Operational Function Switch

Owners of the Galaxy V mk 2 will have noted a change in the operational function switch. This change provides easier functional operation for the CW operator. The center position of the function switch is now the CAL position. This position was the VOX function on the Galaxy V. Operational habit prompts us to remind the owner of the Galaxy V mk 2, that modulation is possible with the function switch in the CAL position. However, CAUTION must be exercised as this operation will result in distortion in the output signal of the transceiver.

Remote VFO (RV-1) Modification

To insure proper operation of Remote VFO (RV-1) with serial number prior to 6110R1081, a tube type VFO, with the new transistor VFO of the Galaxy V mk 2, the following simple modification is recommended.

(Refer to figure 1 and 2)

1. Remove VFO from cabinet.
2. Remove jumper wire between terminals 2 and 10 of switch wafer section C/D.
3. Remove green wire from terminal 10 and connect to terminal 2 and solder.
4. Remove dark brown wire of power cable from terminal 3 of (TS-1) and connect to terminal 1 of (TS-1).
5. Add a short piece of insulated hook-up wire, from terminal 1 of (TS-1) to terminal 10 of switch wafer C/D and solder both connections.
6. Replace VFO in cabinet.

Re-calibration or other changes are not required.

Unmodified

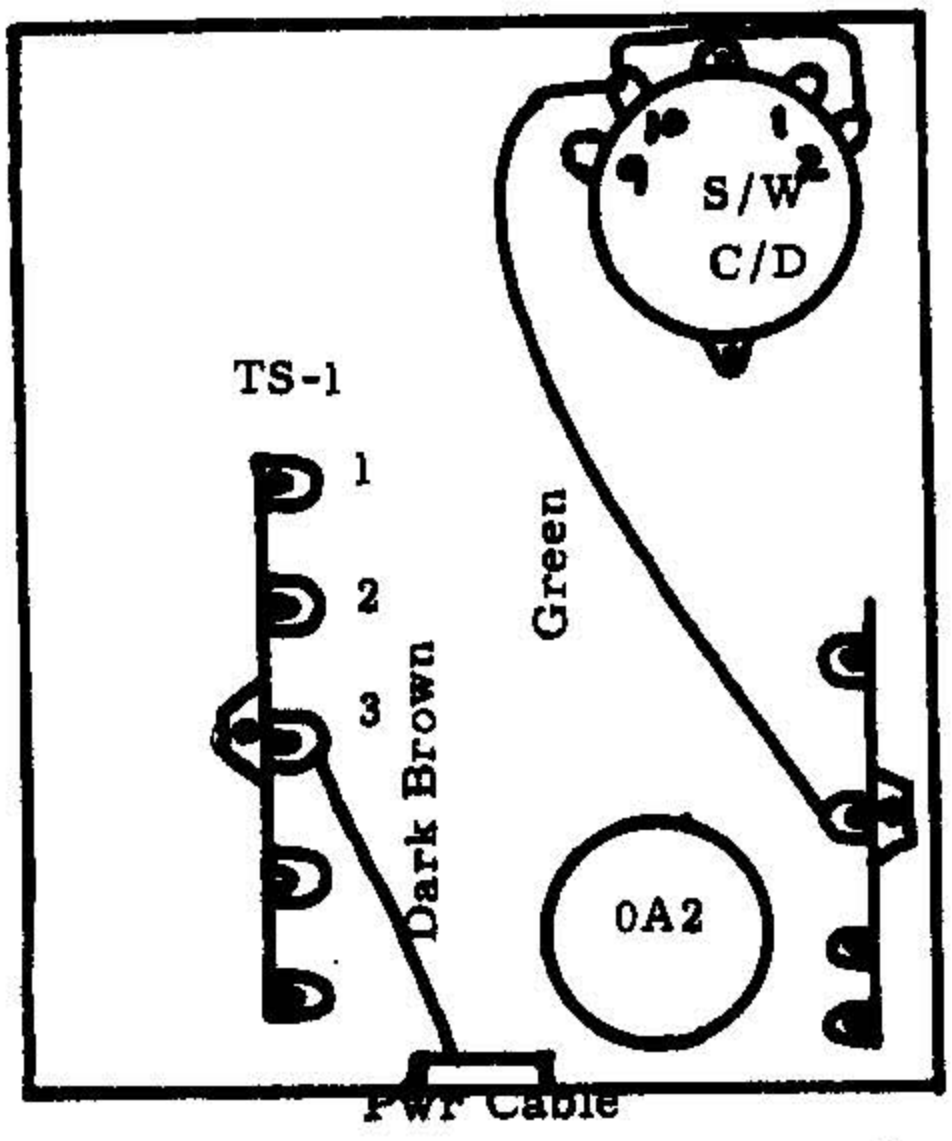


Fig. 1

Modified

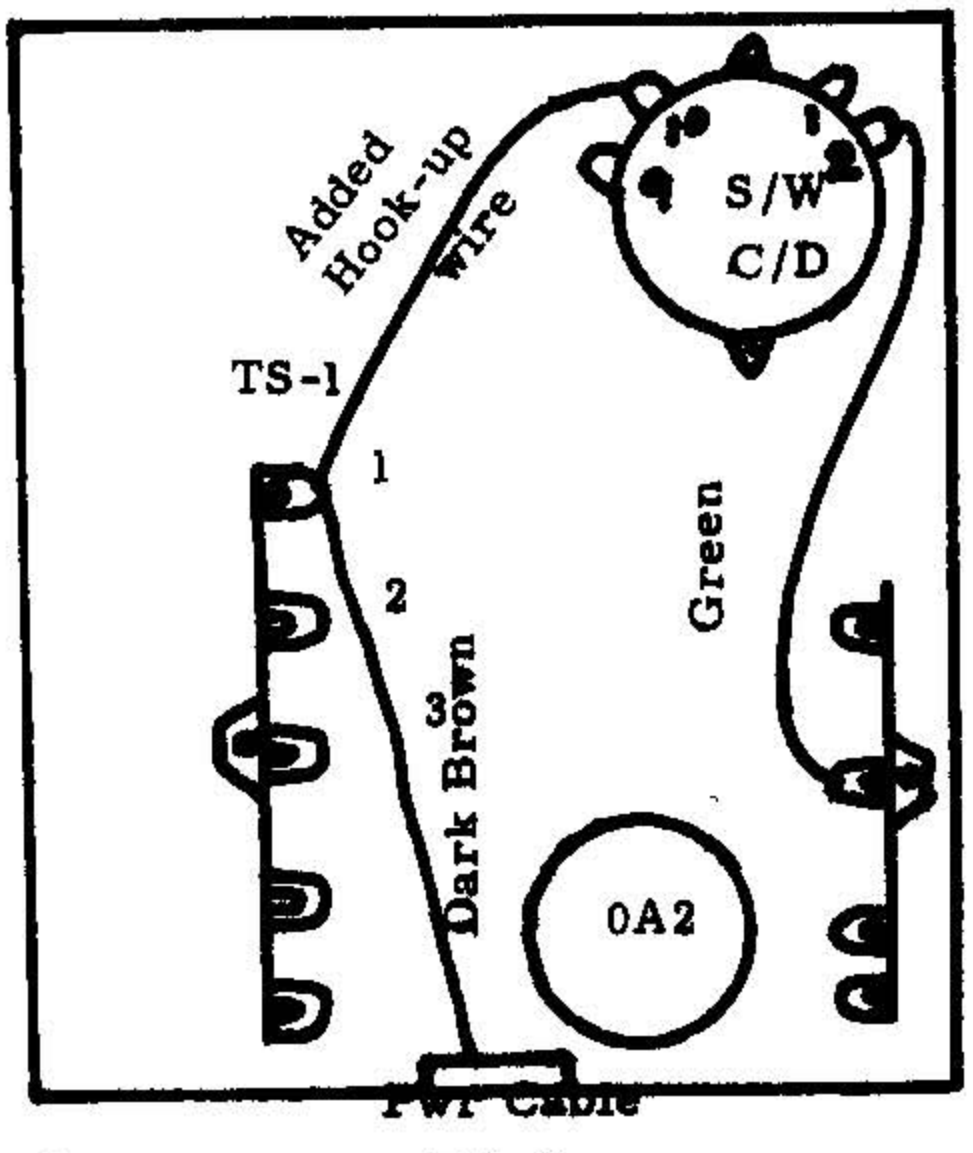


Fig. 2

It is assumed the purchaser has the unit removed from the carton the time this manual has been read. NOTE! Some tubes and parts may packed internally and other precautions will be necessary before attempting to apply power. Take notice of any notes or tags relating to parts packaging.

