RigPix Larry International 3 AM/FM/SSB/CW Base Transceiver with Negative Channels Instruction Manual

Contents

LARRY INTERNATIONAL 3

AM/FM/SSB/CW BASE TRANSCEIVER WITH NEGATIVE CHANNELS
Instruction Manual

You are now the proud owner of the **LARRY INTERNATIONAL 3.**
Indeed, the imposing forefront of the **LARRY INTERNATIONAL 3** hides a real sample of advanced technology. The **227** channels in **AM, FM, SSB and CW** are only the first example. 80 new negative channels have been added to the 120 conventional channels. The new negative channel system provides a logic and univoque readout of all channels.

Revolutionary also is the technology of the receiver, which goes on working normally, even under strong interferences of nearby stations. The sensitivity of this set and the absence of background noise are simply fantastic.
The **LARRY INTERNATIONAL 3** is also offering better performances thanks to the adjustable power output: **0.5W** for “quiet” modulation, **4W** for optimal modulation quality, and a maximum output of **6W**. The double meter has a triple function: indication of signal strength at reception, power output at transmission, and **SWR** measurement. Besides the switchable **ANL**/**NB** filter, the double antenna connection possibility, and some other new features have been incorporated. First of all the **10 kHz** shift bringing 27 alpha-channels into your reach. Inter-channel operation is also possible by mearns of the **TUNE** knob.
Innovative is the **speech compressor**, producing better signal audibility and voice clarity, and thus improving signal propagation. A **20 dB** attenuator has been added to the **RF GAIN**, allowing an even better adjustment of incoming signals. When using the **10 kHz** shift and the attenuator, **LEDs** are blinking. Another important innovation is the **AWI (automatic warning indicator)** lamp, warning you at incorrect antenna connection, short circuit, or band **SWR-**measurement of your equipment.
With the impressioning **LARRY INTERNATIONAL 3,** the art of communication is taking a step forward. It offers the possibility to expand your horizon, and is the real passport to the wonderful world of communication.

Installation

Connection:

The transceiver is supplied with AC power cord. Proceed as follows to complete all necessary connections to the transceiver:
1 Your transceiver has two standard antenna connectors of type SO-239 located on the rear panel, for easy connection to standard PL-259 coax plugs. Use only enough cable to suit your needs. This will insure a proper impedance match and maximum power transfer from the transmitter to the antenna. Use coax cable with high efficiency and quality such as type RG-8/u or RG213/u.
2 AC Power Operation: Use 120 volts AC power for base station operation.
Plug AC power cord into a working 120 volts household outlet.
3 DC Power Operation: Use 12 volts DC power for mobile station operation.
Plug in DC power cord (optional) into the jack on the rear side of your transceiver.
Red cable on +
Black cable on –

Noise Interference:

There are several kinds of noise interference you may encounter in base station operation. Some of these noise sources are; fluorescent buzz, nearby commercial broadcast, electrical appliance, lawnmower, electrical stroms, etc. Commercial products are available to reduce interference from these sources. Consult your dealer or CB/amateur radio supply shops.

Remote Speaker:

The external speaker jack (EXT.SP) on the rear panel is used for remote receiver monitoring. The external speaker should have 8 ohm impedance and be able to handle at least 3 watt. When the external speaker is plugged in, the internal speaker is disconnected.

Control Function

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(1) POWER ON-OFF Switch

Place in POWER ON (lever up) position to apply power to the unit.

(2) NB OFF-ON Switch

This switch activates the noise blanker circuit when placed in NB (lever down) position. The noise blanker is very effective for repetitive impulse noise such as ignition interference.

(3) ANL OFF-ON Switch

When this switch is placed in the ANL (lever down) position, the automatic noise limiter in the audio is activated. The ANL may be used when noises generated from such sources as atmospheric discharge, electronic machinery etc. are present.

(4) ANT A-ANT B Selector

For switching between two types of antennas or dummy load that may be connected to the unit. You may connect, on the rear panel, a ground plane antenna (non-directional) to the antenna A receptacle and a beam type antenna (highly directional), for long range communications, to the antenna B receptacle.

