



## BEFORE UNPACKING READ THIS GUIDE!

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This Quick Start Guide will show you how to safely and properly install, test and register the SCAN-LINK Dual Node Armour System™

SLAU-UV-DB-NB-XXX-XX-07  
SLAU-UV-DB-NB-XXX-XX-07 KIT

### **This guide contains directions on the legally mandated requirements for a proper installation.**

Improper installation and/or modifications to the device not expressly approved by SCAN-LINK Technologies Inc. may expose the operator to harmful radiation and may void the user's authority to operate the equipment.

The SCAN-LINK Armour System™ is to be used only as a tool to assist a vehicle operator and does not replace any safety procedures in place, nor does it remove any responsibility for the safe operation of the vehicle from the driver.

**CAUTION:** *Changes or modifications not expressly approved by SCAN-LINK Technologies Inc. could void the user's authority to operate the equipment.*

*The SCAN-LINK Armour System™ is intended for use on mobile equipment in construction and industrial applications. It is not intended for use by the general public.*

# DISCLAIMER

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**The SCAN~LINK Armour System™** is not 'safety rated' and thus cannot be relied on as front-line defense against equipment-to-pedestrian or equipment-to-object strikes. It is intended as a supplementary safety system only, to improve operator and pedestrian awareness and to help 'fill in' blind spots. There is no replacement for proper training and operation of equipment. The SCAN~LINK Armour System™ is designed to augment existing site safety practices and policies, to further inhibit the chances of worker injuries and fatalities. Remember, pedestrians will not be detected if they are not wearing functioning, SCAN~LINK™ tagged safety wear. All employees and visitors to any operations site should be trained in the functionality of the SCAN~LINK Armour System™ and be fully aware of their surroundings while on site.

The SCAN~LINK Armour System's™ installation, operation and maintenance, in all its forms, is covered by various legal documents, disclaimers and procedures, all of which are available upon request. By using the SCAN~LINK Armour System™ or any of its components, you are bound to adhere to the conditions and practices outlined therein.

# **CONTENTS/ REQUIREMENTS**

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# AGENCY CERTIFICATIONS

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## **FCC**

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Any changes or modifications of this product, not approved by the manufacturer will void the user's authority to operate the equipment.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the installation manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his/her own expense.

## **IC/IFT**

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2)

this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

La operación de este equipo está sujeta a las siguientes dos condiciones: (1) es posible que este equipo o dispositivo no cause interferencia perjudicial y (2) este equipo o dispositivo debe aceptar cualquier interferencia, incluyendo la que pueda causar su operación no deseada.

### **FCC/IC**

To comply with FCC/IC RF exposure limits for general population / uncontrolled exposure, the SCAN~LINK™ Antenna Unit and the Operator Display Unit must be installed to provide a separation distance of at **least 20cm (8 inches)** from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

For further information on RF exposure and compliance, please visit the following links:

<https://support.scan-link.com>

<https://apps.fcc.gov/oetcf/eas/reports/GenericSearch.cfm>

<https://sms-sgs.ic.gc.ca/search/radioEquipmentPortal>

# PACKAGE CONTENTS:

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SLAU-UV-NB-XXX-XX-07



*DISPLAY UNIT*



*POWER HARNESS*



*PRIMARY &  
AUXILIARY  
ANTENNA UNIT*



*10 FOOT  
RF CABLE*

**Additions included in SLAU-UV-NB-XX-XX-07-KIT**



*EXTERNAL ALARM*



*MOUNTING BRACKET*

# SERIAL NUMBERS (MACs)

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Write these down now before installing:

**Antenna**      00 : 1C : 2C : XX : XX : XX : XX : XX

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**Display**      00 : 1C : 2C : XX : XX : XX : XX : XX

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# MOUNTING

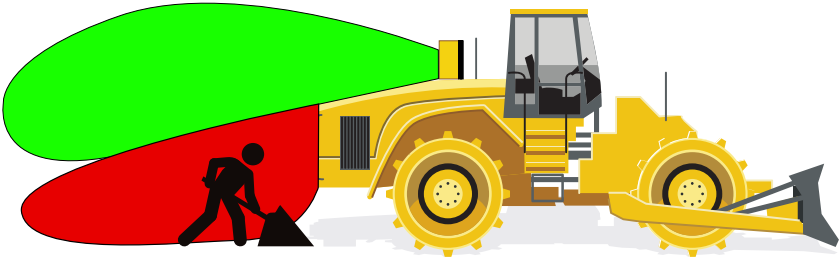
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## Antenna Mounting

