Quanta NX2KA1 Dev Board Mini User Manual

NX2KA1 Dev Board Mini
User Manual

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NX2KA1 Dev Board Mini

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Coral Dev Board and SoM Compliance Statements

Regulatory information
The regulatory information, certification, and compliance marks can be found on your device. Manufacturer address:
Google LLC, 1600 Amphitheatre Parkway, Mountain View, CA 94043

EMC compliance statement
Important: This device, power adaptor, and other in-box accessories have demonstrated Electromagnetic Compatibility (EMC) compliance under conditions that included the use of compliant peripheral devices and shielded cables between system components. It is important that you use compliant peripheral devices and

shielded cables between system components to reduce the possibility of causing interference to radios, televisions, or other electronic devices.

Regulatory information: United States
See the full Dev Board declaration of conformity for USA here (PDF).

FCC Regulatory Compliance
Note: 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 or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment to 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.

Changes or modifications not expressly approved by Google could void your authority to operate the equipment. This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: This device may not cause harmful interference. This device must accept any interference received, including interference that may cause undesired operation.

Radio Frequency Exposure
This device meets the U.S. Federal Communications Commission's (FCC) requirements for exposure to radio waves and is designed and manufactured not to exceed the FCC's emission limits for exposure to radio frequency (RF) energy. To comply with FCC RF exposure compliance requirements, a separation distance of at least 20 cm should be maintained between the antenna of this device and persons during device operation.

Regulatory information: EU
See the full Dev Board declaration of conformity for EU here (PDF).

EU Compliance Notice
Hereby, Google LLC declares that AA1 is in compliance with Radio Equipment Directive 2014/53/EU.
Serial number decoder for Dev Board (contains 10 digits):

Field	Definition	Allowed values
Y	Last digit of the year of manufacture	0 to 9
M	Month of manufacture	1 to 9 (Jan to Sep), A (Oct), B (Nov), C (Dec)
DD	Date code of manufacture	01 to 31 (1st to 31st)
P	Product code. Must be unique.	A
XXXX X	Number. Must be unique.	Per digit, 0 to 9 and A to Z

Serial number decoder for System-on-Module (contains 9 digits):

Field	Definition	Allowed values
Y	Last digit of the year of manufacture	0 to 9
M	Month of manufacture	1 to 9 (Jan to Sep), A (Oct), B (Nov), C (Dec)
D	Date code of manufacture	1 to 9 (1st to 9th), A to X—skip “I” and “0”—(10th to 31st)
P	Product code. Must be unique.	A
XXXXX	Number. Must be unique.	Per digit, 0 to 9 and A to Z

Restrictions and Requirements under Directive 2014/53/EU

The device is restricted to indoor use only when operating in the 5150 to 5350 MHz frequency range in AT, BE, BG, CY, CZ, DE, DK, EE, EL, ES, FI, FR, HR, HU, IE, IT, LT, LU, LV, MT, NL, PL, PT, RO, SE, SI, SK, UK, CH, IS, LI, NO, and TR.

Frequency Bands and Power

European Union, United Kingdom Data are given here is the maximum radio-frequency power transmitted in the frequency band(s) in which the radio equipment operates.

Frequency	Power
WiFi 2400-2483.5 MHz	Max 18 dBm
WiFi 5150-5250 MHz	Max 15 dBm
WiFi 5250-5350 MHz	Max 15 dBm
WiFi 5470-5725 MHz	Max 15 dBm
WiFi 5745-5825 MHz	Max 14 dBm
Bluetooth 2400-2483.5 MHz	Max 10 dBm

Radio frequency interference

Google is not responsible for any radio or television interference caused by unauthorized modification of these devices or accessories, or by the substitution or attachment of connecting cables and equipment other than that specified by Google. The correction of interference caused by such unauthorized modification, substitution, or attachment is the responsibility of the user. Google and its authorized resellers or distributors are not liable for any damage or violation of government regulations that may arise from the user failing to comply with these guidelines.

REACH

REACH (Registration, Evaluation, Authorisation, and Restriction of Chemicals, EC No 1907/2006) is the EU regulation addressing the safe production and use of chemicals. Google complies with all requirements of the regulation and we are committed to providing our customers with information about the presence of REACH Substances of Very High Concern (SVHCs). For information, you can contact Google at **coral-compliance@google.com**.

The point of contact for regulatory matters in the EU is Mouser Electronics, Inc., Elsenheimerstr. 11, 80687 Munich, Germany.