(5) SWR-CAL Switch

This switch serves for SWR check of your antenna:

CAL (lever down): Used to calibrate the SWR meter before measuring your antenna's SWR ratio.

SWR (lever up): Used to directly read the SWR of the antenna connected to the unit. See SWR Check, page 14.

(6) TONE HI-LO Switch

Changes the receiving sound quality in two ways.

HI: emphasizes high tones in audio.

LO: emphasizes low tones in audio.

(7) VOLUME Control

Permits you to adjust the listening level when receiving.

(8) SQUELCH Control

This control is used to cut off or to eliminate receiver background noise in the absence of an incoming signal. For maximum receiver sensitivity it is desired that the control is adjusted only to the point where the receiver background noise or ambient background noise is eliminated. Turn fully counterclockwise then slowly clock-wise until the receiver noise just disappears. Any signal to be received must now be slightly stronger than the average received noise. Further clockwise rotation will increase the threshold level which a signal must overcome in order to be heard. Only strong local signals will be heard at a maximum clockwise setting.

(9) CALIBRATE Control

This control is used for calibrating the SWR meter for accurate SWR measuring in conjunction with the SWR-CAL Switch 5.

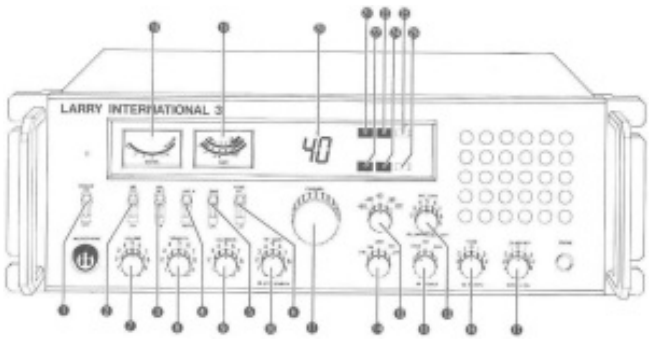
(10) RF GAIN Control/ATT 20 dB RX Switch

This control is used primarily to optimize reception sensitivity in strong signal areas. Under normal operating conditions the control should be turned fully clockwise. When strong overload or distorted signals are received rotate this control counterclockwise to reduce again.

Note: The squelch control 8 may require readjustment with reduced RF Gain Control.

ATT 20 dB RX:

When pulling the button the incoming signal is decreased by 20 dB. This will be used to avoid bleed over from transmitters, which are near to your receiver.



(11) CHANNEL Selector

This control selects any one of the 227 Channels desired. The selected channel is digitally displayed in the window directly above the control.

(12) -80/-40/40/80/120 Switch

Permits you to make the choice of the exact channel, on one of the five indicated bands.

(13) MIC GAIN Control/COMPRESSOR OFF Switch

A preamplifier circuit is built into this unit to increase microphone gain. Experiment with this control for the setting

that will best suit your own personal use.
Push the control to activate the compressor for a deeper, more efficient voice modulation.

(14) FM/AM/USB/LSB/CW Selector

This control selects the mode of operation in either FM, standard AM, uppersideband or lowersideband, and CW (morse). Transmission in a mode can only be communicated to stations operating in the same mode.

(15) RF POWER (MAX/4W/0.5W) Switch

Permits you to adjust the R F output when AM/FM transmitting max. 4W or 0.5W. When transmitting in SSB the output will be Max. – 10W – 4W. Peak envelope power.

(16) TUNE Control/±10 kHz Switch

For tuning + or — 5 kHz the operating frequency. This allows you to use the inter-channel spaces, very useful in SSB with more contort than a VFO.
Pulling the knob provides + or — 10 kHz shift (depending on + or — channels) and permits the use of some extra channels (Alpha Channels).

(17) CLARIFIER Control/ON

Allows to clarify exactly the reception of an SSB station. The control is switched on by pulling the knob. The clarifier only works in pulled position. In the pushed position the clarifier does not operate and the frequency of the receiver is the same as the transmitter frequency.

