

快速入門指南

FortiGate Rugged 70F 系列

FGR-70F和 FGR-70F-3G4G

在你開始使用之前

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本指南涵蓋：FGR-70F, FGR-70F-3G4G


2023 年 4 月 3 日

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要 點

默認登錄

 <https://192.168.1.99>
用戶名：*admin*
密碼：*留空*

Fortinet 文檔庫

如需詳細的管理指南、最新的硬體文檔和參考手冊，請訪問 <https://docs.fortinet.com/>

客戶服務

有關合同、許可、產品註冊和帳戶管理，請聯繫 FortiCare 支持，
網址為 <https://www.fortinet.com/support/contact>

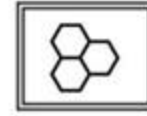
技術支援

要訪問我們的資源中心、專業服務和技術支持服務，
請訪問 <https://www.fortinet.com/support>

感謝您選擇Fortinet

包裝內容

FortiGate Rugged 70F 系列
eFGR-70F, FGR-70F-3G4G



1 個堅固的設備



1x 快速入門指南



1x CAT5e 乙太網電纜



1xDIN導軌支架帶螺絲(3x M3x10)



1x 數位 I/O 模塊



1x 直流電源連接器



3x LTE/GPS 天線
(僅限 3G4G 型號)

