

規格承認書

SPECIFICATION FOR APPROVAL

Customer: Getac Technology Corp.

Brand Name: Getac

Description: K120 PN7462 NFC Module

Version: R00

Our Parts Number: 179-90010395A0-9

Customer Parts Number: 442142000001

Made by: InfoThink Technology

Date: May, 02, 2018

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Approved : Roman Chang

Customer's Checked :

Customer's Approved :

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1. General Description

The K120 NFC module is a highly integrated transceiver module for contactless reader/writer communication at 13.56 MHz.

A dedicated Flash code is implemented to handle different RF protocols by an integrated microcontroller. The system host controller communicates with the K120 NFC module by using the USB link.

The protocol between the host controller and the K120 NFC module, on top of this physical link is the CCID protocol

2. Features

- ◆ High RF output power frontend IC for transfer speed up to 848 kbit/s
- ◆ NFC IP1 and NFC IP2 support
- ◆ Full NFC tag support (type 1, type 2, type 3, type 4A and type 4B, type 5)
- ◆ P2P active and passive, target and initiator
- ◆ Card emulation ISO14443 type A
- ◆ ISO/IEC 14443 type A and type B
- ◆ MIFARE classic card
- ◆ ISO/IEC 15693, and ISO/IEC 18000-3 mode 3
- ◆ Low power card detection
- ◆ Dynamic Power Control (DPC) support
- ◆ Compliance with EMV contactless protocol specification
- ◆ Compliance with NFC standards

3. Support the following operating modes:

- ◆ ISO/IEC 14443-A and B, MIFARE
- ◆ JIS X 6319-4 (comparable with FeliCa scheme)
- ◆ ISO/IEC 15693, ICODE, ISO/IEC 18000-3 mode 3
- ◆ NFC protocols - tag reader/writer, P2P
- ◆ ISO/IEC 14443- type A card emulation
- ◆ EMVCo compliance

4. System Requirements

- ◆ Desktop or notebook computer with a working USB port
- ◆ One of the following Operating Systems :
 - Windows[®] 2000
 - Windows[®] 2003 Server x32/x64
 - Windows[®] 2008 Server x32/x64
 - Windows Vista[™] x32/x64
 - Windows[®] 7 x32/x64

- Windows[®] 10 x32/x64

◆ Support by the following OS through the PCSC-Lite driver :

- GNU/Linux using libusb 1.0.x and later
- Mac OS Leopard (1.5.6 and newer)
- Mac OS Snow Leopard (1.6.X)
- Solaris
- FreeBSD

5. General Specifications

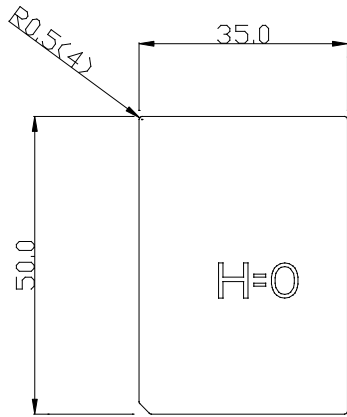
- ◆ Bus-powered - +5V +/- 5%, 500mA
- ◆ Average Power Consumption
 - Standby Mode: 0.12Watt
 - Active/Read Card Mode: 0.24 Watt
- ◆ Operational environment
 - Operating Temperature: -10°~60°
 - Operating Humidity: 10%~90%
 - Storage Temperature: -20°~70°
 - Storage Humidity: 10%~90%