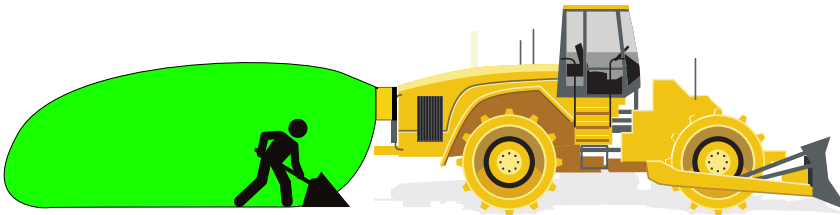
The ideal mounting height for the Armour Antenna is between *5 and 6 feet (150-180cm)*, but can be installed up to a maximum of 15 feet (4.5 meters) above grade. *Installing above this level will negatively affect the range of detection.*

Choose a mounting location on your machine with 15" vertical and 10" horizontal clearance (40cm vertical, 25cm horizontal). The detection area is directional, leaving the 'face' of the unit (the surface labelled SCAN~LINK).

### BAD: NO VIEW OF GROUND



### GOOD: FULL VIEW OF GROUND



**Keep in mind that the antenna must be mounted vertically with the cords leaving the bottom for proper operation.**

## **The Antenna must have a clear view of the ground and be free of obstructions to all sides!**

With the fasteners of your choice, securely attach the mounting bracket face to your machine in the chosen area, with the pivot bolts on the bottom. The holes in the mounting bracket are 1/4" (6mm) in diameter.

With the bracket secured, slide the Antenna on to the four bolt-heads through the channels in the back of the Antenna. When it is in the desired location, tighten the bolts with a 7/16" (11mm) ratchet.

Finally, tilt the antenna so that it aims at a target five feet (150 cm) off of the ground at a distance of 20 feet (6m). Tighten down the pivot bolts so that the unit does not move.

## **Display Mounting**

The Display unit comes in a box labelled 'In-Cab Display'. Inside you will find the display unit itself, and two pieces of dual-lock Velcro.

The cord on the display unit is 6 foot 6 inches (200cm) long, and requires 12-24 volts DC.

Stick one side of the Velcro to the Display unit, and the other side to the desired mounting location. The location should be relatively flat for proper adhesion, and easily visible from a normal driving position.

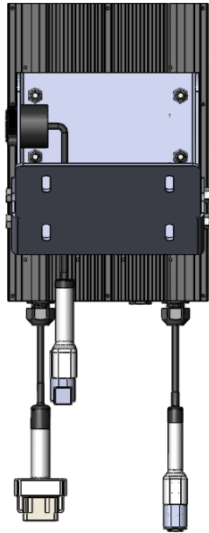
The Display is mountable in any orientation, and should be mounted at least 12" (30cm) away and in view from the operator's seat for ease of monitoring.



## **OPTION: Exterior Alarm - Mount and Connect**

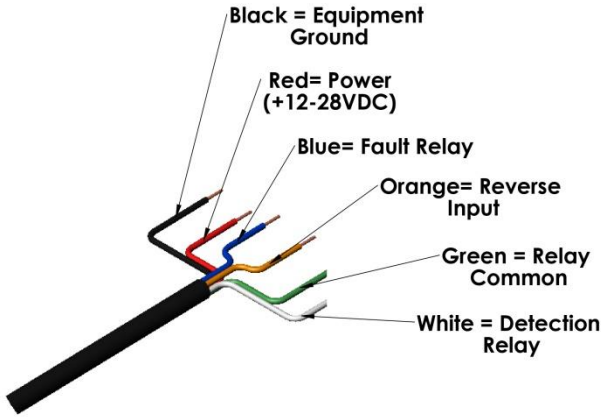
The SCAN~LINK Armour™ package may have come with an external alarm so workers outside the cab know when they are in proximity to a piece of active equipment.

The alarm can be mounted in the Antenna Mounting Bracket. The bracket has mounting holes on either side for the alarm. Simply unthread the washer from the alarm, insert the alarm into the mounting hole and thread the washer back on. Use a Loctite™ adhesive (or similar) on the thread when fastening the washer for extra durability and to avoid the washer from vibrating loose.



Once mounted, simply connect the alarm to the Relay Harness leaving the Antenna. It is the cable on the bottom-left in the Figure above.