DAMAGE: This equipment has been carefully packed for safe val IF PROPERLY HANDLED EN ROUTE.

(a) OBVIOUS DAMAGE

If the carton showed signs of rough handling, you should have made such notation on the delivering carrier's receipt. If inspection shows obvious damage such as loose parts, broken parts, etc., the delivering carrier must be contacted immediately and a joint inspection made with this carrier's agent. The joint inspection is NOT a claim but an acknowledgement that the equipment was damaged. The form does not assign responsibility for the damage, but prepares the foundation on which to file a claim. The carrier will then acknowledge or decline the claim at their main office and a local agent may not decline to enter a claim. If the shipment was parcel post, contact your local postmaster for the necessary forms and he will help you enter the claim.

b) HIDDEN DAMAGE

In many cases the carton may not be damaged but the equipment may suffer internal damage not obvious on delivery of the shipment. The procedure for filing the claim would be the same as above.

Remember, the responsibility for safe delivery rests with the carrier. The responsibility in obtaining reimbursement for damage rests with YOU. Prompt action on your part will speed adjustments. Our warranty in no way covers malfunction or damage which is a result of improper handling by a carrier. Under no circumstances should you return merchandise to your dealer before instigating the necessary forms. To do so can jeopardize your investment and the costs of necessary repairs may be a burden you will have to assume. After joint inspection forms have been completed, contact your dealer for assistance.

SECTION II