6. Connector Pin List

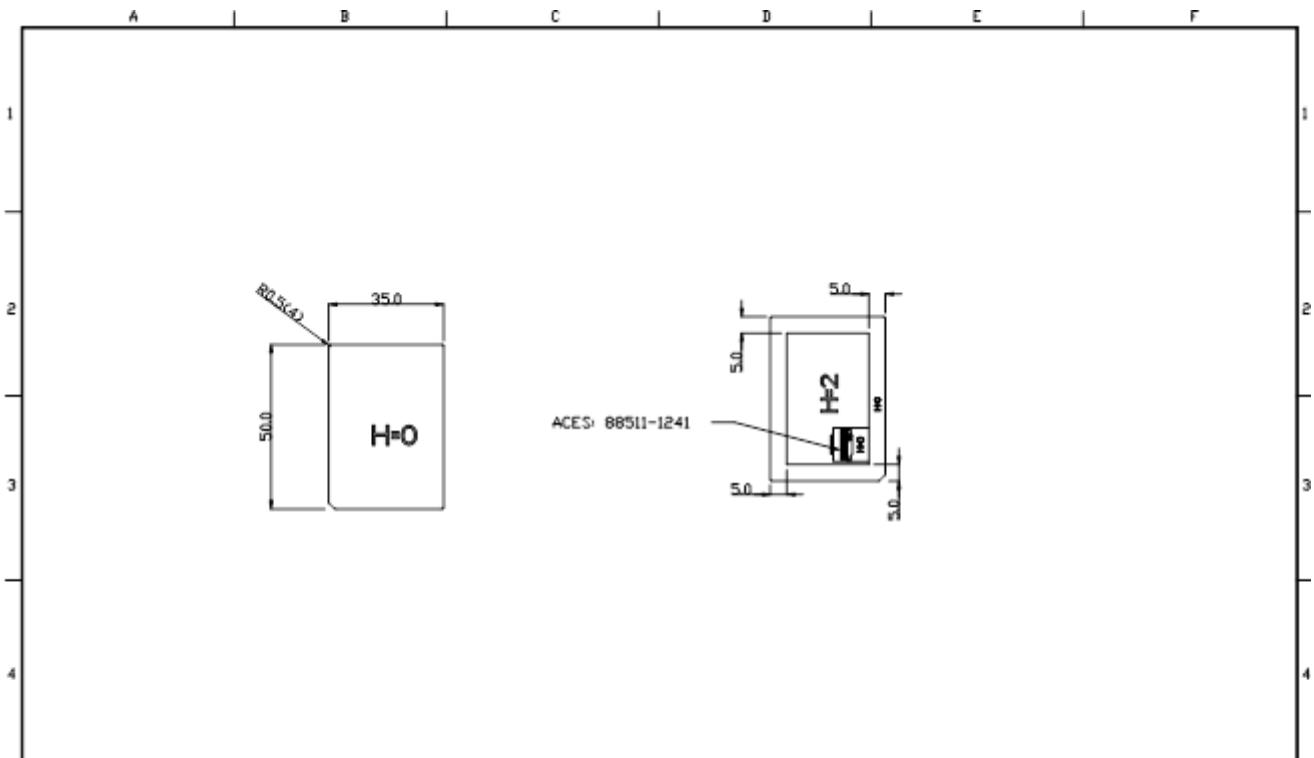
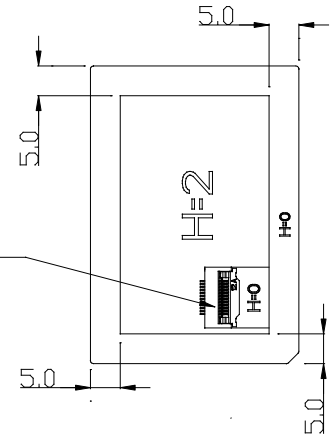
CN2 - Mainly USB Signals		
Pin No.	Pin Name	Input/Output
1	+V5S	POWER INPUT
2	+V5S	POWER INPUT
3	USB-	USB SIGNAL
4	USB+	USB SIGNAL
5	GND	
6	GND	
7	GND	
8	RFID_PWRON	INPUT
9	EXTENSION _BAYID_0	I/O
10	EXTENSION_IN#	I/O
11	+V3.3S	POWER INPUT
12	+V3.3S	POWER INPUT