# WIRING



## Display Wiring

While we're still in the cab, route and connect the wire leads to the appropriate terminals. These wires may be extended with 18AWG (1.02mm) or larger wire:

<b>Red Wire</b> Power Supply	<b>Always</b>	VCC (+12-28VDC)
<b>Black Wire</b> Power Supply	<b>Always</b>	VDD (-) Equipment Ground
<b>Orange Wire</b> Reverse Input	<b>Always</b>	Reverse Input
<b>Blue Wire</b> Fault Relay	<b>Fault / No Power</b> <b>No Fault / Power</b>	Open Closed to Relay Common (Green)
<b>Green Wire</b> Relay Common	<b>Always</b>	
<b>White Wire</b> Detection Relay	<b>Detecting / No Power</b>	Open
	<b>Not Detecting / Power</b>	Closed to Relay Common (Green)

It is advised to power the in-cab display from a fused circuit (a 1A fuse is sufficient) to avoid a short circuit if for whatever reason the wire is pinched.

## Primary Antenna Wiring

Your Armour unit may have come with several cables. For now, we are only interested in one of them: the Power Harness.

The Power harness should come in a bag labelled 'Power Harness' – however, you can also identify it by looking at the connector on one end. If it has two large square holes and six small holes for pins, you've got the right one.

The Power harness' wires may be extended with 18AWG (1.02mm) or larger wire. Ensure that you weatherproof exterior connections or splices.

<b>RED WIRE</b>	+12-24VDC, fused @ 1A
<b>BLACK WIRE</b>	Ground/Frame
<b>ORANGE WIRE</b>	Trigger: Reverse Signal or Key/Ignition (12-24V, Active High)  Connect to the same terminal as the <b>RED</b> wire for Key/Ignition activation if necessary.

The antenna is active at all times provided it has power but will **not** detect tags unless the **ORANGE** trigger wire is connected. The **ORANGE** wire of the Antenna must be connected to either a Reverse Signal or the same voltage (key/ ignition power) as the **RED** wire. **If the Antenna's ORANGE wire is connected to ignition power (same spot as RED), the antenna, display**

**and alarm (if equipped) will be active at all times, regardless of whether the vehicle is in reverse or not!**

Route the wire, being careful to avoid pinch points, and connect to a fused 12-24V power source. The Antenna is fused internally; however, *this will not protect the wire or vehicle if the wire were to short against the frame of the vehicle*, and so fusing at 1A is strongly recommended.

At this point, you can connect the Power harness to the Antenna. The connector is polarized and can only go in one way.

If you have multiple wires coming out the base of your Antenna, the wire hanging out the bottom left of the Antenna while looking at it is the Power Harness.

## **Auxiliary Antenna**

Attach the Auxiliary Antenna in the same manner as the Primary, using the Mounting Bracket.

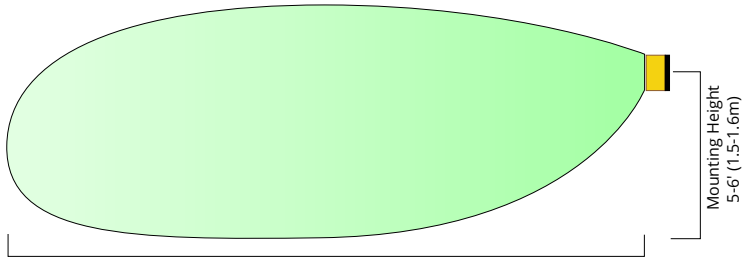
Taking the RF Cable, Connect one end to the Auxiliary Antenna and the other end to the Primary Antenna.

For added protection, follow the Weatherproofing Instructions in the User Manual.

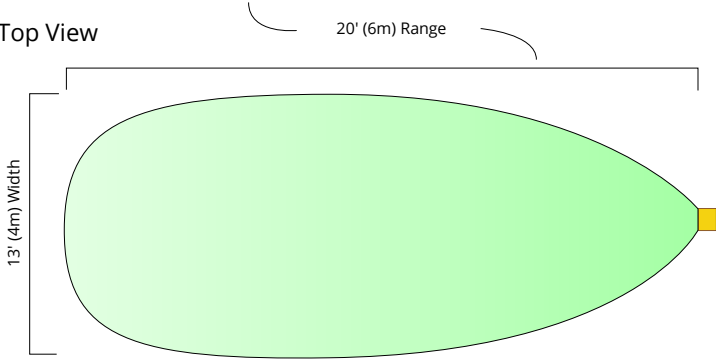
# TESTING

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Side View



Top View



## Procedure

Turn the vehicle on to ignition power (you don't need to start the engine unless it's required to put the vehicle in reverse).

