

# Dynamic Terminal Ku 8X8 V2

## Quick Start Installation Guide



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## Introduction

The *Quick Start Guide* provides basic information for installation, identification of connectors and visual indicators, as well as regulatory information for the hiSky IoT Dynamic Ku V2 Terminal.

## Product Description

The IoT Dynamic Ku 8X8 V2 Terminal is a compact form-factor device that enables on-the-move satellite connectivity to sensors/smartphones / IoT gateways. The terminal includes an innovative modem and phased array antennas with WI-FI / Bluetooth and Ethernet for user device interfaces. The terminal supports IoT data transmission such as fleet management data, environment conditions, alarm events, sensors loggers, operations, and much more, as well as command and control of sensors and remote systems.

## Related Documents

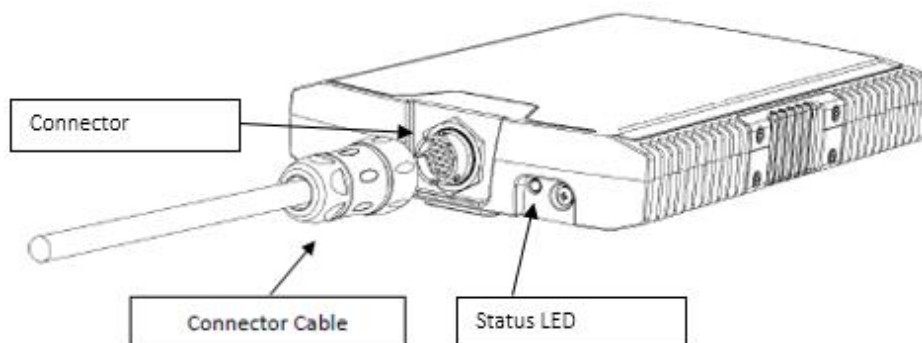
For information about related documents please navigate to <https://www.hiskysat.com>. hiSky strives to produce documentation that is technically accurate and easy to use. hiSky welcomes feedback. Send comments to [support@hiskysat.com](mailto:support@hiskysat.com).

## Getting Help

For answers to questions or for more information, contact hiSky support at [support@hiskysat.com](mailto:support@hiskysat.com).

## Terminal Overview

**WARNING:** Do not open the terminal or make any changes to the terminal construction. An opening may expose personnel to dangerous voltages or other hazards. There are no user-serviceable parts inside. Avoid placing the Terminal near open flames or any high heat.



Part	Description
Status LED	Off: Powered off
	Slow Flashing green: Searching for satellite (terminal initialization or tracking lost ).
	Fast Flashing green: registration process
	Solid Green: Service available (terminal locked/track and registered).
	Flashing Blue (every burst): Terminal transmit (toggle every half-second for 250 mil).
	Flashing red: No service due to registration problem
	Red: Power up / Failure
	Solid Blue: Recovery Mode
Connector	Circular connector 19 pin: DC, Ethernet, Serial – 232/485, Wake up I/O

The terminal kit contains the following items: IoT Dynamic Ku 8X8 V2 Terminal, and this *Quick Start Guide*. The kit does not include a bracket, screws, cables, or any other mechanical parts for the installation.

### Power Supply

Obtain the power cable from your supplier. Refer to the information in the “Power and Data Cable” section of this document for information about the power and data cable pinouts.

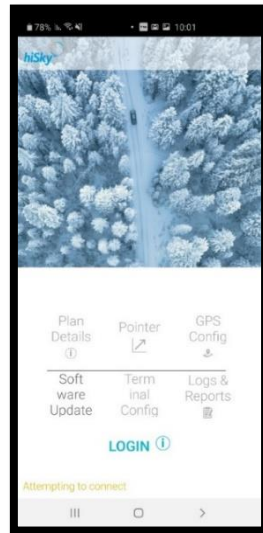
Only power up the system with one of the following options:

- AC to DC power supply - 12-24V, 48W DC jack 2.5X5.5MM.
- DC to AC inverter connected from the vehicle to AC to DC power supply.
- DC cable connected from a vehicle directly to the system 12V DC jack 2.5X5.5MM

**WARNING:** Both the power supply and the inverter must be certified for safety, electromagnetic compatibility, and all the regulations in the region where the terminal will operate. Follow all safety instructions according to the manufacturer of the power supply and inverter. A qualified technician should examine the risk of electrical shock and energy hazard of power supply and inverter failures according to manufacturer instructions.