7. PCBA Dimension

50 x 35 x 3.5 mm



ACES: 88511-1241



ITEM		CONTENTS OF CHANGE		EVS	CHK	MPV	M/E/Y	DATE	14-Jun-2017	MATERIAL	SEE NOTES	TREATMENT	PROJECTION
TABLE 1								DATE	14-Jun-2017	MATERIAL	SEE NOTES	TREATMENT	PROJECTION
RANGE	Plc	Mr1	Dr1	Por	Col	Pic	Ses	UNIT	MM	SCALE	1.00	DRAWING NAME	TBD
0-6	01	01	01	02	03	1	05	DRAWN	DESIGNED	CHECKED	APPROVED	MATERIAL NO.	MF TBD
6-20	01	01	15	25	1	1	05						R 00
20-80	01	15	02	03	2	15	1						
80-100	15	15	25	03	2	2	1						
100-205	15	02	03	04	25	2	1						
205-800	02	03	04	05	3	3	15						

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8. USB Device VID/PID and Firmware Version

VID/PID: 0x1FC9/0x0117

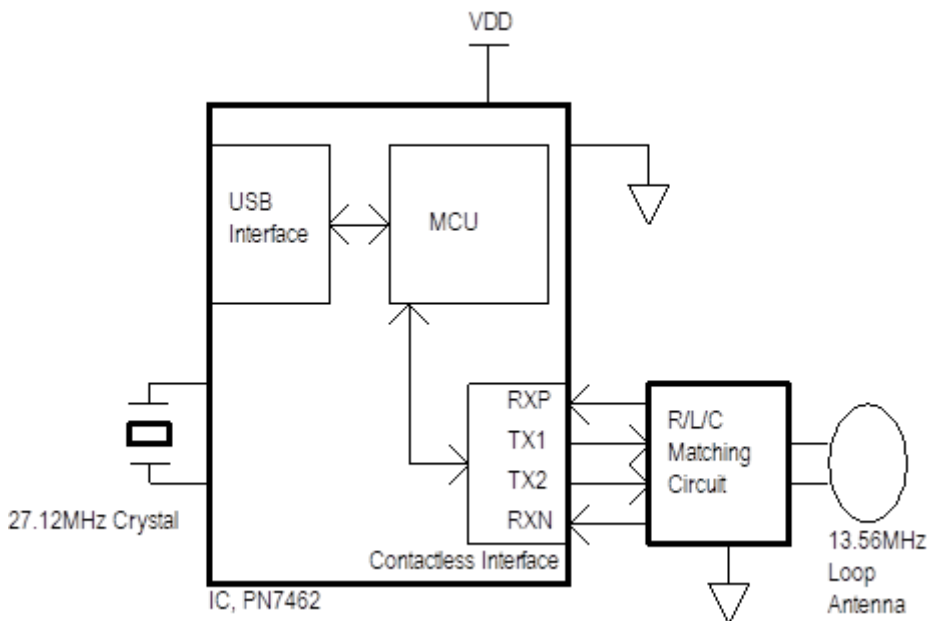
F/W Ver.: 2.45

9. Block Diagram

This module is powered by 5V from USB interface. Main supply voltage for internal analog modules, digital logic and memories. The 27.12 MHz crystal oscillator is used as a reference for all operations requiring high stability of the clock frequency.

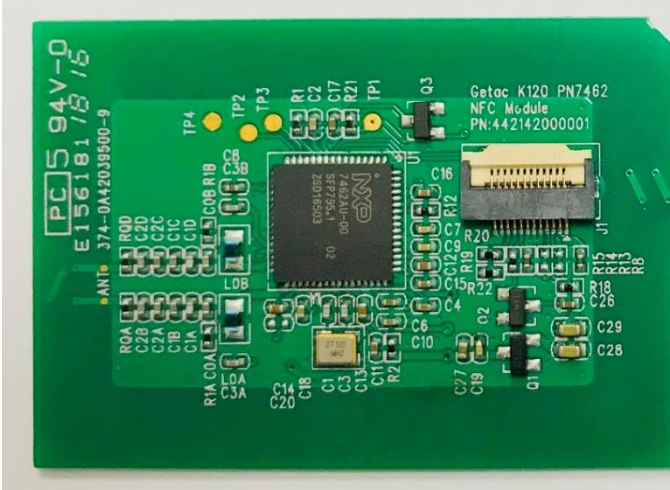
TX1 TX2 transmitter is able to drive an antenna circuit connected to outputs TX1 and TX2 with a 13.56 MHz carrier signal. The signal delivered on pins TX1 and pin TX2 is a 13.56 MHz carrier, modulated by an envelope signal for energy and data transmission to archive the standards ISO/IEC14443 A and B, FeliCa, and ISO/IEC18092 define the protocols.