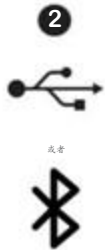
設置

打開包裝盒，為設備供電並選擇以下選項之一：

FortiExplorer



1
掃描二維碼以便
安裝



2

或

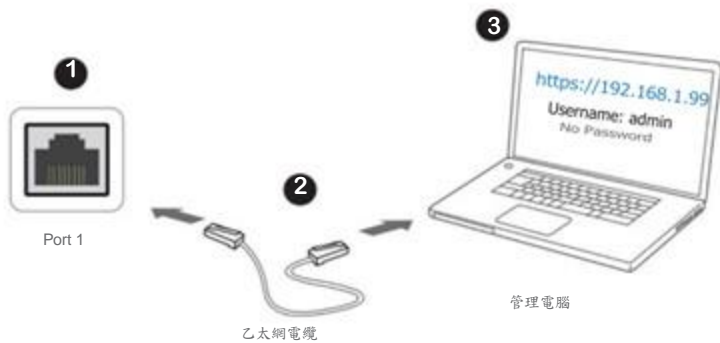


3

按照屏幕上的
指示

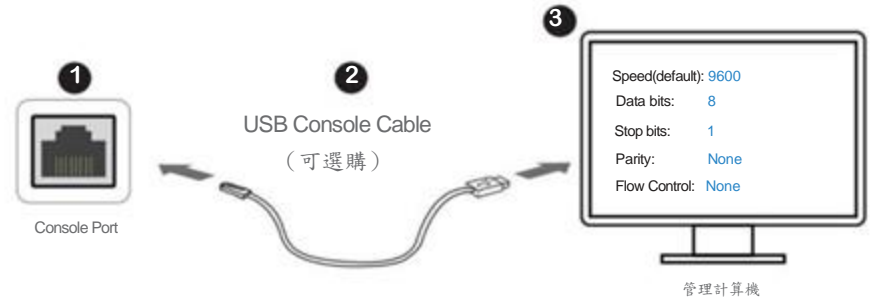
備註：在移動設備上啟用藍牙以使用BLE或將移動設備的 USB 數據線連接到設備

GUI



備註：配置管理電腦IP為192.168.1.x，子網為255.255.255.0

命令行界面



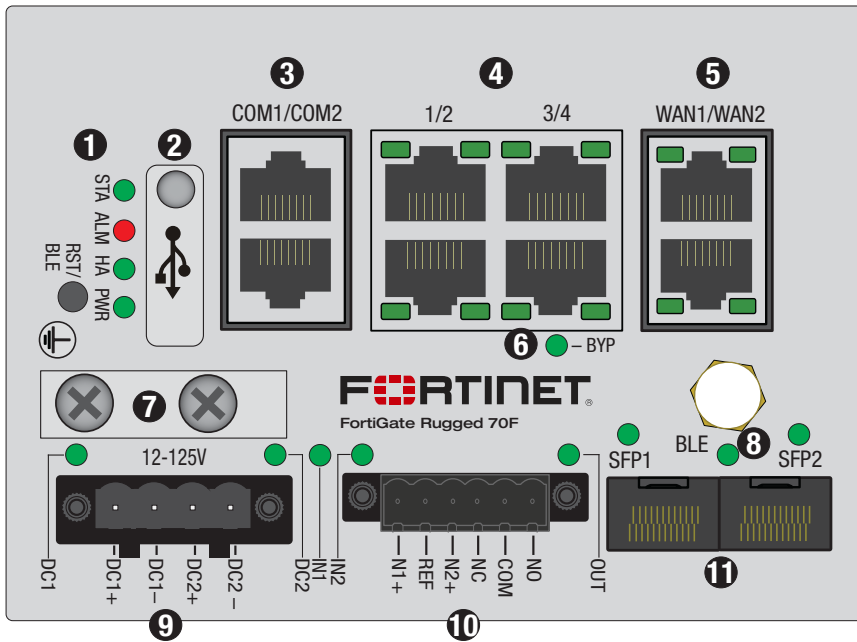
備註：有關詳細的 CLI 指南，請訪問docs.fortinet.com

FortiGate Cloud



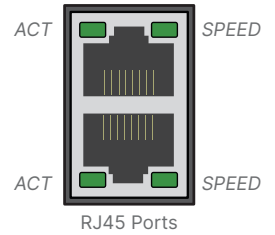
備註：瀏覽到forticloud.com 並按照螢幕上的說明進行操作

Front - FGR-70F



- 1 STA**
 - **Green:** Operating normally
 - **Flashing Green:** Device resetting
 - **Red:** Device error
- ALM**
 - **Red:** Major alarm detected
 - **Amber:** Minor alarm detected
 - **Off:** No alarm detected
- HA**
 - **Green:** HA enabled (normal)
 - **Red:** HA enabled (failover)
 - **Off:** HA disabled
- PWR**
 - **Green:** Power detected
 - **Off:** Power not detected
- BLE/RST** Activates BLE management or restores to factory default
- 2 USB (USB 2.0) Server port**
- 3 COM1 (RJ45) Console**
(Top Port)
- COM2 (RJ45) Serial Data**
(Bottom Port)

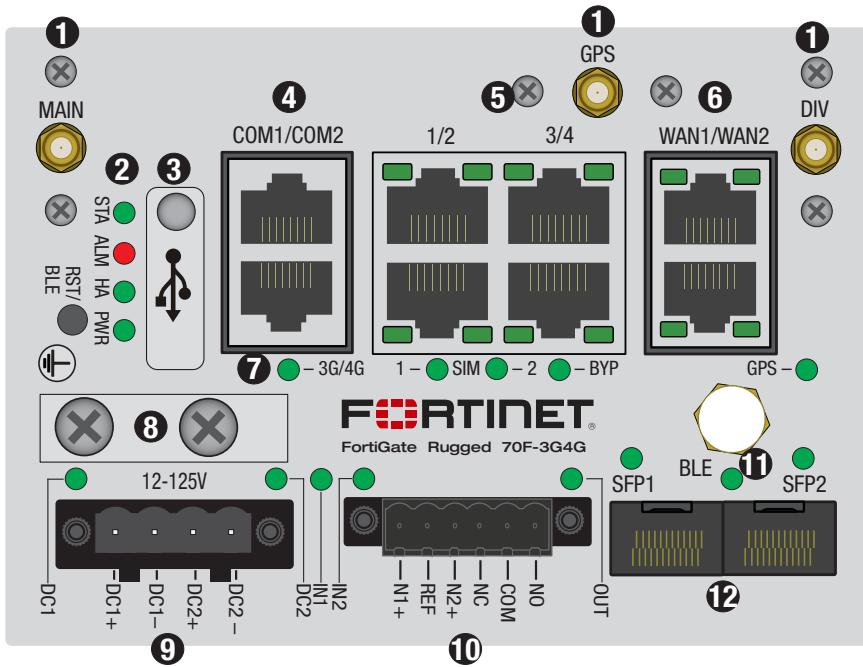
- 4 Ports 1 to 4 (RJ45)**
 - **Green:** Connected at 1000Mbps
 - **Amber:** Connected at 100Mbps
 - **Off:** No link established or connected at 10Mbps
 - **Green:** Link established, no activity
 - ACT **Flashing Green:** Data activity
 - **Off:** No link established
- 5 WAN1 & WAN2 Ports (RJ45)**
 - **Green:** Connected at 1000Mbps
 - **Amber:** Connected at 100Mbps
 - **Off:** No link established or connected at 10Mbps
 - **Green:** Link established, no activity
 - ACT **Flashing Green:** Data activity
 - **Off:** No link established



- 6 Bypass Status**
 - **Green:** PHY mode
 - **Red:** Bypass mode
- 7 Earth Ground optional connection**
- 8 BLE**
 - **Blue:** BLE connected
 - **Flashing Blue:** BLE active
 - **Off:** BLE off
- 9 Power Terminals (DC1 & DC2) Redundant failover, 12V to 125V DC, 2A Max**
(Note: Alarm disabled by default in the OS. Wire range is 30 - 16 AWG)
 - **Green:** Power detected
 - **Red:** Alarm is on; no power detected
 - **Off:** No power detected
- 10 Digital I/O Connector software-defined alarms. See page 17 for details.**