2-1---The REMOTE VFO is designed to be used with the GALAXY III, the V, and we anticipate retaining it's compatibility with future products we may introduce later. Installation is simple and consists of connecting the VFO main power and control cable to socket J1 on the rear panel of the transceiver (after the factory installed jumper plug is removed from J1). Also, the small coax cable from the REMOTE VFO is routed through the small hole in the rear panel of the transceiver and plugs into the jack on the rear of the internal transceiver VFO assembly. See Page 8 of the transceiver for location in the drawing. On the rear of the unit there is a small phone jack. If you desire to use the "PHONE" jack on the front panel of the REMOTE VFO, you should plug your speaker into this rather than on the transceiver. The speaker will be silenced when a headphone plug is inserted.

SECTION III

3-1 On the panel of the REMOTE VFO there is a function switch with four positions. The positions are: STDBY (standby), REC. (receive), TRANS-REC (transceive) and TRANS(transmit). These positions indicate how the REMOTE VFO will function when the switch is in one of these positions. For example: When in STDBY on the REMOTE VFO the VFO dial on the GALAXY selects the desired frequency on both transmitting and receiving. When the REMOTE VFO switch is on REC. its dial will control the received signals and the GALAXY VFO dial will still control the transmitting frequency. When on TRANS-REC, the REMOTE VFO dial will select the frequency on both transmitting and receiving. When on TRANS. the REMOTE VFO dial control transmitted frequency and the GALAXY dial the received frequency. When in STDBY the filament circuit of the REMOTE VFO remains on and ready to operate.