If you have the **ORANGE** wire of the antenna connected to a Reverse Signal, you'll need to put the vehicle in reverse.

Stand approximately 30 feet (10 meters) away from the Antenna, and slowly walk towards the vehicle. When within 20 feet of the vehicle, the Display unit should alarm, and if you have the External Alarm equipped, it should sound as well.

You can adjust the volume of the Display unit by pressing the grey button on the front. The LEDs will light up one to four and back down to one. The more lights lit, the louder the volume.

When you step back outside the area, the alarm(s) *will remain activated for an additional three seconds.*

Test one more time. If you have to stand closer than 16.4 feet (5 meters) to the vehicle, it's possible that you need to adjust your aim either up or down.

Now standing far off to one side, repeat this process to discover the full extent of the detection region. The detection region is essentially a 'cone' that should be 25 feet (8 meters) long and 12 feet (4 meters) wide.

After verifying this region, turn off the vehicle.

# REGISTRATION

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## **Congratulations!**

You have successfully installed the SCAN-LINK Armour system.

The system is warranted for one year. If for whatever reason you need to return it to us, you'll need to have a registered warranty. It only takes a couple of minutes, and is done online.

Head over to <http://www.scan-link.com>, and under the 'Resources' menu, click 'Warranty Registration'. Use the following credentials:

<b>Username:</b>	<b>resources</b>
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<b>Password:</b>	<b>sc@nlink32!</b>
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# SPECIFICATIONS

## Antenna Module

Item	Value	Notes
<b>Input Voltage</b>	12V to 28V DC	Absolute 9V to 34V DC
<b>Input Current 12VDC</b>	0.28A	
<b>Input Current 24VDC</b>	0.14A	
<b>Power Consumption 12VDC</b>	3.5W	
<b>Power Consumption 24VDC</b>	3.5W	
<b>Reverse Input</b>	Positive Active 9-36V DC	Reverse signal is detected if the input is connected to a voltage between 9 and 34 volts.  Disconnected signal or when connected to ground will be interpreted as the vehicle not in reverse.
<b>Longitudinal Range</b>	8m	Typical
<b>Temperature Range</b>	-20°C to +50°C	Ambient. Cold temperature version available.
<b>RFID Sensor Radio Frequency</b>	865.7 – 867.5 MHz	North American unlicensed band
<b>Wireless Link Frequency</b>	2.405 – 2.475 GHz	North American unlicensed band
<b>Registration</b>	FCC/IC/ACMA/EACU	Registered under SCAN-LINK Technologies Inc.
<b>FCC ID</b>	YUU-SLAU270NB	Registered under SCAN-LINK Technologies Inc.
<b>Ingress Protection</b>	Designed for IP-65	Do NOT immerse
<b>RoHS Compliant</b>	Yes	