Input (IN1 & IN2) <ul style="list-style-type: none"> ● Green: Alarm defined, not detected ● Red: Alarm detected ● Off: Alarm not defined 	Output(OUT) <ul style="list-style-type: none"> ● Green: Alarm defined, not detected ● Flashing Red: Major output alarm ● Red: Minor output alarm ● Off: No output alarm detected
---	---
- 11 SFP1 & SFP2 (SFP)**
 - **Green:** Connected at 1000Mbps
 - **Flashing Green:** Data activity
 - **Off:** No link established

Front - FGR-70F-3G4G



1 Antenna Connection (3x SMA) WWAN and GPS antenna connections

2 STA

- **Green:** Operating normally
- **Flashing Green:** Device resetting
- **Red:** Device error

ALM

- **Red:** Major alarm detected
- **Amber:** Minor alarm detected
- **Off:** No alarm detected

HA

- **Green:** HA enabled (normal)
- **Red:** HA enabled (failover)
- **Off:** HA disabled

PWR

- **Green:** Power detected
- **Off:** Power not detected

BLE/RST Activates BLE management or restores to factory default

3 USB (USB 2.0) Server port

4 COM1 (RJ45) Console (Top Port)

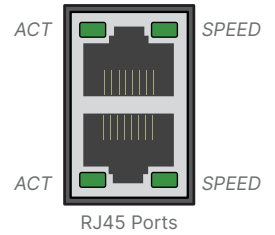
COM2 (RJ45) Serial Data (Bottom Port)

5 Ports 1 to 4 (RJ45)

- **Green:** Connected at 1000Mbps
 - **Amber:** Connected at 100Mbps
 - **Off:** No link established or connected at 10Mbps
- SPEED**
- **Green:** Link established, no activity
 - **Flashing Green:** Data activity
 - **Off:** No link established
- ACT**

6 WAN1 & WAN2 Ports (RJ45)

- **Green:** Connected at 1000Mbps
 - **Amber:** Connected at 100Mbps
 - **Off:** No link established or connected at 10Mbps
- ACT**
- **Green:** Link established, no activity
 - **Flashing Green:** Data activity
 - **Off:** No link established



7 3G4G & Bypass Status

3G/4G

- **Green:** 4G service on
- **Amber:** 3G service on
- **Off:** 3G/4G service off

BYP

- **Green:** PHY mode
- **Red:** Bypass mode

SIM 1 & 2

- **Green:** SIM active
- **Off:** SIM not active

GPS

- **Green:** GPS enabled
- **Off:** GPS disabled

8 Earth Ground optional connection

9 Power Terminals (DC1 & DC2) Redundant failover, 12V to 125V DC, 2A Max

(Note: Alarm disabled by default in the OS. Wire range is 30 - 16 AWG)

- **Green:** Power detected
- **Red:** Alarm is on; no power detected
- **Off:** No power detected

10 Digital I/O Connector software-defined alarms. See page 17 for pinout.

Input (IN1 & IN2)

- **Green:** Alarm defined, not detected
- **Red:** Alarm detected
- **Off:** Alarm not defined

Output(OUT)

- **Green:** Alarm defined, not detected
- **Flashing Red:** Major output alarm
- **Red:** Minor output alarm
- **Off:** No output alarm detected

11 BLE

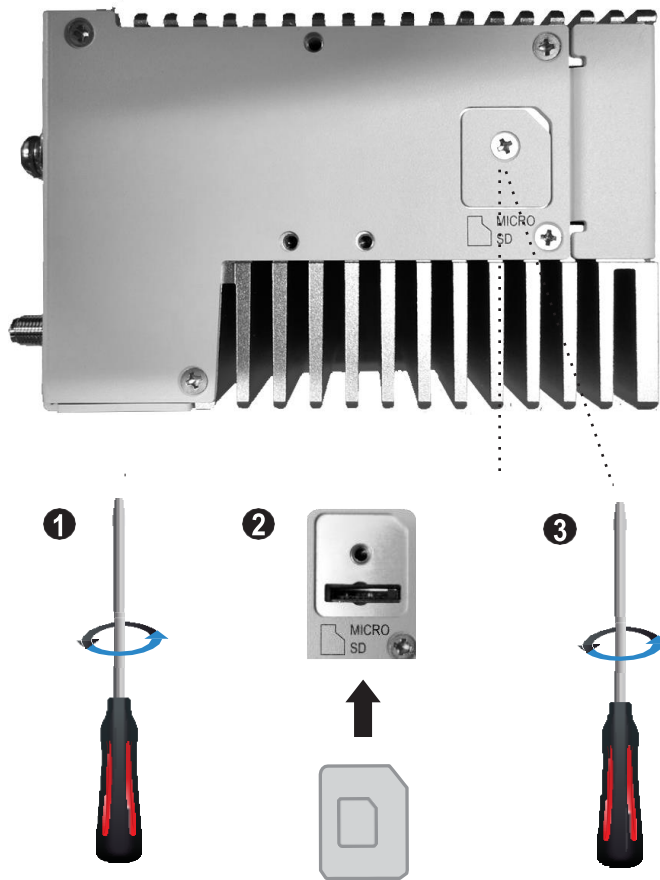
- **Blue:** BLE connected
- **Flashing Blue:** BLE active
- **Off:** BLE off