(18) SIGNAL Strength Meter

This meter provides a relative indication of the signal strength of a received signal in S units during reception. Note that in the SSB mode the indicator will be moving. This due to the fact that SSB transmissions do not contain a continuous RF carrier as is found in AM or FM.

(19) RF/SWR Meter

Used for two purposes, – to indicate relative transmitter power or – to indicate the antenna SWR (standing wave ratio).

(20) Channel Display

This is a LED (Light Emitting Diode) digital readout which indicates the channels selected by the Channel Selector **(11)**.

(21) HI Indicator

This indicator will light up when you are working on channels 81 to 120.

(22) NEG Indicator

This indicator will light up when you are using the negative channels.

(23) ATT Indicator

This indicator lights up when the 20 dB attenuator is used (control 10 pulled).

(24) ±10 kHz Indicator

This indicator lights up when the ±10 kHz control has been switched on by pulling out the tune knob 16.

(25) AWI Indicator

Antenna warning Indicator: this indicator lights up when there is a malfunction in the antenna circuit (bad connection, bad cable etc.).

(26) MOD Indicator

Lights up during your transmission with intensity varying according to the strength of your voice modulation.

Rear Panel

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(1) 120V AC Power cable.

(2) Fuse 250V 2AT

(3) DC 13.8V Jack

This jack is for the 12V DC power cable (optional). Note that the plug can only be inserted in one position.

Attention: Red cable to +, Black cable to –
Maximum 13.8V DC

(4) SEL CALL Jack

Used to connect the optional selective call unit.

(5) EXT. SP Jack

For 8 Ohm external speaker connection. When the plug is inserted to this jack, the internal speaker is silenced.

(6) CW Key Input

Only activated when mode switch is in CW position. A side tone is generated during transmission.

(7) ANT A/ANT B Connectors

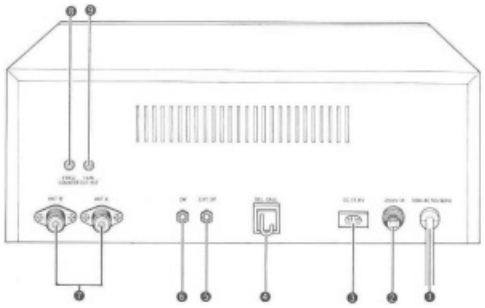
Used to connect antennas to the unit with 50 Ohm coaxial plug, type PL-259.

(8) FREQ. COUNTER Jack

For the connection of a frequency counter by means of an RCA phono jack.

(9) TAPE OUTPUT

Enables you to record messages in cooperation with the selective call system even during your absence.

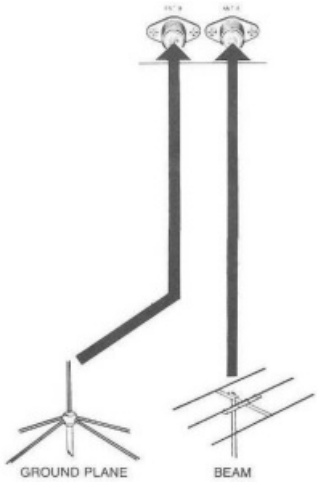


Antenna System

A typical type antenna must be used. It must be properly installed and tuned before attempting to use the transmitter, otherwise permanent damage to the unit may occur. The antenna you choose and its installation will have a significant effect on the performance of your unit. Whichever antenna you choose, be sure to follow the manufacturer's recommendations for installation. The antenna cable must be terminated in a standard PL259 (preferably in teflon) plug to match with the SO239 connector on the rear panel.

Caution: Proper antenna tuning is necessary to obtain optimum performance from this unit which is designed to operate into a 50 ohm load. In no case should the unit be operated with an antenna VSWR exceeding 3:1 and best performance will be obtained when VSWR is less than 1.5:1.

Do not attempt to tune the system by adjusting or tuning the transmitter. Loss of performance and possible damage or poor operation may result.



Operation Instructions

Receiving

Make sure the transceiver is properly installed as indicated previously, and that the antenna and power source are properly connected. If you have not yet done so, plug in the microphone.

