

AIRFIELD

LINC Node

IoT Gateway



Introduction

LINC Node is a small, rugged, programmable Internet of Things (IoT) gateway that extracts locally available data from intelligent airfield ground lighting devices and delivers it to your instance of CORTEX Service, ADB SAFEGATE's cloud solution for airside asset management. It enables connectivity of existing infrastructure and initiates your Airside 4.0 journey.

Uses

LINC Node provides an interface for airports to consult intelligent AGL device information from anywhere at any time on any device with internet connectivity (tablet, mobile phone). It can be used for the following applications:

Having this information readily available on a portable device reduces the amount of time spent driving on site to collect the information that is already there. Getting immediate alerts on the smartphone in case of an operational problem reduces the response times to fix the issue.

CCR Connect

- Insulation Resistance Monitoring and trending
- CCR Status monitoring (temperature, step, output, etc.)
- Open circuit alarms

PAPI Connect

- Glide Angle trending and alarm
- Horizontal Angle trending and alarm
- Red/White LED alarm
- Heater fault alarm
- Temperature trending

Customer Benefits

- Reduced personnel movement time
- Information ready at hand anytime, anywhere
- Improved maintenance cycles
- Historical trending
- Automated work orders
- Alarm notification on mobile devices via e-mail or Microsoft Teams message

LINC Node Technology

- LINC Node uses cellular technology to provide a secure and reliable connection to your AGL devices. It has a built-in intelligence capable of formatting and packaging the data that goes to the cloud. LINC Node will use a dedicated network to ensure the operational integrity of the ALCMS network and only allows for monitoring of data to prevent any intrusive attacks.
- Security of data transport is ensured with zero-touch security provisioning, secure boots and secure firmware upgrade, automated and unlimited key rotations over the air for edge-to-cloud authentication.
- LINC Node uses Low Power Wide Area (LPWA) technology (CAT-M1, NB-IOT) and GSM (2G) technology.
- Manufactured by Sierra Wireless.

Features

- CCR variant can connect up to 16 devices
- PAPI variant connects to 1 PAPI
- ADB SAFEGATE's proven Cortex Service platform will display LINC Node's data (requires subscription)

System Overview

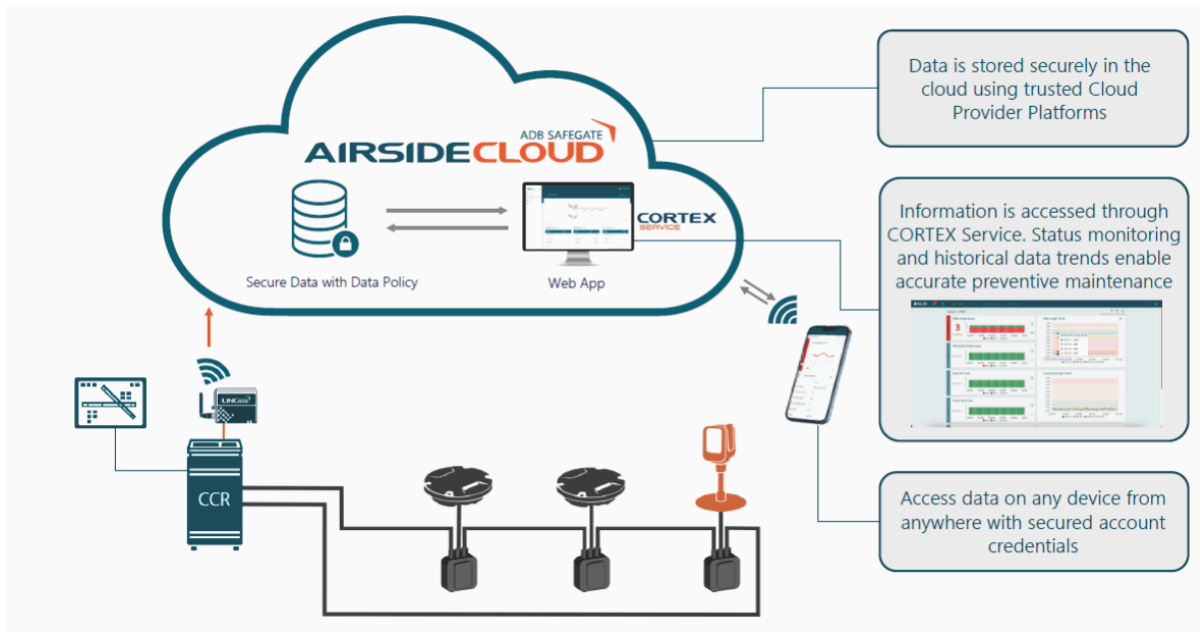


Figure 1. LINC Node CCR Connect



Figure 2. LINC Node PAPI Connect

Table 1: Overall System Specifications

Description	Specification
Operating Temperature	-30 °C to +75 °C
Operating Humidity	Max. 96 % RH
Dimensions	75 x 60 x 32 mm excluding connectors;

Description	Specification
Weight	158g
Vibration and Shock	Vibration spec: MIL-STD-810G, Method 514.6C, Category 4CWV (Composite Wheeled Vehicle); Mechanical shock spec: MIL-STD-810G, Method 516.6; Procedure I (Functional Shock)
ESD	8KV contact discharge, 15KV air discharge
Mounting Options	Bracket for screw/wall and DIN rail mounting
Input Voltage	4.75Vdc to 32Vdc
Connections	USB2.0 micro-B Ethernet variant: 10/100BASE Serial variant: RS-485 half-duplex Maximum baud rate: 115200 bit/s Maximum cable length: 25 meters at 115200 bit/s, 40 meters at 38400 bit/s.

Table 2: Compliance with RF Standards

Description	Specification
Air Interface	LTE Cat-M1/NB1, EDGE/GSM/GPRS
Frequency Bands	B1, B2, B3, B4, B5, B8, B12, B13, B17, B18, B19, B20, B26, B28
4G LTE	
3G UMTS/HSPA+	-
2G EDGE/GSM/GPRS	850, 900, 1800, 1900
Regulatory Approvals	FCC/IC, CE&RoHs, REACH, RCM, Safety IEC60950 -1, UL Listed, GCF, PCTRB
Radio Module	WP7702

Note: LINC Node is delivered with a SIM card on Cellular LWPA with private APN and has a 2G back-up connection. Most countries are included but check with your Sales Representative for coverage and certification.

Table 3: Compatible Devices

Device Version	Serial Connection	Ethernet Connection
MCR	Multiwire or Dual J-bus	-
CRE/VIS ¹²	EPS495 Multiwire or dual JBUS (min. RCB FW 1.07 required)	EPS495 needs additional Moxa serial/ethernet adapter
	EP00047	EP00047 (min. RCB FW 2.04 required)
ASG 8000i	All models	All models
LED PAPI ³⁴	2014 & 2018 model	-

Table 4: Ordering Codes

Part Number	Description
LN00E1	LINC Node, Ethernet Port can connect up to 16 devices
LN00S1	LINC Node, Serial Port can connect up to 16 devices
LN00P1	LINC Node, connects 1 LED PAPI

1 Always check with your local Sales team for your specific CCR interface compatibility, we recommend upgrading CRE/VIS to firmware v4.32/5.22

2 In case of redundant system use, one port will need to be made available for LINC Node.

3 LED PAPI may need a firmware upgrade to enable additional information upload.

4 LINC Node is powered by the PAPI. For continuous data connection, the PAPI needs to have current. "Black current" configuration is possible.