## Overview of First Run Operation with the hiSky 360 App

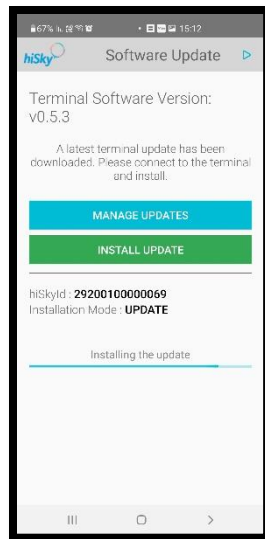
### 1. Initial Login:



- a) Confirm Internet connectivity to your smartphone for the initial Login and software download steps.
- b) Download the hiSky App from iPhone App Store or Android Google Play Store.
- c) Click on the hiSky360 App icon.
- d) Click LOGIN on the main screen.
- e) Add the account credentials (username and password) related to your hiSky360 account.
- f) Choose the NMS connection and tap LOGIN.

### 2. Software Update:

- a) On the main hiSky360 App screen, click on Software Update.
- b) Click Ok to continue with the software update process.
- c) Click on MANAGE UPDATES.
- d) Click on CHECK FOR UPDATES FROM NMS.
- e) Select the latest **Ku** software version for your terminal.
- f) Download the software files to your mobile app.
- g) Ensure the terminal's mounting side is facing down and connect the terminal to a power source.
- h) Connect your smartphone to the terminal WI-FI access point. The default SSID is the terminal serial number + the characters WF (for example 2970000000001WF). The default password is admin123.
- i) Wait for the application to attach to the terminal software. The status will initially show "Attempting". Wait until it shows "Connected" before proceeding with the upgrade.
- j) On the main hiSky App screen, click on SOFTWARE UPDATE.
- k) Click on INSTALL UPDATE.



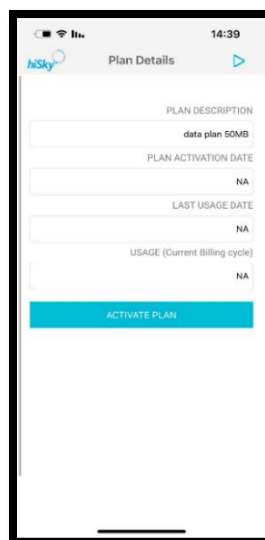
l) At the end of the update, the terminal will reboot.

### 3. Choose Satellite Parameters

- a) Connect your smartphone to the terminal WI-FI access point.
- b) Click on the GPS CONFIG on the hiSky main screen.
- c) Click on REFRESH and SAVE the location parameters.
- d) Return to the main screen and click on TERMINAL CONFIG.
- e) In the Satellite Parameters section, ensure that the correct beam number is being used. If not, select the relevant beam number.
- f) Click SAVE.
- g) Restart the terminal by pushing the power button. Ensure that the terminal's mounting side is up before restarting the terminal.
- h) Use the TERMINAL CONFIG button to integrate between the terminal and the User Device.

### 4. Active the service plan

- a) Connect your smartphone to the terminal's WI-FI access point.
- b) Login to the hiSky App via a terminal connection.
- c) On the main hiSky 360 App screen, click on Plan Details.
- d) Click the ACTIVE PLAN button and wait for confirmation.



### 5. Connect the Satellite and the Terminal

To establish connectivity between the satellite and the terminal, do the following:

- Place the terminal on level ground or tripod mount.
- Place the terminal in a clear line of sight between the terminal and the satellite. Any buildings, trees, people, or other objects in the path may interfere with connectivity.
- Wait for the status LED to turn solid green.

### 6. Install the Terminal:

**WARNING:** Improper installation can lead to the device falling causing serious personal injury or damage to equipment. The selected mounting solution must meet the local standard requirements.