(1) Rotate the SQUELCH control to the counterclockwise position initially.

(2) Set the —80/-40/40/80/120 and FM/AM/USB/LSB/CW selector switches into the desired position.

(3) Set the desired channel as indicated by the LED digital display.
(4) Rotate the VOLUME control clockwise for a comfortable listening level.
(5) When listening to an SSB station (LSB or USB) the exact adjustment of the CLARIFIER and TUNE controls are very important. Even a slight misadjustment can cause unintelligible reception.

Transmitting

Important: Never attempt to transmit without antenna or load.
Set the -80/-40/40/80/120 and FM/AM/USB/LSB/CW selector switches into the desired position and select a channel. Set the RF POWER switch into the desired position, depending on local circumstances. To transmit, simply depress the push-to-talk bar on the microphone. Hold the microphone about 5 or 10 cm from your lips. Release push-to-talk button to receive signals.

SWR Check

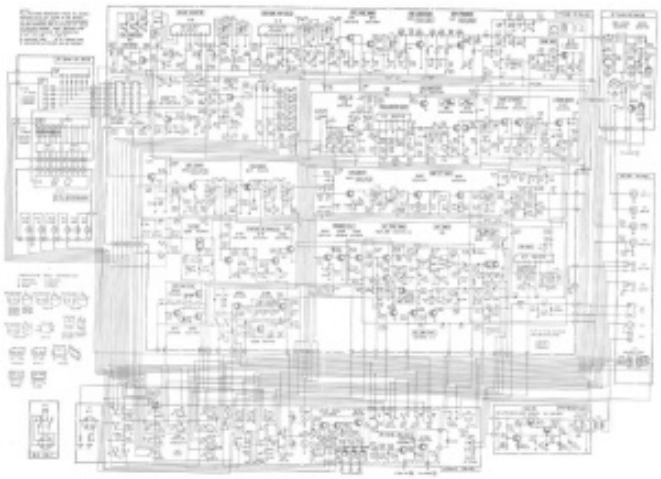
SWR (standing wave ratio) indicates how well your antenna is matched to your transmitter. SWR should be 1.5:1 or less. With your antenna properly connected, measure the SWR as follows:
(1) Set the SWR-CAL switch 5 to the position CAL (down).
(2) Depress the push-to-talk switch on the microphone and adjust the SWR with the calibrate control knob 9 so that the meter points the **SET** mark in the indicator 19.
(3) Release the microphone switch.
(4) Set the SWR-CAL switch 5 to the SWR position and depress the microphone switch again. The SWR value will now be shown on the SWR scale 19.
(5) After checking the SWR put the SWR-CAL switch again to the upper position (SWR) for normal operation.
(6) If the SWR would be higher than 1.5:1, adjust your antenna for best result. If necessary insert an antenna matcher, such as the ROS-28, between the transceiver and the antenna cable, for better matching.

Specifications

GENERAL	
Channels:	227
Operation mode:	AM, FM, USB, LSB, CW
Power:	13.8V DC
Frequency:	26.055 — 28.315 MHz Other bands for commercial and amateur use available.
Ant. impedance:	50 Ohms
Dimensions:	420 x 145 x 300 mm

Weight:	8.5 kg
TRANSMITTER	
RF power output (nominal):	AM: 6W • 4W • 0.5W FM: 6W • 4W • 0.5W SSB: 13W • 10W • 4W (PEP)
Frequency tolerance:	<0.005%
Modulation:	100% AM -2.5 kHz FM
RECEIVER	
Receiving system:	AM/FM: dual conversion super-heterodyne SSB: single conversion superheterodyne
Sensitivity:	AM: 1.0 µV for 10 dB S/N FM: 0.5 µV for 20 dB S/N SSB: 0.5 µV for 10 dB S/N
Selectivity:	AM/FM: 6 kHz at 6 dB down SSB: 2 kHz at 6 dB down
Adjacent channel selectivity:	>80 dB
Audio Output:	>2.5W for 8 Ohms
Squelch range:	1.0 µV — 630 µV
IM frequency:	AM: 10.965 MHz/455 kHz SSB: 10.695 MHz
Spurious:	>50 dB
Clarifier range:	±800 Hz