12 SFP1 & SFP2 (SFP)

- **Green:** Connected at 1000Mbps
- **Flashing Green:** Data activity
- **Off:** No link established

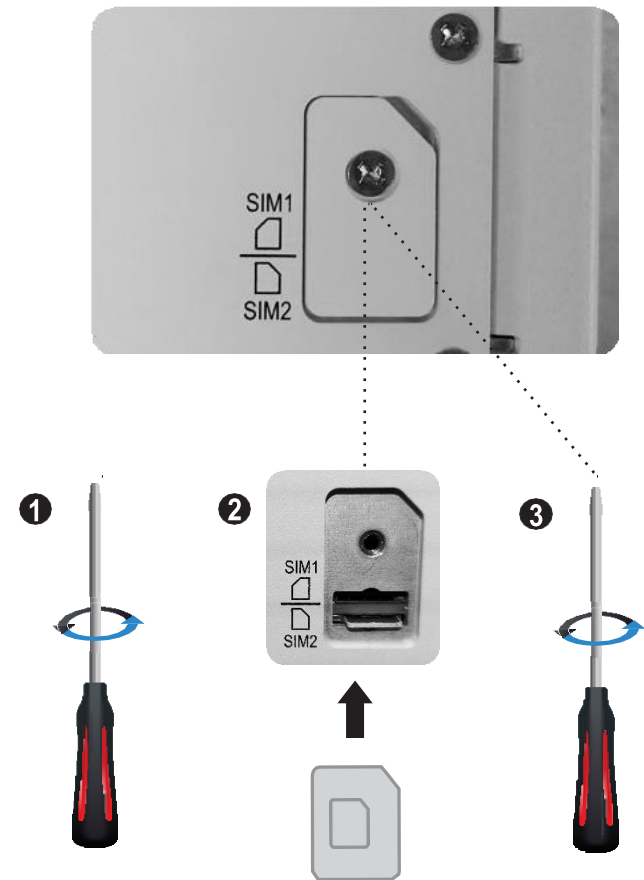
MICRO SD Slot - FGR-70F 系列

警告：在FGR-70F系列設備上安裝/卸載SD卡時，請關閉電源，因為該系列不支援熱插拔。



SIM Slots - FGR-70F-3G4G

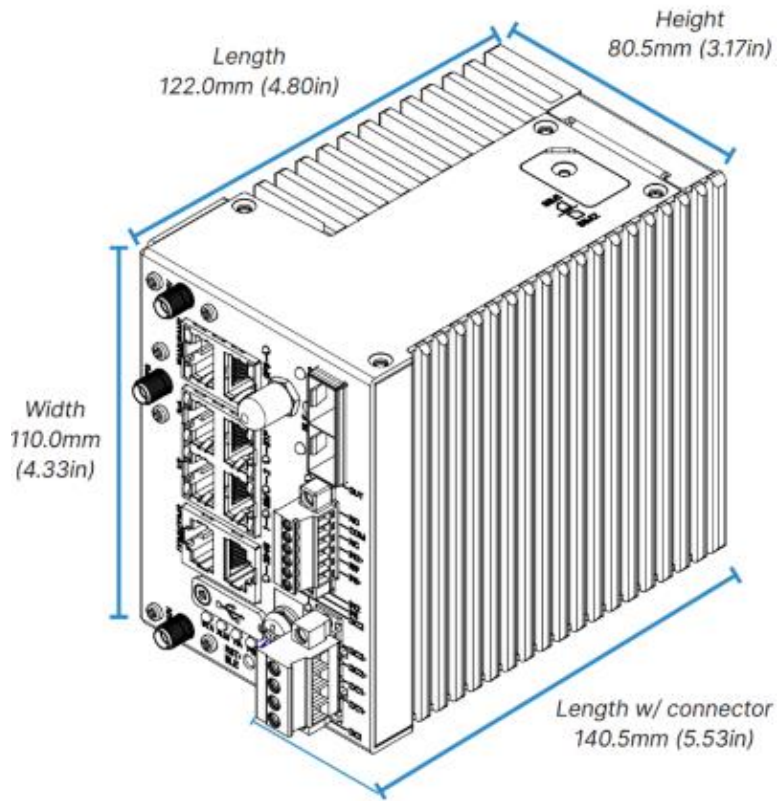
備註：有關無線廣域網路配置訊息，請參考 docs.fortinet.com 上的 Admin Guide。