The installer is responsible to make sure the installation will meet usage guidelines.

**WARNING:** Radio frequency hazard – keep a distance of at least 25 cm during terminal operation.

#### Mobile/On the move Installation:

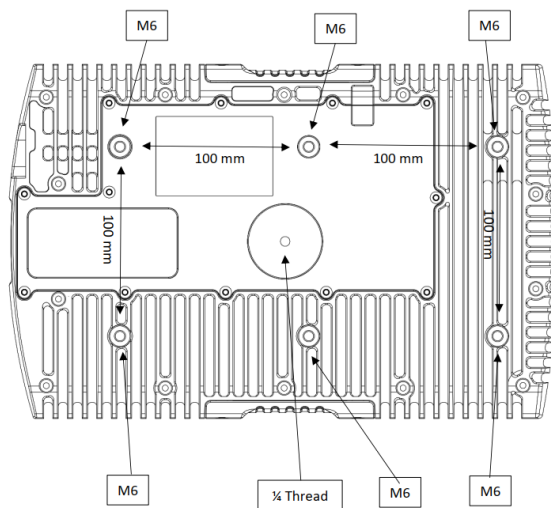
Terminal installation on a vehicle uses custom-made magnets or other mounting solutions, depending on the vehicle. For the most suitable solution, please contact your provider.

**WARNING:** The metal surface must be clean and straight, and all magnets should be firmly attached to the metal before driving. Before a drive, secure the power cable. Avoid driving fast on bumpy roads and in dangerous curves.

#### Fixed or Tripod Installation

Use the mounting interfaces described below, using at least the six M6 VESA 100X100 screws.

- ¼ Thread – Standard Tripod Mount.
- 100\*100 VESA mount M6 Threads.



## Troubleshooting

Issue	Workaround
WI-FI connection cannot be established between the smartphone and the terminal.	Make sure a WI-FI connection is available on the smartphone. Check for relevant integration instructions
Terminal cannot establish satellite connectivity (Slow Flashing Green).	Check the service plan status in the hiSky mobile app.
Unsuccessful registration to hiSky mobile app.	Internet connection is required for the initial Login.
LED is Flashing red	No service due to registration problem- Ensure initial registration to hiSky network and plan activation.

## IoT Dynamic Ku 8X8 V2 Terminal Specifications

Parameter	Value
Antenna Gain Rx & Tx@90°>	21dBi
Antenna Gain Rx & Tx@30°>	18dBi
Noise figure	2.5dB
Mechanical Dimensions	H / W / D: 291 / 187 / 42 mm
Weight	2.3Kg
Voltage range:	12-24 VDC
Sleep power consumption	10mW
Idle power consumption	10W
Receive only power consumption	24W
Max power consumption	48W
Operational Temperature	-20°C to 60°C // -4°F to +131°F
Dust and water ingress	IP67
Interfaces	Circular connector 19 pin DC, Ethernet, serial- 233,422, Wake up I/O
Transmit Antenna Frequency Range	13.75 GHz - 14.50 GHz
Receive Antenna Frequency Range	10.7 GHz - 12.75 GHz
GPS Frequency Range	1560MHz - 1610MHz
WLAN 2.4GHz Frequency Range	2412MHz - 2462MHz
Bluetooth Frequency Range	2402MHz - 2480MHz
MODEM Data Rate	6Kbps to 120Mbps

## Danger/Warning Symbol

**WARNING:** This symbol means danger! You are in a situation that could cause bodily injury. Before you work on any equipment, be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents

Waarschuwing: Dit waarschuwingssymbool betekent gevaar. U verkeert in een situatie die lichamelijk letsel kan veroorzaken. Voordat u aan enige apparatuur gaat werken, dient u zich bewust te zijn. Waarschuwing: Dit waarschuwingssymbool betekent gevaar. U verkeert in een situatie die lichamelijk letsel kan veroorzaken. Voordat u aan enige apparatuur gaat werken, dient u zich bewust te zijn van de bij elektrische schakelingen betrokken risico's en dient u op de hoogte te zijn van standaard maatregelen om ongelukken te voorkomen.

