW 5%
R422	201036	Resistor	8.2k C/F QW 5%
R423	201012	Resistor	2k Variable @ 1w
R424	201001	Resistor	1k C/F QW 5%
R425	201001	Resistor	1k C/F QW 5%
R426	201009	Resistor	100 C/F QW 5%
R427	201009	Resistor	100 C/F QW 5%

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R428	201000	Resistor	47 C/F QW 5%
R429	201031	Resistor	220 C/F QW 5%
R430	201043	Resistor	82k C/F QW 5%
R431	201008	Resistor	3.3k C/F QW5%
R432	201034	Resistor	10 C/F QW 5%
R433	201000	Resistor	47 Ohm C/F QW
R434	201028	Resistor	2.7k C/F QW 5%
R435	201011	Resistor	10k
R436	201011	Resistor	10k
R437	201011	Resistor	10k
R438	201011	Resistor	10k
R439	201011	Resistor	10k
R440	201011	Resistor	10k
R441	201011	Resistor	10k
R442	201011	Resistor	10k
R443	201011	Resistor	10k
R444	201011	Resistor	10k
R445	201011	Resistor	10k
R446	201027	Resistor	560 Ohm C/F
R447	201017	Resistor	4.3k
R448	201049	Resistor	680 Ohm
R449	201042	Resistor	1M C/F QW 5%
R450	201001	Resistor	1k C/F QW 5%

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R451	201001	Resistor	1k C/F QW 5%
R452	201001	Resistor	1k C/F QW 5%
S401	501046	Switch	SPDT
U401	451008	IC	TDA2003
U402	451003	IC	4060
U403	451002	IC	4046
U404	451006	IC	MC12016
U405	451011	IC	74LS163
U406	451011	IC	74LS163
U407	451011	IC	74LS163
U408	451011	IC	74LS163
U409	451000	IC	74LS11
U410	451001	IC	74LS02
U411	451000	IC	74LS11
VR401	171002	Voltage Reg	LM317T
VR402	171002	Voltage Reg	78S05
VR403	171004	Voltage Reg	78L12
VR404	171002	Voltage Reg	78S05
VR405	171001	Voltage Reg	LM317T
XT401	301000	Crystal	3.2 MHz

AWOS 760 TRANSMITTER**TRANSMITTER BOARD**

Nomenclature	VPN	Description	Value
C301	251075	Capacitor Mica	330pf
C302	251078	Capacitor Chip	.1uf
C303	251078	Capacitor Chip	.1uf
C304	251067	Capacitor Mica	10 pf
C305	251070	Capacitor Mica	39pf
C306	251067	Capacitor Mica	10pf
C307	251078	Capacitor Chip	.1uf
C308	251068	Capacitor Mica	33pf
C309	251078	Capacitor Mica	.1uf
C310	251079	Capacitor NPO	100pf
C311	251078	Capacitor Chip	.1uf
C312	251083	Capacitor Chip	56pf
C313	251079	Capacitor NPO	100pf
C314	251078	Capacitor Chip	.1uf
C315	251073	Capacitor Mica	120pf
C316	251080	Capacitor NPO	150pf
C317	251071	Capacitor Mica	47pf
C318	251066	Capacitor Mica	3pf
C319	251069	Capacitor Mica	36pf
C320	251067	Capacitor Mica	10pf
C321	251074	Capacitor Mica	18pf

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C322	251077	Capacitor Feed Thr	1000pf
C323	251077	Capacitor Feed Thr	1000pf
CR301A	151001	Diode, Pin	3081-920
CR301B	151001	Diode, Pin	3081-920
L301	351019	Coil	10.5T
L302	351020	Coil	4.5T
L303	351020	Coil	4.5T
L304	Non used	Not used	Not used
L305	351021	Coil	12.5T
L306	351004	Coil	1uh
L307	351021	Coil	12.5T
L308	351020	Coil	4.5T
L309	351004	Coil	1uh
L310	351020	Coil	4.5T
Q301	101000	Transistor	NPN 2N3563
Q302	101060	Transistor	NPN 2N3563
Q303	101040	Transistor	RF MRF260
Q304	101050	Transistor	RF MRF1946A
R301	201009	Resistor	100 C/F QW 5%
R302	201001	Resistor	1k C/F QW 5%
R303	201011	Resistor	10K C/F QW5%
R304	201001	Resistor	1k C/F QW 5%
R305	201009	Resistor	100 C/F QW 5%

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R306	201001	Resistor	1k C/F QW 5%
R307	201013	Resistor	27 C/F QW 5%
R308	201006	Resistor	470 C/F QW 5%
R309	201014	Resistor	22 C/F QW 5%
R310	201009	Resistor	100 C/F QW 5%
R311	201009	Resistor	100 C/F QW 5%
R312	201049	Resistor	680 C/F QW 5%
T301	361004	Transformer	RF 4:1
T302	361004	Transformer	RF 4:1

AWOS 760 TRANSMITTER**MECHANICAL PARTS LIST**

VPN	Description	Quantity
501006	Nut, Hex 8-32	1
501026	Screw, 6-32 x 1/4	44
501032	Fibernut, 4-40	1
501034	Screw, Truss 1/4"	18
501051	Washer, shoulder	5
501057	Fibernut, 6-32	6
501072	Spacer #4 1/4 CL	9
501119	Screw, 1/2" Pan 6-32	15
501134	Insulator, Aluminum Oxide	5
501138	Heatsink, AWOS 760	1
501142	Cover, Top AWOS 760	1
501143	Fence, AWOS 760	1
501145	Case, Xmtr, AWOS	1
501149	PCB, AWOS	1
501153	Kit, Hdwr, AWOS	1
501154	Cover, Xmtr, AWOS	1
501155	Bracket, Mount, AWOS	1
550022	Connector, BNC Male	1
550050	BNC, Chassis Mount	2
550066	Connector, F/M AWOS	1
550067	Connector, Male AWOS	1
701031	Label, AWOS S/N	1
803000	AWOS	1

VAL AVIONICS LIMITED

Communications Excellence

AWOS 760

General Information

The AWOS 760 is a 760-channel communication transmitter designed to provide one way communication within the frequency range of 118.000 MHz to 136.975 MHz in 25 kHz increments.