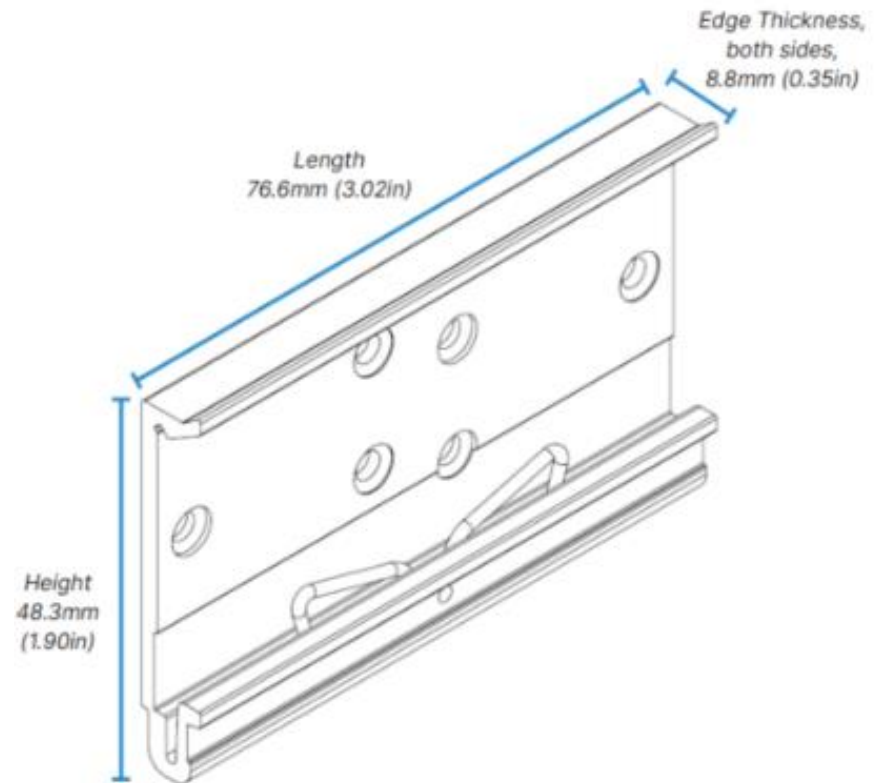
備註：SIM1 是主要卡，SIM2 是次要卡。

尺寸

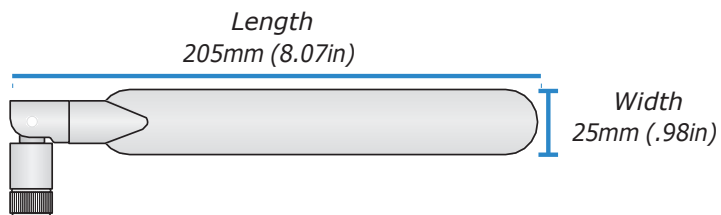
FGR-70F 和 FGR-70F-3G4G 具有相同的機殼尺寸。



FGR-70F 和 FGR-70F-3G4G 共享相同的 DIN 支架。



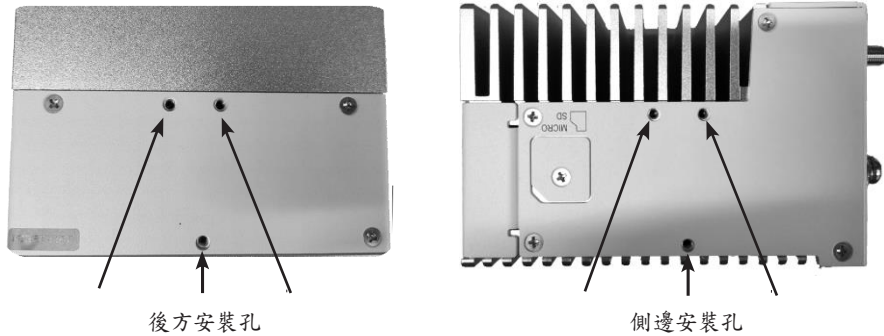
關於 FGR-70F-3G4G 的天線尺寸如下



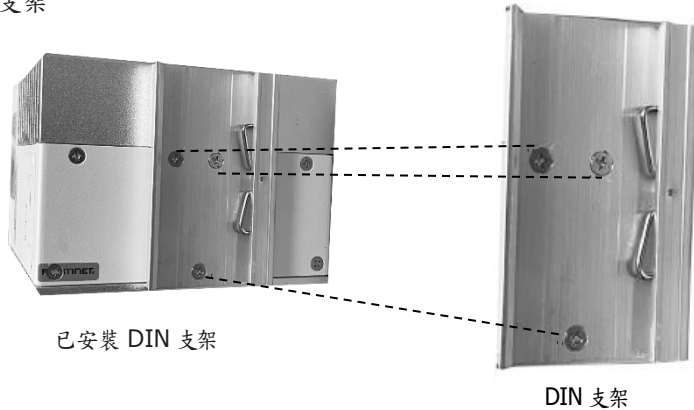
備註：DIN 板的厚度為 2.4mm (0.09in)。

DIN 安裝

FGR-70F系列使用提供的螺絲和DIN支架（圖片僅顯示3個安裝孔）安裝在設備的側面或後部。



1 固定支架



2 將設備安裝到導軌上



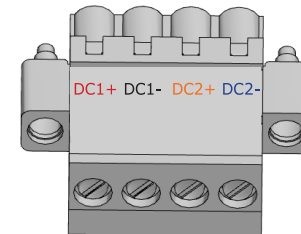
已安裝在導軌上

電源安裝

警告

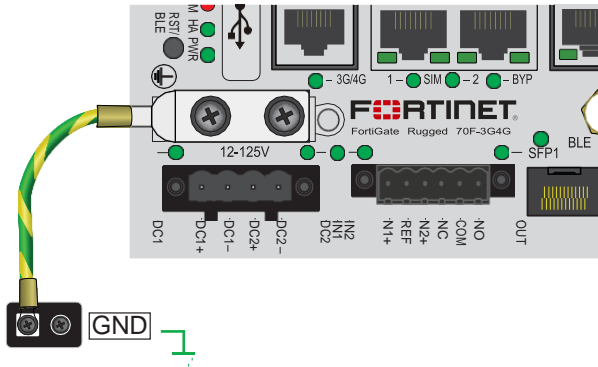
- 雙冗餘直流輸入支援負極接地(+12V至+125V DC)和正極接地(-12V至-125V DC)。
- DC1+ 和 DC2+ 是高電壓位電腳，而 DC1- 和 DC2- 則是低電壓位電腳。
- 請勿將DC+端子連接到低於DC-端子的電位。
- DC+ 和 DC- 之間的電壓必須為 +12V 至 +125V DC。請諮詢專業電工安裝該設備，確定適合的電線規格和長度。
- DC端子塊的最大電線規格為12 AWG，最小為30 AWG。
- 選擇性但建議的，使用接地板或接地螺絲連接地線接地。

1. 將設備端子塊上的DC1+或DC2+連接到直流電源，然後將端子塊上的負極DC1-或DC2-連接起來。

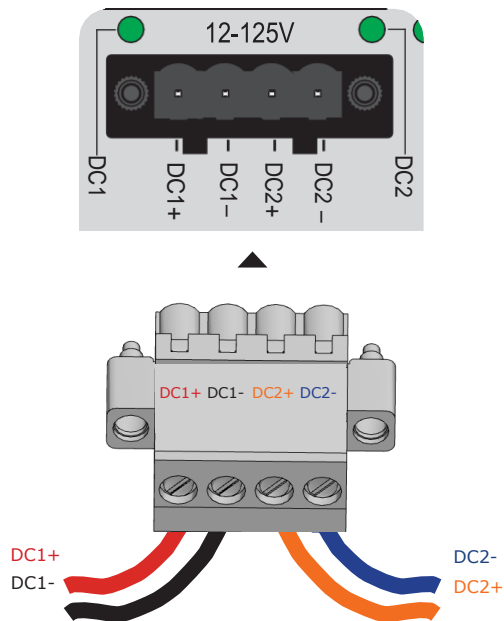


DC Input Power	DC+ Terminal	DC- Terminal
Negative Ground	+12V to +125V DC	Ground
Positive Ground	Ground	-12V to -125V DC