Varoitus: Tämä varoitusmerkki merkitsee vaaraa. Olet tilanteessa, joka voi johtaa ruumiinvammaan. Ennen kuin työskentelet minkään laitteiston parissa, ota selvää sähkökytkentöihin liittyvistä vaaroista ja tavanomaisista onnettomuuksien ehkäisykeinoista.

Attention: Ce symbole d'avertissement indique un danger. Vous trouvez dans une situation pouvant causer des blessures ou des dommages corporels. Avant de travailler sur un équipement, soyez conscient des dangers posés par les circuits électriques et familiarisez-vous avec les procédures couramment utilisées pour éviter les accidents.

Warnung: Dieses Warnsymbol bedeutet Gefahr. Sie befinden sich in einer Situation, die zu einer Körperverletzung führen könnte. Bevor Sie mit der Arbeit an irgendeinem Gerät beginnen, seien Sie sich der mit elektrischen Stromkreisen verbundenen Gefahren und der Standardpraktiken zur Vermeidung von Unfällen bewusst.

Avvertenza: Questo simbolo di avvertenza indica un pericolo. La situazione potrebbe causare infortuni alle persone. Prima di lavorare su qualsiasi apparecchiatura, occorre conoscere i pericoli relativi ai circuiti elettrici ed essere al corrente delle pratiche standard per la prevenzione di incidenti.

Advarsel: Dette varselsymbolet betyr fare. Du befinner deg i en situasjon som kan føre til personskade. Før du utfører arbeid på utstyr, må du være oppmerksom på de faremomentene som elektriske kretser innebærer, samt gjøre deg kjent med vanlig praksis når det gjelder å unngå ulykker.

Aviso: Este símbolo de aviso indica perigo. Encontra-se numa situação que lhe poderá causar danos físicos. Antes de começar a trabalhar com qualquer equipamento, familiarize-se com os perigos relacionados com circuitos eléctricos, e com quaisquer práticas comuns que possam prevenir possíveis acidentes.

¡Advertencia!: Este símbolo de aviso significa peligro. Existe riesgo para su integridad física. Antes de manipular cualquier equipo, considerar los riesgos que entraña la corriente eléctrica y familiarizarse con los procedimientos estándar de prevención de accidentes.

Varning!: Denna varningssymbol signalerar fara. Du befinner dig i en situation som kan leda till personskada. Innan du utför arbete på någon utrustning måste du vara medveten om farorna med elkretsar och känna till vanligt förfarande för att förebygga skador.

## Lightning Activity Warning

**WARNING:** Do not work on the system or connect or disconnect cables during periods of lightning activity.

Waarschuwing: Tijdens onweer dat gepaard gaat met bliksem, dient u niet aan het systeem te werken of kabels aan te sluiten of te ontkoppelen.

Varoitus: Älä työskentele järjestelmän parissa äläkä yhdistä tai irrota kaapeleita ukkosilmalla.

Attention: Ne pas travailler sur le système ni brancher ou débrancher les câbles pendant un orage.

Warnung: Arbeiten Sie nicht am System und schließen Sie keine Kabel an bzw. trennen Sie keine ab, wenn es gewittert.

Avvertenza: Non lavorare sul sistema o collegare oppure scollegare i cavi durante un temporale con fulmini.

Advarsel: Utfør aldri arbeid på systemet, eller koble kabler til eller fra systemet når det tordner eller lyner.

Aviso: Não trabalhe no sistema ou ligue e desligue cabos durante períodos de mau tempo (trovoada).



¡Advertencia!: No operar el sistema ni conectar o desconectar cables durante el transcurso de descargas eléctricas en la atmósfera.

Varning!: id åska skall du aldrig utföra arbete på systemet eller ansluta eller koppla loss kablar.

### Operating Temperature and Airflow Warning

**WARNING:** To prevent the unit from overheating, do not operate it in an area that exceeds the maximum recommended ambient temperature as defined in the Mechanical and Environmental Specifications table. To prevent airflow restrictions, allow approximately 6 inches (15.2 cm), or adequate space, for clearance around the external heat sink fins.