As the above indicates, this arrangement is extremely flexible. It permits you to listen in the DX band and still transmit in the assigned USA band, or vice versa if you are not a USA station. Also, it permits quick switching between two QSO's to monitor, to transmit, or to transceive. It is also handy to use the REMOTE VFO dial on REC position to check nearby frequencies for a clear spot to QSY.

For quick and positive identification as to how the REMOTE VFO is switched at a given time, we have provided two illuminated colored indicators. One is marked T and the other R. On REC the R indicator will light. On TRANS the T indicator will light. On TRANS-REC both T & R will light.

A CAL ADJ knob is provided for slight corrections of dial frequency, the same as on the GALAXY.

Since the REMOTE VFO is powered from the GALAXY, it is conceivable to use it mobile. It may not be mounted further away from the transceiver than the cables supplied will reach, nor may the cables be extended. However, in some cases this may provide a desirable arrangement where the transceiver might have to be mounted to the far right of the driver so as to make it inconvenient to reach the dial. In this case, the REMOTE VFO could be placed nearer the driver and convenient tuning accomplished across a small segment of the band for which the GALAXY is tuned. -- This would be especially convenient for car with a console divider between the front seats.

4-1 External VFO Alignment

Set Galaxy controls as follows: (Remote VFO attached)

(a) RF full clockwise
(b) Function switch to Cal.
Note: If there is no plug-in crystal calibrator in unit any other accurate frequency source at 3.500 and 4.000 mc. may be used.
(c) Load control - 10 o'clock
(d) Plate control - 2 o'clock
(e) Bandswitch - 3.5 to 4.0 mc.
(f) Excitor control - 10 o'clock
(g) Sideband Switch - SB-1
(h) Cal ADJ - Midrange

Set REMOTE VFO controls as follows:

(a) Function Switch to REC.
(b) Main tuning Dial - 4.000 mc.

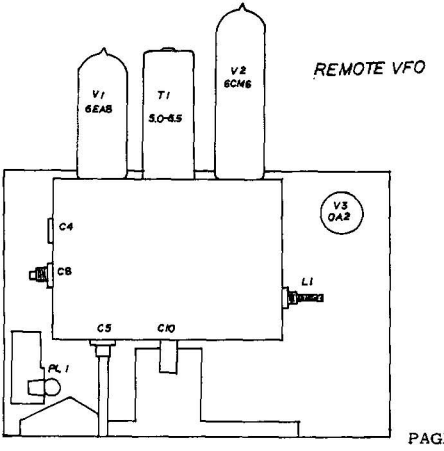
Adjust main tuning dial until calibrator is heard. (check to see if this is the 4.0 mc. beat note with signal generator)

Adjust L-1 and main tuning dial until the calibrator zero beat occurs at 4.0 mc.

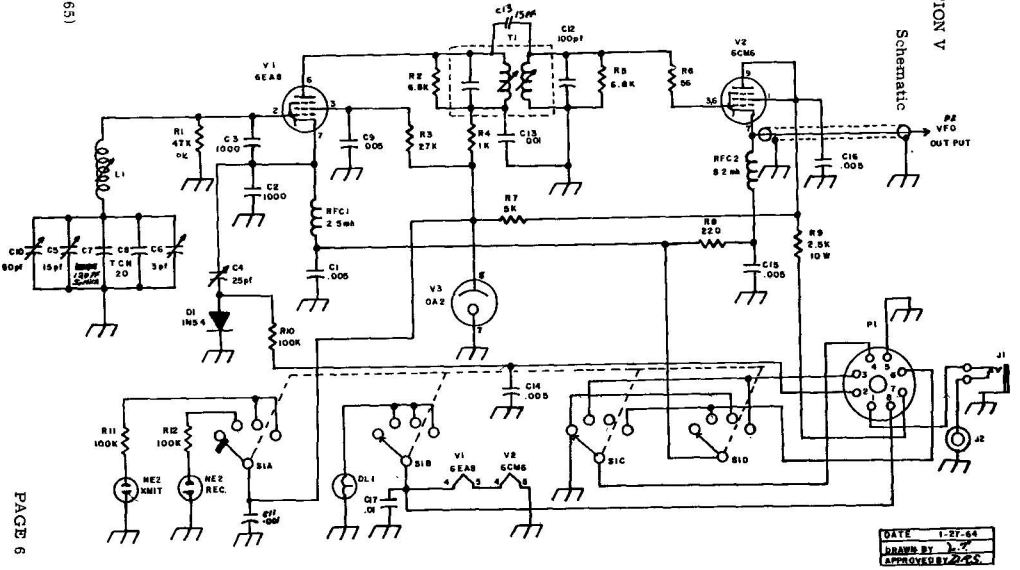
Adjust main tuning dial to 3.5 mc. Rock main tuning dial until calibrator is heard.