- 選用 - 將設備的接地端子固定到機殼接地或地球接地。



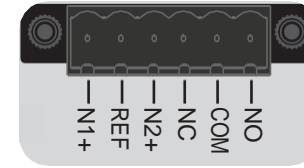
- 將接好線的電源連接器插入設備上的端子塊中。



選用：FGR-70F系列具有可選的雙重DC輸入，以實現故障切換冗餘。
如果一個DC輸入發生故障，第二個輸入將提供電源。

數位I/O連接器

請參考 [Admin Guide](#) 已取得配置設定的相關訊息。



Connector	Description
N1+	Alarm Input 1
REF	Alarm Input 1/2 Reference Ground
N2+	Alarm Input 2
NC	Normally Closed terminal
COM	Common terminal
NO	Normally Open terminal

BIOS 選項

FortiGate Rugged 70F在BIOS選單中提供了一個選項，可以將CPU速度從高性能模式（默認）設置為低功耗模式。

- 在開機過程中，當提示時按下任意鍵進入BIOS。
- 輸入F以設置CPU頻率，然後按照螢幕上的指示進行操作。
- 按兩次Q鍵退出並繼續開機過程。

備註：有關更多的訊息，請參閱在docs.fortinet.com的admin guide。

Cautions and Warnings

Environmental specifications

Ambient operating temperature: -40°C to 75°C

Refer to specific Product Model Data Sheet for Environmental Specifications (Operating Temperature, Storage Temperature, Humidity, and Altitude)

Référez à la Fiche Technique de ce produit pour les caractéristiques environnementales (Température de fonctionnement, température de stockage, humidité et l'altitude).