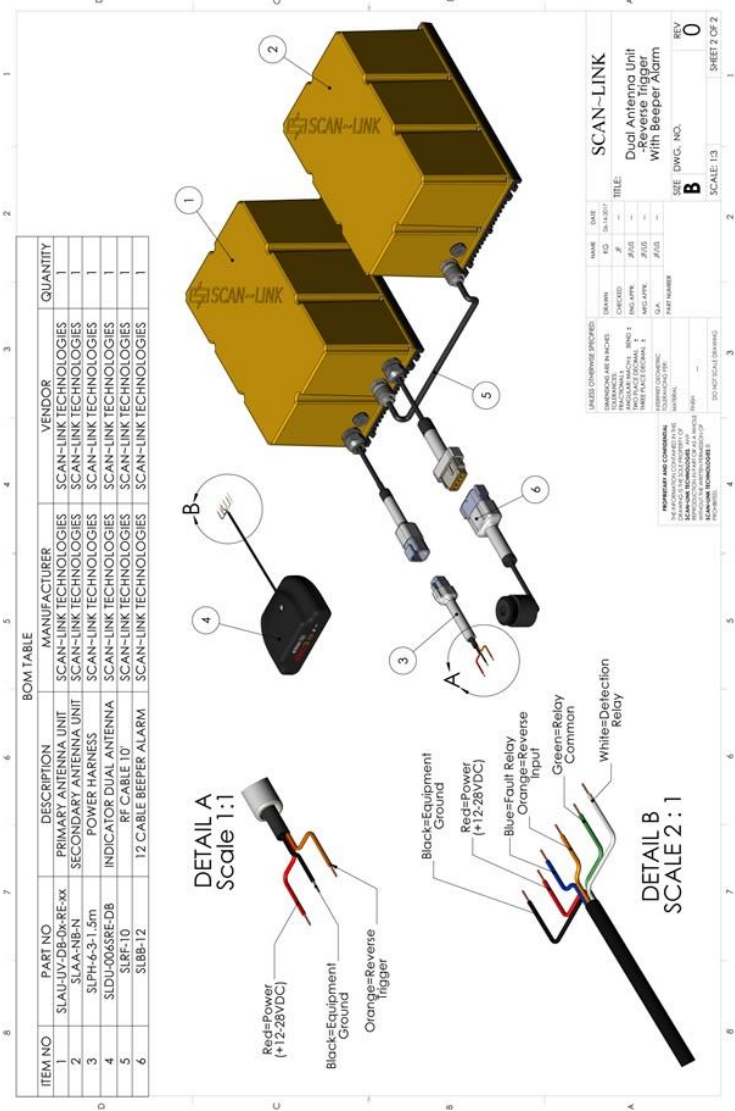
# In-Cab Display Module

Item	Value	Notes
<b>Input Voltage</b>	12V to 28V DC	Absolute 9V to 34V DC
<b>Input Current</b>	100mA	Max @ 9VDC in
<b>Power Consumption</b>	1W	Typical
<b>Reverse Input</b>	Positive Active 9-36V DC	Reverse signal is detected if the input is connected to a voltage between 9 and 34 volts.  Disconnected signal or when connected to ground will be interpreted as the vehicle not in reverse
<b>Wireless Link Frequency</b>	2.405 - 2.475 GHz	North American unlicensed band
<b>Industry Canada ID</b>	7084A-SM220	Registered under Synapse Wireless Inc.
<b>FCC ID</b>	U90-SM220	Registered under Synapse Wireless Inc.
<b>Audible Warning Intensity</b>	99dB(A) 88dB(A)	Max @ 20cm (8 inches) typical Min @ 20cm (8 inches) typical
<b>Ingress Protection</b>	Indoor use only	
<b>RoHS Compliant</b>	Yes	

For other specifications,  
please e-mail [support@scan-link.com](mailto:support@scan-link.com).



# Hook-Up Diagram: Reverse Trigger



# LIMITED WARRANTY

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## Manufacturer Limited Warranty and Limitation of Liability

### Warranty Coverage

1. SCAN~LINK Technologies Inc. ("SCAN~LINK") warrants to the original end-user purchaser ("Purchaser") of this SCAN~LINK device ("Device") that the Device will be free from defects in materials and workmanship and will operate without mechanical failures under normal use, as defined in this Limited Warranty, for a period that commences on the date that the Device was delivered to the vendor who sold the Device ("Dealer") or delivered to the Purchaser, whichever date occurs first, and continues for twelve (12) months thereafter ("Warranty Period").
2. The warranty provided in this Limited Warranty is the only warranty SCAN~LINK provides for the Device. SCAN~LINK gives no other guarantee, warranty or condition, express, statutory, implied or collateral. No one else may give any guarantee, warranty, or condition on SCAN~LINK's behalf.
3. This Limited Warranty is not transferrable and is limited to the first Purchaser of the Device only.
4. If SCAN~LINK repairs or replaces the Device during the Warranty Period, the Warranty Period for the repaired or replaced Device will expire upon the expiration of the original Warranty Period. Moreover, the time taken for transit, repair and/or replacement whether under the Limited Warranty or otherwise shall not be excluded from the Warranty Period.
5. Warranty repairs must be carried out by SCAN~LINK or its authorized agents. This Limited Warranty will be void if repairs are attempted by any unauthorized party, including the Purchaser.
6. Warranty service or support provided by or on behalf of SCAN~LINK under this Limited Warranty is conditional on the Purchaser reporting any problem(s) with the Device to the Dealer within the Warranty Period.
7. The Dealer and SCAN~LINK working in conjunction will initially attempt to troubleshoot the Purchaser's concerns onsite with the Purchaser.
8. If SCAN~LINK determines that the Device qualifies for mail-in service, SCAN~LINK will issue a Return Merchandise Authorization ("RMA") authorizing shipping of the Device to SCAN~LINK.
9. Any Device shipped to SCAN~LINK is to be mailed in accordance with SCAN~LINK's instructions. SCAN~LINK bears no responsibility for any Device not shipped in accordance with its instructions.