Waarschuwing: Om te voorkomen dat de eenheid oververhitting, werken niet het in een gebied dat groter is dan het maximaal aanbevolen omgevingstemperatuur zoals gedefinieerd in de tabel mechanische en milieutechnische specificaties. Om te voorkomen dat beperkingen van de luchtstroom, toestaan ten minste 6 cm (15.2 cm) van de voor goedkeuring rond afsluiten van de ventilatieopeningen.

Varoitus: Jotta yksikön ylikuumenemisesta, eivät toimi sen alueella, joka ylittää suositellut alhaisessa ympäristön lämpötilassa, mekaaniset ja ympäristövaatimusten-taulukossa määritellyt. Rajoittavia rajoituksia estämiseksi antaa vähintään 6 tuumaa (15.2 cm) ympärille ilmanvaihtouukot.

Attention: Pour empêcher l'unité de surchauffe, ne fonctionnent pas il dans une zone qui dépasse le maximum recommandé la température ambiante, tel que défini dans le tableau mécanique et spécifications environnementales. Pour éviter des restrictions de circulation d'air, permettre au moins 6 pouces (15,2 cm) de dégagement autour des ouvertures de ventilation.

Warnung: Um das Gerät vor Überhitzung zu verhindern, bedienen Sie nicht es in einem Gebiet, das überschreitet die maximal Empfohlene Umgebungstemperatur, wie in der Tabelle mechanischen und umweltbezogenen Spezifikationen definiert. Um Luftstrom Einschränkungen zu verhindern, können Sie mindestens 6 Zoll (15,2 cm) von Freiraum um die Lüftungsöffnungen.

Avvertenza: Per evitare che l'unità dal surriscaldamento, non operare in un'area che supera il valore massimo consigliato temperatura ambiente come definito nella tabella specifiche ambientali e meccaniche. Per evitare le restrizioni del flusso d'aria, consentire almeno 6 pollici (15,2 cm) di spazio intorno alle aperture di ventilazione.

Advarsel: Hvis du vil hindre at enheten overoppheting, operere ikke det i et område som overskrider maksimalt anbefalte omgivelsestemperatur som definert i tabellen mekanisk og miljømessige spesifikasjoner. Hvis du vil hindre at luftstrømmen restriksjoner, kan du minst 6 tommer (15.2 cm) klaring rundt til ventilasjonsåpningene.

Aviso: Para evitar que a unidade de superaquecimento, não operá-lo em uma área que excede o máximo recomendado a temperatura ambiente, conforme definido na tabela de especificações ambientais e mecânica. Para evitar restrições de fluxo de ar, deixe pelo menos 6 polegadas (15,2 cm) de espaço ao redor das aberturas de ventilação.

¡Advertencia!: Para evitar que la unidad se recaliente, no operan en un área que supera el máximo recomendado de temperatura tal como se definen en la tabla de especificaciones ambientales y mecánicas. Para evitar las restricciones de flujo de aire, deje por lo menos 6 pulgadas (15,2 cm) de espacio libre alrededor de las aberturas de ventilación.

Varning!: Om du vill förhindra att enheten överhettning, inte bruka det i ett område som överskrider den maximala rekommenderade omgivande temperatur som definierats i tabellen mekanisk och miljöspecifikationer. Om du vill förhindra att luftflödet begränsningar, tillåta att minst 6 tum (15,2 cm) i det fria utrymmet runt ventilationsöppningarna.

### Installation Warning

**WARNING:** Read the installation instructions before connecting the system to the power source.

Waarschuwing: Raadpleeg de installatie-aanwijzingen voordat u het systeem met de voeding verbindt.

Varoitus: Lue asennusohjeet ennen järjestelmän yhdistämistä virtälähteeseen.

Attention: Avant de brancher le système sur la source d'alimentation, consulter les directives d'installation.

Warnung: Lesen Sie die Installationsanweisungen, bevor Sie das System an die Stromquelle anschließen.

Avvertenza: Consultare le istruzioni di installazione prima di collegare il sistema all'alimentatore.

Advarsel: Les installasjonsinstruksjonene før systemet kobles til strømkilden.

Aviso: Leia as instruções de instalação antes de ligar o sistema à sua fonte de energia.