RoHS3 Compliance

This product is in compliance with Directive 2011/65/EU of the European Parliament and of the Council of 8 June 2011, and with Directive EU/2015/863, on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS) and its amendments.

Manufacturer info.
Manufacturer: Google LLC, 1600 Amphitheatre Parkway, Mountain View, CA, USA, 94043
EU Importer info
Mouser Electronics, Inc., Elsenheimerstr. 11, 80687 Munich, Germany

Coral USB Accelerator Compliance Statements

Regulatory information
The regulatory information, certification, and compliance marks can be found on your device. Manufacturer address:
Google LLC, 1600 Amphitheatre Parkway, Mountain View, CA 94043
EMC compliance statement
Important: This device, power adaptor, and other in-box accessories have demonstrated Electromagnetic Compatibility (EMC) compliance under conditions that included the use of compliant peripheral devices and shielded cables between system components. It is important that you use compliant peripheral devices and shielded cables between system components to reduce the possibility of causing interference to radios, televisions, or other electronic devices.
Regulatory information: United States
See the full USB Accelerator declaration of conformity for the USA here (PDF).
FCC Regulatory Compliance
Note: 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 or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment to 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.

Changes or modifications not expressly approved by Google could void your authority to operate the equipment.
This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: This device may not cause harmful interference. This device must accept any interference received, including interference that may cause undesired operation.

Radio Frequency Exposure
This device meets the U.S. Federal Communications Commission's (FCC) requirements for exposure to radio waves and is designed and manufactured not to exceed the FCC's emission limits for exposure to radio frequency (RF) energy. To comply with FCC RF exposure compliance requirements, a separation distance of at least 20 cm should be maintained between the antenna of this device and persons during device operation.

Regulatory information: EU
See the full USB Accelerator declaration of conformity for EU here (PDF).
EU Compliance Notice
Hereby, Google LLC declares that WA1 is in compliance with EMC Directive 2014/30/EU.
Serial number decoder for USB Accelerator:

Reid	Definition	Allowed values
Y	Last digit of the year of manufacture	0 to 9
M	Month of manufacture	1 to 9 (Jan to Sep), A (Oct), B (Nov), C (Dec)
D	Date code of manufacture	1 to 9 (1st to 9th), A to X, skip ‘I’ and ‘0’ (10th to 31st)
P	Product code. Must be unique.	W
XXXXX	Number. Must be unique.	Per digit, 0 to 9 and A to Z

Radio frequency interference
Google is not responsible for any radio or television interference caused by unauthorized modification of these devices or accessories, or by the substitution or attachment of connecting cables and equipment other than that specified by Google. The correction of interference caused by such unauthorized modification, substitution, or attachment is the responsibility of the user. Google and its authorized resellers or distributors are not liable for any damage or violation of government regulations that may arise from the user failing to comply with these guidelines.

REACH
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The point of contact for regulatory matters in the EU is Mouser Electronics, Inc., Elsenheimerstr. 11, 80687 Munich,
Germany.
RoHS3 Compliance
This product is in compliance with Directive 2011/65/EU of the European Parliament and of the Council of 8 June 2011, and with Directive EU/2015/863, on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS) and its amendments.
Manufacturer info
Manufacturer: Google LLC, 1600 Amphitheatre Parkway, Mountain View, CA, USA, 94043
EU Importer info
Mouser Electronics, Inc., Elsenheimerstr. 11, 80687 Munich, Germany

Coral Mini PCIe and M.2 Accelerator Compliance Statements

Regulatory information
The regulatory information, certification, and compliance marks can be found on your device.
Manufacturer address: Google LLC, 1600 Amphitheatre Parkway, Mountain View, CA 94043
EMC compliance statement
Important: This device has demonstrated Electromagnetic Compatibility (EMC) compliance under conditions that included the use of compliant host devices and shielded cables between system components. It is important that you use compliant host devices and shielded cables between system components to reduce the possibility of causing interference to radios, televisions or other electronic devices.
Regulatory information: United States
FCC Regulatory Compliance
This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by Google could void your authority to operate the equipment.

Regulatory information: EU

See the full Mini PCIe / M.2 Accelerator declaration of conformity for EU here (PDF).

Serial number decoder for Mini PCIe and M.2 Accelerator:

Field	Definition	Allowed values
Y	Last digit of the year of manufacture	0 to 9
v	Month of manufacture	1 to 9 (Jan to Sep) An (Oct), B (Nov), C (Dec)
D	Date code of manufacture	1 to 9 (1st to 9th) A to X, skip 'I' and '0' (10th to 31st)
P	Product code. Must be unique.	M.2 A/E Key = R M.2 B/M Key = N Mini PCIe = U
XXXXX	Number. Must be unique.	Per digit, 0 to 9 and A to Z

Radio frequency interference

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The point of contact for regulatory matters in the EU is Google Commerce Limited, 70 Sir John Rogerson's Quay, Dublin 2, Ireland.

