



## Cyber Security Advisory #13/2021

### Number:Jack in B&R Products

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## Executive Summary

CVE-2020-27634 ISN generator is initialized with a constant value and has constant increments  
Forescout Research Labs disclosed Number:Jack, a set of vulnerabilities in multiple TCP/IP stacks in which ISNs (Initial Sequence Numbers within TCP connections) are improperly generated, leaving TCP connections of a device open to attacks. B&R uses one of the affected IP stacks in products of the groups

- Vision cameras
- Safe Logic
- Bus Controller
- Motion components

## Affected Products

Affected versions: Please refer to Table 1 and Table 2

Software product	Affected Versions	Patched Version	Patch Availability
ACP10	<5.15.0	5.15.0	Available
Acp10Arnc0	<5.15.0	5.15.0	Available

Table 1: Overview on affected software products, patched versions and release dates

Material Number	Affected hardware /firmware version	Patched hardware /firmware version	Patch Availability
8B0C*	HW <=1.0.0.4	TBA	Release pending
8CVE*	HW <=1.0.0.3	-	No fix planned
8I66xxxxxxx.0P-xxx	HW <2.4.0.0	HW 2.4.0.0	Available
8I76xxxxxxx.0P-xxx	HW <2.4.0.0	HW 2.4.0.0	Available
8I86xxxxxxx.0P-1xx	HW <2.4.0.0	HW 2.4.0.0	Available
8I86xxxxxxx.0P-2xx	HW <2.4.0.0	HW 2.4.0.0	Available
PLCBC0083	HW <2.14.1.0	HW 2.14.1.0	Available
SE0BC0088	FW <=3.11	TBA	Release pending
SE0BC00H3	FW <=1.50	TBA	Release pending
SE0SLH000	FW <=1.50	TBA	Release pending
SE0SLH000-1	FW <=1.50	TBA	Release pending
SE0SLH001-1	FW <=1.50	TBA	Release pending
VSS*	FW <110	FW110 (HW 1.4.0.x)	Available
X20(c)BC0083	HW <2.14.0.0	HW 2.14.0.0	Available
X20(c)BC0087	FW <=1.50	TBA	Release pending
X20(c)BC0088	FW <=3.11	TBA	Release pending
X20(c)BC1083	HW <2.14.0.0	HW 2.14.0.0	Available
X20(c)BC8083	HW <2.14.0.0	HW 2.14.0.0	Available
X20(c)BC8084	HW <2.14.0.0	HW 2.14.0.0	Available
X20(c)HB8815	HW <1.7.0.0	HW 1.7.0.0	Available
X20BC0087-10	FW <=1.50	TBA	Release pending
X20BC0087-C01	FW <=1.50	TBA	Release pending
X20BC00E3	FW <=4.04	FW 4.05	Release pending
X20BC00G3	FW <=1.28	TBA	Release pending
X20BC00H3	FW <=2.79	TBA	Release pending



X20BC00H3-C01	FW <=2.79	TBA	Release pending
X20cBC00E3	FW <=4.04	FW 4.05	Release pending
X20HB28G0	FW <=1.28	-	Maintenance discontinued
X20HB88G0	FW <=1.28	-	Maintenance Discontinued
X20SL81xx	HW <2.4.2.0	HW 2.4.2.0	Available
X67BC81RT.L12	HW <2.14.0.0	HW 2.14.0.0	Available
X67BC8321.L12	HW <2.14.0.0	HW 2.14.0.0	Available
X67BC8321-1	HW <2.14.0.0	HW 2.14.0.0	Available
X67BC8331	HW <2.14.0.0	HW 2.14.0.0	Available
X67BC8513.L12	HW <2.14.1.0	HW 2.14.1.0	Available
X67BC8513.L12-1	HW <2.14.0.0	HW 2.14.0.0	Available
X67BC8591.L12	HW <2.14.1.0	HW 2.14.1.0	Available
X67BCD321.L12	FW <=3.11	TBA	Release pending
X67BCD321.L12-1	FW <=3.11	TBA	Release pending
X67BCE321.L12	FW <=4.04	FW 4.05	Release pending
X67BCG321.L12	FW <=1.50	TBA	Release pending
X67BCJ321	FW <=1.50	TBA	Release pending
X67BCJ321.L12	FW <=1.50	TBA	Release pending

Table 2: Overview on affected hardware, patched versions and release dates

## Vulnerability ID

CVE-2020-27634 ISN generator is initialized with a constant value and has constant increments

## Vulnerability Severity

The severity assessment is based on the FIRST Common Vulnerability Scoring System (CVSS) v3.1.

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CVSS v3.1 Score: 5,7 (Medium)

CVSS v3.1 Vector: CVSS:3.1/AV:N/AC:L/PR:N/UI:N/S:U/C:L/I:L/A:N/E:U/RL:O/RC:C

## Corrective Actions or Resolution

The described vulnerabilities have been fixed in the product versions as listed in Table 1. Information about the availability of patches will be updated periodically.

B&R recommends applying product updates at the earliest convenience.



## Vulnerability Details

### CVE-2020-27634 ISN generator is initialized with a constant value and has constant increments

#### Description

The Initial Sequence Number (ISN) of B&R vision cameras, safe logics, bus controller and motion components is initialized with a constant value and has constant increments. This results in the ISN being able to be calculated.

#### Impact

An unauthorized and network based attacker could leverage this vulnerability to potentially hijack an ongoing connection or spoof a new one

#### Workarounds and Mitigations

B&R has not identified any workarounds or mitigating factors.  
In general, B&R recommends implementing the Cyber Security guidelines.

## Supporting information and guidelines

The B&R Cyber Security webpage provides further information including Cyber Security guidelines. Please find these resources here: <https://www.br-automation.com/en/service/cyber-security/>

## Document History

Version	Date	Description
1.0	2021-11-30	Initial version