Safety

Warning: Equipment intended for installation in Restricted Access Location.
Avertissement: Le matériel est conçu pour être installé dans un endroit où l'accès est restreint.

A skilled person must install the equipment.
L'équipement doit être installé par une personne qualifiée.

Grounding — To prevent damage to your equipment, connections that enter from outside the building should pass through a lightning / surge protector, and be properly grounded. Use an electrostatic discharge workstation (ESD) and/or wear an anti-static wrist strap while you work. In addition to the grounding terminal of the plug, on the back panel, there is another, separate terminal for earthing.

Mise à la terre — Pour éviter d'endommager votre matériel, assurez-vous que les branchements qui entrent à partir de l'extérieur du bâtiment passent par un parafoudre / paratenseur et sont correctement mis à la terre. Utilisez un poste de travail de décharge électrostatique (ESD) et / ou portez un bracelet anti-statique lorsque vous travaillez. Ce produit possède une borne de mise à la terre qui est prévu à l'arrière du produit, à ceci s'ajoute la mise à la terre de la prise.

This product has a separate protective earthing terminal provided on the back of the product in addition to the grounding terminal of the attachment plug. This separate protective earthing terminal must be permanently connected to earth with a green with yellow stripe conductor minimum size # 14 AWG and the connection is to be installed by a qualified service personnel. Ce produit a une borne de mise à la terre séparée sur le dos de l'appareil, en plus de la borne de mise à la terre de la fiche de raccordement. Cette borne de mise à la terre séparée doit être connecté en permanence à la terre avec un conducteur vert avec la taille bande jaune de minimum # 14 AWG et la connexion doit être installé par un personnel qualifié.

Regulatory Notices

Federal Communication Commission (FCC) – USA

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.

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 it is not installed and used in accordance with the instruction manual, it 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 own expense.

WARNING: Any changes or modifications to this product not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator and your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Industry Canada Equipment Standard for Digital Equipment (ICES) – Canada

CAN ICES-003 (A) / NMB-003 (A)

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Cet appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe A prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

Innovation, Science and Economic Development (ISED) – Canada

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

1. This device may not cause interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique 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;
2. L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

This equipment complies with ISED radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

Cet équipement est conforme aux limites d'exposition aux rayonnements ISED établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de 20cm de distance entre la source de rayonnement et votre corps.

This radio transmitter (IC: 7280B-2401T25) has been approved by ISED to operate with the antenna types listed below with the maximum permissible gain and required antenna impedance for each antenna type indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

Le présent émetteur radio (IC: 7280B-2401T25) a été approuvé par ISED pour fonctionner avec les types d'antenne énumérés ci-dessous et ayant un gain admissible maximal et l'impédance requise pour chaque type d'antenne. Les types d'antenne non inclus dans cette liste, ou dont le gain est supérieur au gain maximal indiqué, sont strictement interdits pour l'exploitation de l'émetteur.

This device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter except in accordance with IC multi-transmitter product procedures.

Cet appareil et son antenne (s) ne doit pas être co-localisés ou fonctionner en association avec une autre antenne ou transmetteur.

Antenna type	Connector	Gain (dBi)	Network
Monopole	I-PEX	1.53	Bluetooth

European Conformity (CE) - EU

This is a Class A product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.



The product transmits within the frequency ranges and less than or equal to the power listed below:

Standard	Frequency Range	Max. Transmit Power
Bluetooth	2402-2480 MHz	10 dBm (EIRP)

For FQR-70F-3G4G:
WCDMA B1 less than 24dBm
WCDMA B8 less than 24dBm
LTE B1 less than 24dBm
LTE B3 less than 24dBm
LTE B7 less than 23dBm
LTE B8 less than 24dBm
LTE B20 less than 24dBm
LTE B28 less than 24dBm
LTE B42 less than 23dBm
LTE B43 less than 23dBm

This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

Simplified EU Declaration of Conformity

This declaration is only valid for Fortinet products (including combinations of software, firmware and hardware) provided by Fortinet or Fortinet's authorized partners to the end-customer directly for use within the EU or countries that have implemented the EU Directives and/or spectrum regulation. Any Fortinet products not obtained directly from Fortinet or Fortinet's authorized partners may not comply with EU Directives and Fortinet makes no assurances for such products.

Български

Този продукт е в съответствие с Директива 2014/53/ЕО.

Česky

Tento produkt je v souladu se směrnici 2014/53/EU.

Dansk

Denne produkt er i overensstemmelse med direktiv 2014/53/EU.

