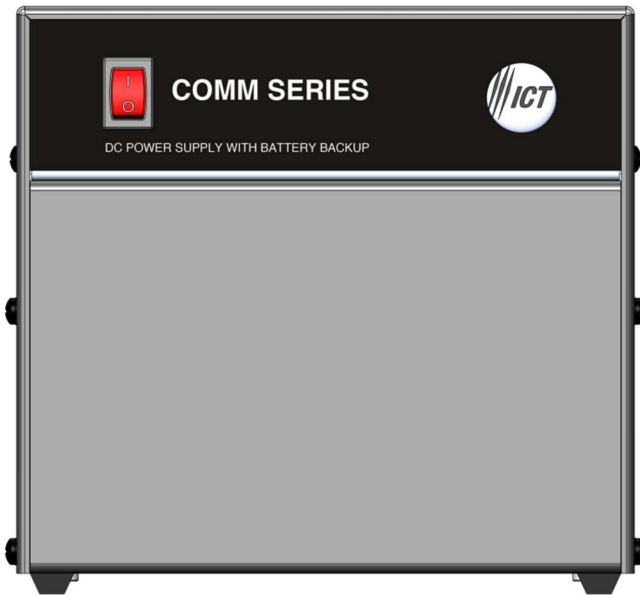




# Innovative Circuit Technology Ltd.



## **ICT BACKUP SERIES** INSTRUCTION MANUAL 855-146-700 Revision 1.0

 **WARNING**

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**Risk of serious personal injury or damage to equipment and property! Always observe the following:**

- Operate the supply from a grounded 3-pin 120Vac or outlet (60Hz) with a branch circuit breaker rated 20A or less
- Replace battery fuse with same type and rating of part
- Do not attempt to charge a frozen battery
- Handle batteries with care, do not short circuit battery terminals

 **CAUTION**

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**Risk of personal injury or damage to equipment! Always observe the following:**

- Install in an indoor environment, keep sources of moisture away from unit
- Ensure the total power consumption of the load does not exceed the rated capacity of the unit output
- Do not block air inlet or outlet openings in the unit

Rev 1.0  
2020

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## INTRODUCTION

The ICT Backup Series is an integrated backup DC power system that provides reliable DC power to a land mobile radio while precisely maintaining an internal back-up battery with a low current float charger. The built in battery is automatically connected to the output to provide instant backup power to the radio should the AC input power fail.

***For prolonged AC outages, the battery may be discharged to a very low level.*** It is good practice to ensure the battery has enough capacity to power the load for long durations and still ensure it is not discharged below approximately 11V. This will help to prevent permanent loss of battery capacity due to over-discharge.

Features include:

- Built in 14.4Ahr sealed AGM battery with external battery protection fuse
- Zero transfer time for battery back-up of DC output when AC fails

ICT Backup Series Model	Input Voltage	Output Voltage	Max/Peak Output Current to Load	Continuous Output Current
ICT12-20UPS	120VAC	13.8VDC	20A	17A

## INSTALLATION

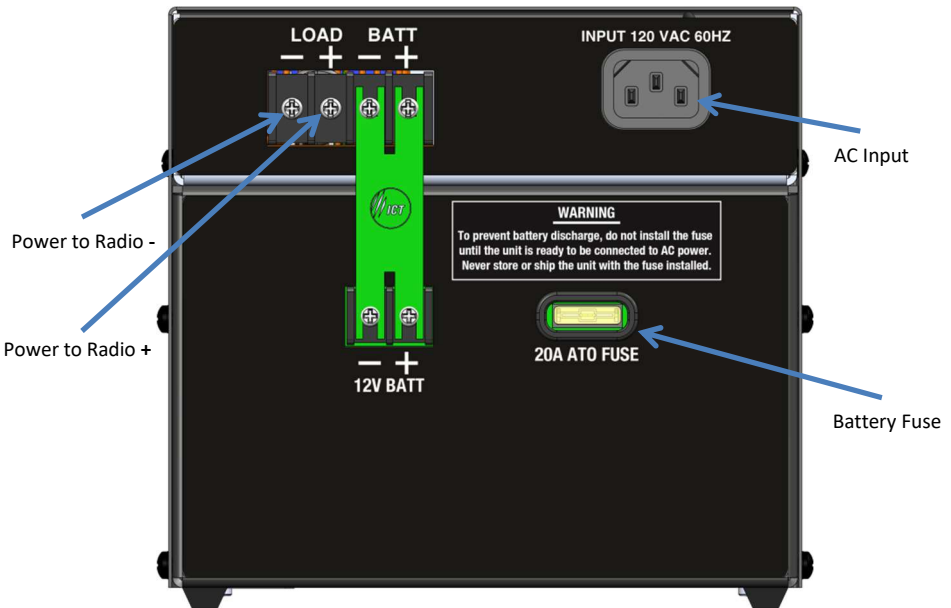
Perform a quick physical check of the unit as it is being taken out of the box to ensure it has not been damaged during shipping. Check for the included parts and accessories shipped with your unit:

- Power cord (North America 120V 15A)
- Output connector covers (installed on connectors)
- Battery Fuse (20A ATO)
- Instruction Manual

**⚠ WARNING**

**Risk of serious personal injury or damage to equipment and property! Always observe the following!**

- Do not tie any of the LOAD and BATT terminals together, as this will bypass internal circuitry
- Make a Ground connection to only a single LOAD or BATT terminal if required. Do not ground both LOAD and BATT as this will bypass internal circuitry
- Do not connect the battery + to any other terminal
- AC input wiring to the charger must be protected using an outlet with a branch rated circuit breaker of 20A or lower value



Backup Power Series Rear View

**Wire the radio** to be powered by the ICT Backup Series directly to the LOAD +/- output terminals on the back panel. Remove the snap-on connector cover and use appropriately sized wire with crimped on spade lugs sized to mate with the output terminal block.

**Check that all connections** to the charger are correct and tight; re-install the snap-on connector cover.

**Connect the AC power cord**, with the front panel switch in the off position.

**Install the Battery Fuse**, 20A ATO type supplied with the unit. Push into the back panel FUSE socket.

## **OPERATION**

With the unit mounted, wired, and powered as described in the INSTALLATION section, perform the following check. Turn the front panel power switch to the ON position.

The unit is now ready to power the radio, and charge the backup battery. If AC power should fail (or be switched off) the internal isolation diode will keep the battery connected to the LOAD output, to ensure there is no interruption in output power. When AC power returns the unit will recharge the battery with a low current float charger.

Example Backup Time: The internal 14.4Ahr battery with an average radio draw of approximately 3A will typically maintain radio operation for about 2.5 to 3 hours when fully charged.

**EMC Note:** This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules and ICES 003. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced RF technician for help.

# PRODUCT SPECIFICATIONS

	<b>ICT12-20UPS</b>
Output Voltage range	13.8V
Max/Peak Output Current Limit at nominal rated output	20.0A
Continuous Load Current Rating at nominal rated output	17.0A
Maximum Battery Charge Current	2.0A
Output Ripple	<50mV p-p
Peak Efficiency (typical)	86%
Line Regulation	0.20 %
Load Regulation	0.50%
AC Input (IEC C14 Connector)	120 +/- 10Vac 60Hz

DC Output Connector: Terminal Block, M4 Screws, 9mm spade max width

Battery Size: 12V, 14.4Ah AGM

Operating Temperature Range<sup>1</sup>: 0C to +30°C

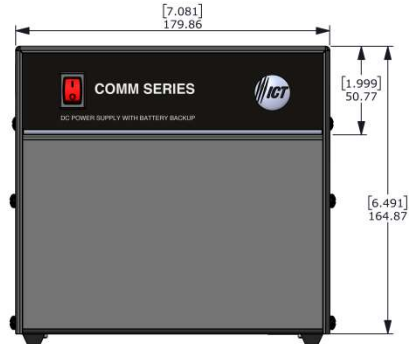
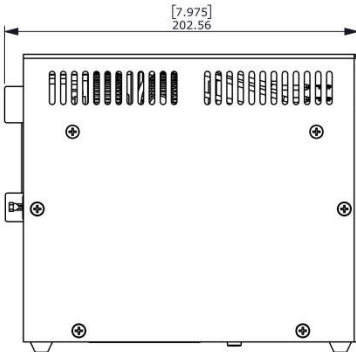
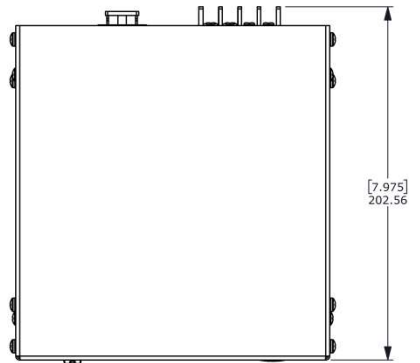
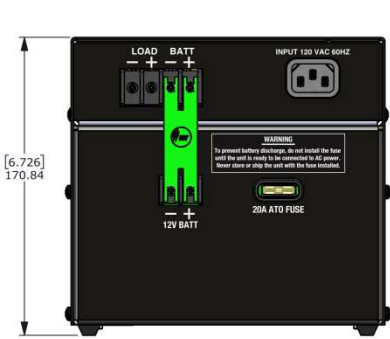
Storage Temperature Range<sup>1</sup>: 0C to +40°C