The AWOS 760-communication transmitter was designed to conform to FAA Advisory Circular 150/5220-16B for use as a ground based VHF transmitter for Automated Weather Observing Systems (AWOS).

The AWOS 760 communication transmitter has Federal Communications Commission (FCC) type acceptance filed under FCC ID: EZN5PRCOM760

The AWOS 760 consists of two major sections: Main Board and Transmitter Board.

Specifications

Physical Dimensions:	Width: 6.00 inches (15.24 cm)
	Height: 1.9 inches (4.83 cm)
	Length: 11.0 inches (27.94 cm)
Weight	5.0 Lbs. (2.27 kg)
Voltage:	12.0 Vdc
Current:	Standby 200 mA; Transmit 1.5 A
Frequency Range:	118.000 to 136.975 MHz
Channel Spacing	25 kHz
Frequency Stability:	.001%
Spurious Emissions	Greater Than 80 dB down from carrier
Modulation	Adjustable (70 to 90% Typical)
Temperature Range	-30 to +60 Degrees Celsius
Transmit Power:	2.5 watts
Emission	6K00A3E
Duty Cycle	100%
Design	All Solid State. Printed Circuit Board & Point to Point Wiring.
Mounting	Rigid Mounting, No Shock Mounting Required.
FCC ID	EZN5PRAWOS760
Unit Part Number	803000

Operation

CONTROLS:

ON/OFF SWITCH turns on and off the main power to the unit.

INDICATOR LIGHT Illuminates when the unit is powered up.

DB-9 CONNECTOR connections for power, ground, mic audio, and transmit key are made at this connector..

ANTENNA JACK connects to a broad band VHF 50 Ohm loaded antenna

FREQUENCY CALIBRATION capacitor C427 can be adjusted to center the output frequency.

MODULATION ADJUST potentiometer R423 can be adjusted to vary the modulation level.

POWER ADJUST potentiometer R419 can be adjusted to vary the output power.

DIPSWITCHES M0-M4 selects the whole MHz frequency (see table, Chapter 5)

DIPSWITCHES K2-K5 selects the tenth MHz frequency (see table, Chapter 5)

DIPSWITCHES K0-K1 selects the 25 kHz spacing (see table, Chapter 5)

Installation

This section contains suggestions and factors to consider before installing the AWOS 760 transmitter. Close adherence to these suggestions will assure more satisfactory performance from the equipment.

Unpack the equipment and inspect each item for evidence of damage incurred during shipment. If a damage claim must be filed, save the shipping container and all packing materials to substantiate your claim. The claim should be filed with the Transportation Company as soon as possible. The shipping container and packing material should be saved in any case in the event that storage or reshipment of the equipment is necessary.

The AWOS 760 installation will conform to standards designated by the customer, installing agency, and existing conditions as to the unit location and type of installation. The installing agency will supply and fabricate all external cables for interface to their system as appropriate. VAL Avionics, Ltd will supply the connectors required.

AWOS 760 TRANSMITTER

The most important contribution to improved reliability of this equipment is to limit the maximum operating temperature. While modern designs consume less total energy, the heat dissipated per unit volume (Watts/cubic inch) remains much the same due to contemporary high density packaging techniques. While each individual unit may or may not require forced air cooling, the combined heat generated by several various units within a typical AWOS cabinet assembly can significantly degrade the reliability of the AWOS 760 transmitter if provisions for adequate cooling are not incorporated in the particular installation.

NOTE: The AWOS 760 vhf transmitter must be mounted in the AWOS system cabinet in a lengthwise vertical position, cooling fins facing out, parallel into the convective airflow provided by an air intake vent at the bottom of the cabinet and air exhaust vent on the upper side designed into the AWOS cabinet.

FAILURE TO PROVIDE THIS TYPE OF INSTALLATION ENVIRONMENT WILL VOID MANUFACTURERS WARRANTY!

Before the AWOS 760 transmitter can be operated, the customer must obtain a Radio Station License from the Federal Communications Commission (FCC). This license can be obtained by filing the appropriate form obtained from the local FCC Field Office.

NOTE: THE VHF TRANSMITTER IN THE AWOS 760 IS GUARANTEED TO MEET FEDERAL COMMUNICATIONS COMMISSION ACCEPTANCE OVER THE OPERATING TEMPERATURE RANGE ONLY WHEN A VAL AVIONICS LIMITED CRYSTAL IS USED IN THE STABILIZED MASTER OSCILLATOR. USE OF OTHER THAN A VAL AVIONICS LIMITED CRYSTAL IS CONSIDERED AN UNAUTHORIZED MODIFICATION AND MAY VOID THE WARRANTY.

AWOS 760 TRANSMITTER

The pin assignment and function for P401/J401 are as follows:

PIN TERMINAL	FUNCTION
1	12.0 VDC UNIT POWER INPUT
2	TRANSMITTER KEY
3	NO CONNECTION (FOR FUTURE USE)
4	NO CONNECTION (FOR FUTURE USE)
5	TRANSMITTER AUDIO INPUT
6	NO CONNECTION (FOR FUTURE USE)
7	NO CONNECTION (FOR FUTURE USE)
8	NO CONNECTION (FOR FUTURE USE)
9	UNIT GROUND

AWOS 760 TRANSMITTER