10. After receiving the Device, if SCAN~LINK determines that the Device is defective and covered under this Limited Warranty, SCAN~LINK may at its absolute and sole discretion:
  - i. Repair the defective portion of the Device without charge to the Purchaser with new or reconditioned parts;
  - ii. Replace the defective Device without charge to the Purchaser with a comparable new or refurbished device; or
  - iii. Refund to the Purchaser the purchase price paid for the Device.
11. If SCAN~LINK determines that the Device is not covered by this Limited Warranty or that the Limited Warranty has been rendered void, SCAN~LINK will charge a fee for its efforts to diagnose and service any problems with the Device, reflecting its time, the cost of parts, and return shipping fees.
12. Service options, parts availability and response times may vary.
13. If SCAN~LINK provides a replacement Device, the returned Device becomes the property of SCAN~LINK and the replacement Device becomes the property of the Purchaser.

### **Warranty Exclusions and Limitations**

14. As determined solely by SCAN~LINK, the Limited Warranty does not apply in situations where damage, malfunction, or defect to the Device is caused by or results from:
  - i. misuse, alteration, modification, proximity or exposure to heat, accident, act of God, abuse, neglect or misapplication;
  - ii. use of the Device in conjunction with accessories, products, services, software, applications, or ancillary or peripheral equipment not expressly approved or provided by SCAN~LINK specifically for use with the Device;
  - iii. improper installation or operation not consistent with the Maintenance Procedures set out in the Manufacturer's Installation and Operating Instructions; or
  - iv. failure to maintain the Device in accordance with the Maintenance Procedures set out in the Manufacturer's Installation and Operating Instructions.

### **Limitation of Liability**

15. Except to the extent that SCAN~LINK is expressly prohibited by law from limiting or excluding remedies in relation to the Device, this Limited Warranty sets out the Purchaser's exclusive remedies for the Device and any other warranties, conditions, representations, or guarantees of any kind, either express or implied, including but not limited to implied warranties of

merchantability, satisfactory quality and/or fitness for a particular purpose are hereby disclaimed and shall not apply or have any affect.

16. SCAN~LINK is not responsible for any indirect, incidental, special or consequential damages (including without limitation damages for loss of profits, business interruption, or other pecuniary loss) arising out of the use or inability to use the Device. These exclusions apply even if SCAN~LINK has been advised of the possibility of these damages and even if any remedy fails of its essential purpose. This limitation is intended to apply and does apply without regard to whether such damages are claimed, asserted or brought in an action or claim in tort, contract, on the warranty, or under any other legal theory. The liability of SCAN~LINK and anyone acting on behalf or with SCAN~LINK for loss or damage arising under this Limited Warranty shall not exceed in aggregate the price paid by the Purchaser for the Device or the cost of replacing the Device, whichever is greater.

### **Governing Law**

17. This Limited Warranty is governed by the laws of Ontario and the laws of Canada applicable therein.

### **Miscellaneous**

18. All claims made under the Limited Warranty are governed by the terms set out herein. If there is any conflict between this Limited Warranty and any other warranty provided to the Purchaser, the provisions of this Limited Warranty shall be applied to SCAN~LINK to the extent of such conflict.
19. If any term, provision or subsection of this Limited Warranty is held to be void, illegal or unenforceable, the validity or enforceability of the remainder of such term, provision or subsection and this Limited Warranty will not be affected.

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Current as of June, 2018. SCAN~LINK may have updated documentation which can be located on our website,

[www.scan-link.com](http://www.scan-link.com).

## ADDITIONAL PRODUCTS

DESCRIPTION	PART NUMBER	PHOTO
Yellow Safety Vest Sizes: Small, Medium, Large, XLarge, XXLarge	SLYV14S SLYV14M SLYV14L SLYV14XL SLYV14XXL	
Orange Safety Vest Sizes: Large	SLOV15L	
Hard Hat Kit	SLHHK	
External Beeper Alarm	SLBA-12B	
RapidPair™	SLRP-SN220	
Marker Tag	SLMT	
Marker Tag - Long Range	SLMTLR	
Tag Health Tester	SLHT-04D	



# SCAN~LINK

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## **GENERAL INFORMATION**

[info@scan-link.com](mailto:info@scan-link.com)

## **SALES**

[sales@scan-link.com](mailto:sales@scan-link.com)

## **TECHNICAL SUPPORT**

[support@scan-link.com](mailto:support@scan-link.com)