Cooling: Convection

Power Supply Regulatory Compliance: UL 60950-1  
FCC Part 15 Class B

<sup>1</sup> ICT backup Series is for controlled environment use only

Dimensions:



Weight (lbs/kg):

17lbs/7.8 kg

## ICT LIMITED WARRANTY

The warranty period on ICT products is two (2) years from date of purchase from an authorized ICT reseller or OEM with valid proof of purchase, or from date of shipment from the ICT manufacturing facility. The warranty period for a repaired product or part is ninety (90) days or the remainder of the unexpired term of the new product warranty period, whichever is greater. Repair or replacement of a defective product or part does not extend the original warranty coverage period.

ICT Limited Warranty is only intended for the benefit of the original purchaser and user of this product. This Warranty is not transferable or assignable without the prior written permission of ICT. ICT's sole obligation and liability under this warranty is limited to either repairing or replacing defective products at the sole discretion of ICT. When repairing or replacing the products, ICT may use products or parts that are new, equivalent to new or re-conditioned. Parts repaired or replaced during the warranty period will be under warranty for the remainder of the warranty period.

No claim will be accepted unless written notice of the claim is received by ICT in accordance with ICT's Return Material Authorization (RMA) procedure, as soon as reasonably possible after the defect is discovered. A valid product serial number must be provided with the RMA claim to prove eligibility. The RMA form is available on the ICT website at [www.ict-power.com/support/warranty-repair/](http://www.ict-power.com/support/warranty-repair/).

The Purchaser shall at their own risk and cost return the defective product to ICT's factory or designated repair center once an RMA is issued by ICT. Return of the products to the customer after repair is completed shall be prepaid by ICT unless otherwise mutually agreed between the parties. Products shipped to ICT which have incurred freight damage will not be covered by this Warranty and any repairs or replacement parts, components or products needed will be invoiced in the full current price amount and returned freight collect to Purchaser. It is the Purchaser's responsibility to check the product upon receipt for any damage during shipping and to contact the carrier or shipper regarding such damage. Product that is returned as defective, which is determined to operate within published specifications will be returned to the Purchaser freight collect.

ICT assigns to Purchaser any warranties which are made by manufacturers and suppliers of components of, or accessories for, the ICT product and which are assignable. ICT makes no representations as to the effectiveness or extent of such warranties, assumes no responsibility for any matters which may be warranted by such manufacturers or suppliers and extends no additional coverage under this Warranty to such components or accessories.

In no event shall ICT be liable for any special, indirect or consequential damages such as, but not limited to, loss of use, business or goodwill, loss of revenue, or loss of profits, which may result, either directly or indirectly, from defects in products provided by ICT.

This Warranty will be void if the product has been subjected to misuse, neglect, accident, exposure to environmental conditions not conforming to the products' limits of operation, improper installation or maintenance, improper use of an electrical source, defects caused by sharp items or by impact pressure, a force majeure event, has been modified or repaired by anyone other than ICT or its authorized representative, has been subjected to unreasonable physical, thermal or electrical stress, improper maintenance, or causes external to the unit including but not limited to general environmental conditions such as rust, corrosive atmospheres, sustained temperatures outside the specified operating range of the equipment, exposure to power surges and/or electrical surges, improper grounding, mold or dust, animal or insect damage, water damage or immersion in liquid of any kind, or if the serial number has been altered, defaced, or removed.

ICT does not control the installation and use of any ICT product. Accordingly, it is understood this does not constitute a warranty of performance or a warranty of fitness for a particular purpose. This Warranty represents the entire agreement between ICT and Purchaser with respect to the subject matter herein and supersedes all prior verbal or written communications, representations, understandings or agreements relating to this subject.

**INNOVATIVE CIRCUIT TECHNOLOGY LTD.**  
26921 Gloucester Way  
Langley, British Columbia, Canada V4W 3Y3  
T 604.856.6303 F 604.856.6365 [www.ict-power.com](http://www.ict-power.com)