Adjust C-8 and main tuning dial until the calibrator zero beat occurs at 3.5 mc.

Repeat steps 5 through 8 until calibrator zero occurs at 3.500 and 4.000 mc.



REMOTE VFO


V1 6EA8
V2 6CM6
V3 0A2
T1
L1
RFC1 2.5mh
RFC2 82 mh
R1 47K pot
R2 6.8K
R3 27K
R4 1K
R5 6.8K
R6 56
R7 5K
R8 220
R9 2.5K 10W
R10 100K
R11 100K
R12 100K
C1 .005
C2 1000
C3 1000
C4 25pf
C5 15pf
C6 3pf
C7 TCN 20
C8
C9 .005
C10 60pf
C11 15pf
C12 100pf
C13 .001
C14 .005
C15 .005
C16 .005
C17 .01
D1 IN54
DL1
NE2 XMIT
NE2 REC.
S1A
S1B
S1C
S1D
P1
J1
J2
P2 VFO OUT PUT
DATE 1-27-64
DRAWN BY
APPROVED BY

VOLTAGE CHART

External VFO

Function Switch Standby

Pin	1	2	3	4	5	6	7	8	9
V1	NC	0	145	12AC	6.0AC	145	76	NC	NC
V2	285/280	NC	NC	0	6.0AC	0	78	NC	265/280
V3	NC	NC	NC	NC	150	NC	0		

Function Switch Receive

Pin	1	2	3	4	5	6	7	8	9
V1	NC	-2.8/0	110/.45	12AC	6.0AC	138/140	.13/165	NC	NC
V2	180/260	0	0	0	6.0AC	0	78/76	0	180/260
V3	NC	NC	NC	0	150	NC	0		

Function Switch Transceive

Pin	1	2	3	4	5	6	7	8	9
V1	NC	-2.8/0	110	12AC	6.0AC	140	0	NC	NC
V2	200	NC	NC	0	6.0AC	0	9	NC	200
V3	NC	NC	NC	NC	150	NC	0		

Function Switch Transmit

Pin	1	2	3	4	5	8	7	8	9
V1	NC	0/-9	145/110	12AC	6.0AC	145/140	76/.2	NC	NC
V2	285/200	NC	NC	0	6.0AC	0	80/9	NC	285/200
V3	NC	NC	NC	NC	150	NC	0		

Note: All measurements are made from ground to point being measure. All cables are connected to GALAXY III Function switch positioned as stated on voltage chart. Where two voltages are shown, the top one is receive voltage, and the bottom is the transmit voltage. All measurements were made with a Hewlett Packard 410B VTVM.

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5-3

RESISTANCE CHART

External VFO

Pin	1	2	3	4	5	6	7	8	9
V1	*	50K	*	4.8	2.4	*	*	*	*
V2	*	*	50K	0	2	55	*	*	*
V3	*	0	*	0	*	*	0		

Note: Resistance should remain the same with function switch in any position.