Deutsch

Dieses Produkt entspricht der Richtlinie 2014/53/EU.

Eesti

See toode vastab direktiivile 2014/53/EL.

English

This product is in compliance with Directive 2014/53/EU.

Español

Este producto cumple con la Directiva 2014/53/UE.

Ελληνική

Το προϊόν αυτό συμμορφώνεται με την Οδηγία 2014/53/ΕΕ.

Français

Ce produit est conforme à la Directive 2014/53/UE.

Hrvatski

Ovaj proizvod je u skladu s Direktivom 2014/53/EU.

Italiano

Questo prodotto è conforme alla Direttiva 2014/53/UE.

Latviski

Šis produkts atbilst Direktīvai 2014/53/ES.

Lietuvių

Šis gaminy s atitinka direktyvą 2014/53/ES.

Malti

Dan il-prodott huwa konformi mad-Direttiva 2014/53/UE.

Magyar

Ez a termék megfelel a 2014/53/EU Irányelvnek.

Nederlands

Dit product is in overeenstemming met Richtlijn 2014/53/UE.

Norsk

Denne produktet er i samsvar med direktiv 2014/53/UE.

Polski

Ten produkt jest zgodny z dyrektywą 2014/53/UE.

Português

Este produto está em conformidade com a Diretiva 2014/53/UE.

Rumunski

Acest produs este în conformitate cu Directiva 2014/53/UE.

Slovensky

Tento produkt je v súlade so smernicou 2014/53/UE.

Slovensko

Ta izdelšek je v skladu z Direktivo 2014/53/UE.

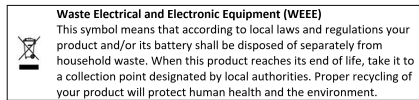
Suomi

Tämä tuote on direktiivin 2014/53/EU mukainen.

Svenska

Denna produkt överensstämmer med direktiv 2014/53/UE.

Note: The full Declaration of Conformity for this product is available in the link below:
<https://site.fortinet.com/ProductRegulatory/EU>



UK Conformity Assessed (UKCA) – United Kingdom

The product transmits within the frequency ranges and less than or equal to the power listed below:

Standard	Frequency Range	Max. Transmit Power
Bluetooth	2402-2480 MHz	10 dBm (EIRP)

For FGR-70F-3G4G:
WCDMA B1 less than 24dBm
WCDMA B8 less than 24dBm
LTE B1 less than 24dBm
LTE B3 less than 24dBm
LTE B7 less than 23dBm
LTE B8 less than 24dBm
LTE B20 less than 24dBm
LTE B28 less than 24dBm
LTE B42 less than 23dBm
LTE B43 less than 23dBm

This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

This product is in compliance with Statutory Instrument 1206 Radio Equipment Regulations 2017

The full Declaration of Conformity for this product is available in the link below:
<https://site.fortinet.com/ProductRegulatory/UK>

Voluntary Control Council for Interference (VCCI) – Japan

この装置は、クラスA 機器です。この装置を住宅環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

VCCI-A

Bureau of Standards Metrology and Inspection (BSMI) – Taiwan

The presence conditions of the restricted substance (BSMI RoHS table) are available at the link below:

限用物質含有情況表 (RoHS Table) 請到以下 網址下載：

<https://www.fortinet.com/bsmi>

警告： 為避免電磁干擾，本產品不應安裝或使用於住宅環境。

請仔細閱讀以下說明

本設備勿置於潮濕處。

連接至電源前，請先檢查電壓。

當設備不用時，請將所有電源線拔除，避免電壓不穩而造成傷害。

勿將任何液體灑入設備中，避免線路短路。

基於安全理由，只有受到專業訓練的從業人員，才可以打開本設備。

請勿自行調整或修理已通電的設備，以確保您的安全。

如不小心受傷，請立刻找急救人員給予您適當的救護，千萬別因傷勢輕微而忽略自己的傷勢。

雷射設備非用戶維修設備，請與生產商聯繫維修事宜。

注意：要斷開電源，請將所有電源線從本機上拔下

英屬蓋曼群島商防特網股份有限公司台灣分公司

地址：台北市內湖區行愛路176號2樓

電話：(02) 27961666

NCC

取得審驗證明之低功率射頻器材，非經核准，公司、商號或使用者均不得擅自變更頻率，加大功率或變更原設計之特性及功能。低功率射頻器材之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。前述合法通信，指依電信管理法規定作業之無線電通信。低功率射頻器材須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。

減少電磁波影響，請妥適使用

電波功率密度 MPE 標準值為：0.9 mW/cm²，送測產品實測值為：0.08069 mW/cm²，建議使用時設備天線至少距離人體 20 公分。

China

此為A級產品，在生活環境中，該產品可能會造成無線電干擾。這種情況下，可能需要用戶對其採取切实可行的措施。