¡Advertencia!: Ver las instrucciones de instalación antes de conectar el sistema a la red de alimentación.

Varning!: Läs installationsanvisningarna innan du kopplar systemet till dess strömförsörjningsenhet.

### Power Supply Circuit Warning

**WARNING:** Care must be given to connecting units to the supply circuit so that wiring is not overloaded.

Waarschuwing: Let erop dat de toestellen op voedingscircuits worden aangesloten zonder het vermogen van de bed rading te overschrijden.

Varoitus: Laiteyksiköt on yhdistettävä huolellisesti syöttöpiiriin niin, että johdot eivät ole ylikuormitettuja.

Avertissement: Veillez à bien connecter les unités au circuit d'alimentation afin de ne pas surcharger les connections.

Achtung: Beim Anschließen der Geräte an das Stromnetz ist darauf zu achten, daß die Schaltverbindungen nicht überlastet werden.

Avvertenza: Fare attenzione quando si collegano le unità al circuito di alimentazione, per non sovraccaricare i cablaggi.

Advarsel: Vær nøye med å koble enheter til strømforsyningskretsen slik at ledningene ikke overbelastes.

Aviso: Deverá ter precaução ao ligar unidades ao circuito de fornecimento de energia, para não sobrecarregar a instalação.

¡Atención!: Poner mucho cuidado al conectar los equipos al circuito de alimentación a fin de no sobrecargar el cableado.

Varning!: Var noga vid anslutning av enheter till matarströmkretsen så att ledningarna inte överbelastas.

### Agency Compliance

For detailed information on standards, see <https://www.hiskysat.com/Product Documentation>.

Pour des informations détaillées sur les normes, voir <https://www.hiskysat.com/Product Documentation>.

### FCC Compliance

#### Part 15 Compliance

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to 47CFR Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. The equipment uses, generates, and radiates radiofrequency energy. If the equipment is not installed and used by the instructions, it may cause harmful interference to radio communications. There is also no guarantee that interference will not occur in a particular installation. To determine if the equipment is interfering with radio or television reception, remove or apply power to the equipment and see if the interference goes away, or returns, when the unit is off or on.

To meet FCC requirements, only peripherals, such as computer input/output devices, terminals, and printers certified to comply with the Class B limits, may be attached to this device. Operation with non-certified peripherals is likely to result in interference to radio and TV reception.

To meet FCC requirements, shielded cables are required to connect the device to a personal computer, peripheral, or other Class B certified device.

**WARNING:** Modification of this equipment without written authorization from hiSky may result in this equipment no longer complying with FCC requirements for Class B digital devices. In that event, the rights

to use the equipment may be limited by FCC regulations, and the user may be required to correct any interference to radio or television communications at their own expense.

### **Safety**

TUV Rheinland of North America is a Nationally Recognized Testing Laboratory (NRTL) in the United States and is accredited by the Standards Council of Canada to test and certify products to Canadian National Standards. The Dynamic Terminal Ku 8X8 V2 complies with both U.S. and Canadian National Standards on Safety.

In addition, the Dynamic Terminal Ku 8X8 V2 complies with EU National Standards on Safety.

### **Compliance with RoHS Directive**

Details can be found on the hiSky Web site located at <https://www.hiskysat.com/Product Documentation>.

### **Compliance with WEEE Directive**

When hiSky products have reached the end of their useful life, hiSky distributors will be responsible for making provisions for the treatment of such WEEE using authorized approved treatment facilities.

Please contact the distributor directly.

### **Canadian Labeling Requirements**

The Dynamic Terminal Ku 8X8 V2 complies with Class B of Canadian ICES-003 regulations. CAN ICES-3 B/NMB-3B.

Le IoT Dynamic Terminal Ku 8X8 V2 est conforme à la classe B de la réglementation canadienne ICES-003. CAN ICES-3 B/NMB-3B.

### **CE Compliance (European Union)**

hiSky declares that the radio equipment type Dynamic Terminal Kau 8X8 V2 is in compliance with Directive 2014/53/ EU. The full text of the EU declaration of conformity is available at <https://www.hiskysat.com/Product Documentation>.