In reader mode, the response from the antenna to the differential input RXP/RXN. The reader mode receiver extracts this signal by first removing the carrier in passive mixers. It then filters and amplifies the baseband signal before converting to digital values.

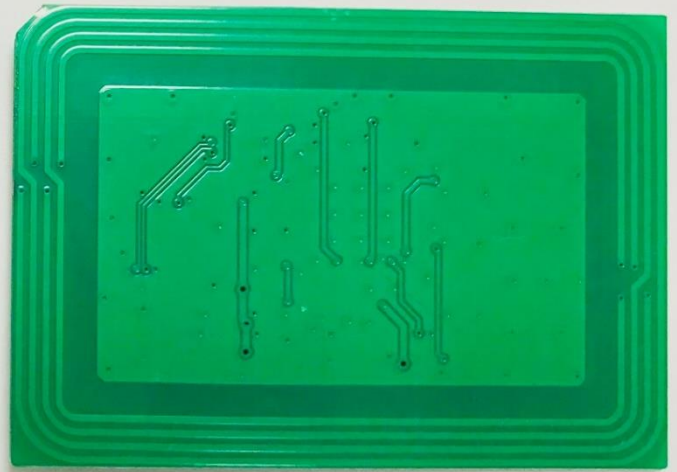


10. K120 NFC module Photograph

Top



Bottom



OEM/Integrators Installation Manual

Important Notice to OEM integrators

1. This module is limited to OEM installation ONLY.
2. This NFC module is limited to be integrated in specific host device, Getac B360 as describe in FCC ID: QYLPN7462B, IC: 10301A-PN7462B filing.
3. For additional hosts other than the specific host originally granted with a limited module, a Class II permissive change is required on the module grant to register the additional host as a specific host also approved with the module.
4. For FCC Part 15.31 (h) and (k): The OEM integrators is responsible for additional testing to verify compliance as a composite system. When testing the host device for compliance with Part 15 Subpart B, the OEM integrators is required to show compliance with Part 15 Subpart B while the transmitter module(s) are installed and operating. The modules should be transmitting and the evaluation should confirm that the module's intentional emissions are compliant (i.e. fundamental and out of band emissions). The OEM integrators must verify that there are no additional unintentional emissions other than what is permitted in Part 15 Subpart B or emissions are complaint with the transmitter(s) rule(s).
5. OEM integrators are responsible for regression testing to accommodate changes to designs, new antennas, and host and submit for C2PC filings. Colocation with other transmitter modules will be addressed through filings for those co- located transmitters when necessary or that colocation of other transmitters will be according to applicable KDB guidelines including those for RF exposure.

End Product Labeling

When the module is installed in the host device, the FCC/IC ID label must be visible through a window on the final device or it must be visible when an access panel, door or cover is easily re-moved. If not, a second label must be placed on the outside of the final device that contains the following text: "Contains FCC ID: QYLPN7462B"
"Contains IC: 10301A-PN7462B "

The FCC ID/IC ID can be used only when all FCC/IC compliance requirements are met.

Manual Information to the End User

The OEM integrator has to be aware not to provide information to the end user

regarding how to install or remove this RF module in the user's manual of the end product which integrates this module. The end user manual shall include all required regulatory information/warning as show in this manual.

Federal Communication Commission Interference Statement

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 B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Industry Canada Statement

This device complies with Industry Canada's licence-exempt RSSs. 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."