Tune range:	±5.0 kHz
Intercept point:	3 dBm



SCHEMATIC DIAGRAM : LARRY INTERNATIONAL 3

Channel	MHz Frequency	Channel	MHz Frequency	Channel	MHz Frequency	Channel	MHz Frequency	Channel	MHz Frequency
-80	26.065	-40	26.515	1	26.965	41	27.415	1	27.865
-79	26.075	-39	26.525	2	26.975	42	27.425	2	27.875
-78	26.085	-38	26.535	3	26.985	43	27.435	3	27.885
-77	26.095	-37	26.545	4	27.005	44	27.455	4	27.905
-76	26.105	-36	26.555	5	27.015	45	27.465	5	27.915
-75	26.115	-35	26.565	6	27.025	46	27.475	6	27.925
-74	26.125	-34	26.575	7	27.035	47	27.485	7	27.935
-73	26.135	-33	26.585	8	27.055	48	27.505	8	27.055
-72	26.145	-32	26.595	9	27.065	49	27.515	9	27.965
-71	26.155	-31	26.605	10	27.075	50	27.525	10	27.975
-70	26.165	-30	26.615	11	27.085	51	27.535	11	27.985
-69	26.175	-29	26.625	12	27.105	52	27.555	12	28.005
-68	26.185	-28	26.635	13	27.115	53	27.565	13	28.015
-67	26.195	-27	26.645	14	27.125	54	27.575	14	28.025
-66	26.205	-26	26.655	15	27.135	55	27.585	15	28.035
-65	26.225	-25	26.675	16	27.155	56	27.605	16	28.055
-64	26.235	-24	26.685	17	27.165	57	27.615	17	28.065

-63	26.215	-23	26.665	18	27.175	58	27.625	18	28.075
-62	26.245	-22	26.695	19	27.185	59	27.635	19	28.085
-61	26.255	-21	26.705	20	27.205	60	27.655	20	28.105
-60	26.265	-20	26.715	21	27.215	61	27.665	21	28.115
-59	26.285	-19	26.735	22	27.225	62	27.675	22	28.125
-58	26.295	-18	26.745	23	27.255	63	27.705	23	28.155
-57	26.305	-17	26,755	24	27.235	64	27.685	24	28.135
-56	26.315	-16	26.765	25	27.245	65	27.695	25	28.145
-55	26.335	-15	26.785	26	27.265	66	27.715	26	28.165
-54	26.345	-14	26.795	27	27.275	67	27.725	27	28.175
-53	26.355	-13	26.805	28	27.285	68	27.735	28	28.185
-52	26.365	-12	26.815	29	27.295	60	27.745	29	28.195
-51	26.385	-11	26.835	30	27.305	70	27.755	30	28.205
-50	26.395	-10	26.845	31	27.315	71	27.765	31	28.215
-49	26.405	-9	26.855	32	27.325	72	27.775	32	28.225
-48	26.415	-8	26.865	33	27.335	73	27.785	33	28.235
-47	26.435	-7	26.885	34	27.345	74	27.795	34	28.245
-46	26.445	-6	26.895	35	27.355	75	27.805	35	28.255
-45	26.455	-5	26.905	36	27.365	76	27.815	36	28.265
-44	26.465	-4	26.915	37	27.375	77	27.825	37	28.275
-43	26.485	-3	26.935	38	27.385	78	27.835	38	28.285
-42	26.495	-2	26.945	39	27.395	79	27.845	39	28.295
-41	26.505	-1	26,955	40	27.405	80	27.855	40	28.305

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Documents / Resources

	RigPix Larry International 3 AM/FM/SSB/CW Base Transceiver with Negative Channels [pdf] Instruction Manual Larry International 3, AM Base Transceiver with Negative Channels, FM Base Transceiver with Negative Channels, SSB Base Transceiver with Negative Channels, CW Base Transceiver with Negative Channels