Resistance P1

Function Switch Standby

Pin	1	2	3	4	5	6	7	8
P1	*	1 meg	*	0	0	*	*	6

Function Switch Receive

Pin	1	2	3	4	5	6	7	8
P1	*	1 meg	*	*	0	*	*	4.3

Function Switch Transceive

Pin	1	2	3	4	5	6	7	8
P1	*	1 meg	*	*	0	*	*	4.3

Function Switch Transmit

Pin	1	2	3	4	5	6	7	8
P1	*	1 meg	*	*	0	*	*	4.3

Note: All measurements are made from ground to point being measured. All cables disconnected from GALAXY. Function switch positioned as stated on resistance chart. All measurements were made with a Hewlett Packard 410B VTVM.

* Indicates no continuity (open circuit)

PARTS LIST

External VFO

Capacitors

C No.	Description	Part No	Price
C1, C9, C14			
C15, C16	.005 600v ceramic	20-3	$0.15
C2, C3	1000pf 500v Silver mica	22-19	0.33
C4	5-25 pf variable	26-6	0.81
C5	15 pf variable	25-14	2.40
C6	3 pf variable	25-19	1.50
C7	120 pf. silver mica	22-12	0.30
C8	20 pf TCN	20-41	0.35
C10	50 pf variable	25-17	1.70
C11, C13	.001 1000v ceramic	20-24	0.15
C17	.01 600v ceramic	20-5	0.24
C12	100 pf @1000v	20-23	0.15
C13	15 pf.	22-38	0.15

Diodes

D No.			
D1	1N54A	112-IN54A	0.95

Coils

L1	5.0-5.5 Mc VFO Coil (special)	42-12	5.25

Resistors

R1	47K 1/2 watt	10-13	0.12
R2, R5	6.6K 1/2 watt	10-15	0.12
R3	27K 1/2 watt	10-14	0.12
R4	1K 1/2 watt	10-42	0.12
R6	56 ohm 1/2 watt	10-74	0.12
R7	5K 10 watt	11-5D	0.36
R8	220 ohm 1/2 watt	10-58	0.12
R9	2.5K 10 watt	11-10D	0.36
R10, R11, R12	100K 1/2 watt	10-32	0.12

Chokes

RFC No.			
RFC-1	2.5 mh	30-9	0.42
RFC-2	8.2 mh	30-5	0.35

6-1 PARTS LIST

T-1	5.0-5.1 mHz output transformer	76-06	$ 96
V1	6EA8 tube	110-6EA8	3.00
V2	6CM6 tube	110-6CM6	3.35
V3	OA2 regulator tube	110-OA2	1.85
Misc.			
-	Cabinet	140-14	7.45
-	Front panel	141-13	6.03
-	Jackson drive 13/32 shaft	172-11A	1.20
-	Jackson drive 9/16 shaft	172-11B	1.20
-	26 tooth gear	151-02	1.35
-	52 tooth gear	151-03	1.80
-	Plastic window with hairline	172-30	2.50
-	Knob, large, fixed	130-14-1A	1.00
-	Slider, reference for above	130-14-8	.60
-	Knob, large, calibrated	130-14-2A	1.00
-	Knob, slow tuning	130-14-3	.85
-	Knob, function switch	130-14-7	.77
-	Front foot	133-31/32	.35
-	Rear foot	133-31	.20
-	Function switch	53-16	2.05
-	VFO dial, calibrated, 2 color	172-17	3.30
-	T transmit light	113-B9NE2ER	.90
-	R receive light	113-B9NE2EA	.90
-	VFO window ring	134-04	.35
DL1	12V frosted bulb	113-24	.24
P1	8 pin plug	104-01	.51
P2	Phone plug	105-01	.10
J1	Phone jack, closed ckt.	102-02	.37
J2	Phone jack	100-04	.10

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