RoHS3 Compliance

This product is in compliance with Directive 2011/65/EU of the European Parliament and of the Council of 8 June 2011, on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS) and (EU)2015/863.

Manufacturer info.

Manufacturer: Google LLC, 1600 Amphitheatre Parkway, Mountain View, CA, USA, 94043

Coral Camera Compliance Statements

Regulatory information

The regulatory information, certification, and compliance marks can be found on your device. Manufacturer address:

Google LLC, 1600 Amphitheatre Parkway, Mountain View, CA 94043

EMC compliance statement

Important: This device, power adaptor, and other in-box accessories have demonstrated Electromagnetic Compatibility (EMC) compliance under conditions that included the use of compliant peripheral devices and shielded cables between system components. It is important that you use compliant peripheral devices and shielded cables between system components to reduce the possibility of causing interference to radios, televisions, or other electronic devices.

Regulatory information: United States

See the full Camera declaration of conformity for the USA here (PDF).

FCC Regulatory Compliance
Note: 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 or more of the following measures:

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- Increase the separation between the equipment and receiver.
- Connect the equipment to 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.

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Radio Frequency Exposure
This device meets the U.S. Federal Communications Commission's (FCC) requirements for exposure to radio waves and is designed and manufactured not to exceed the FCC's emission limits for exposure to radio frequency (RF) energy. To comply with FCC RF exposure compliance requirements, a separation distance of at least 20 cm should be maintained between the antenna of this device and persons during device operation.

Regulatory information: EU
See the full Camera declaration of conformity for the EU here (PDF).

EU Compliance Notice
Hereby, Google LLC declares that AA1 is in compliance with Radio Equipment Directive 2014/53/EU.
Serial number decoder for Camera:

Reid	Definition	Allowed values
Y	Last digit of the year of manufacture	0 to 9
M	Month of manufacture	1 to 9 (Jan to Sep), A (Oct), B (Nov), C (Dec)
D	Date code of manufacture	1 to 9 (1st to 9th), A to X, skip 'I' and '0' (10th to 31st)
P	Product code. Must be unique.	C
XXXXX	Number. Must be unique.	Per digit, 0 to 9 and A to Z

Radio frequency interference
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Concern (SVHCs). For information, you can contact Google at **coral-compliance@google.com**.
The point of contact for regulatory matters in the EU is Google Commerce Limited, 70 Sir John Rogerson's Quay, Dublin
2, Ireland.
RoHS Compliance
This product is in compliance with Directive 2011/65/EU of the European Parliament and of the Council of 8 June 2011, on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS) and its amendments.
Manufacturer info.
Manufacturer: Google LLC, 1600 Amphitheatre Parkway, Mountain View, CA, USA, 94043
EU Importer info
Mouser Electronics, Inc., Elsenheimerstr. 11, 80687 Munich, Germany

Coral Environmental Sensor Board Compliance Statements

Regulatory information
The regulatory information, certification, and compliance marks can be found on your device. Manufacturer address: Google LLC, 1600 Amphitheatre Parkway, Mountain View, CA 94043
EMC compliance statement
Important: This device, power adaptor, and other in-box accessories have demonstrated Electromagnetic Compatibility (EMC) compliance under conditions that included the use of compliant peripheral devices and shielded cables between system components. It is important that you use compliant peripheral devices and shielded cables between system components to reduce the possibility of causing interference to radios, televisions, or other electronic devices.
Regulatory information: United States
See the full Environmental Sensor Board declaration of conformity for the USA here (PDF).
FCC Regulatory Compliance
Note: 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 or more of the following measures:

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- Increase the separation between the equipment and receiver.
- Connect the equipment to 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.

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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. 2. This device must accept any interference received, including interference that may cause undesired operation.

Radio Frequency Exposure
This device meets the U.S. Federal Communications Commission's (FCC) requirements for exposure to radio waves and is designed and manufactured not to exceed the FCC's emission limits for exposure to radio frequency (RF) energy. To comply with FCC RF exposure compliance requirements, a separation distance of at least 20 cm should be maintained between the antenna of this device and persons during device operation.

Regulatory information: EU
See the full Environmental Sensor Board declaration of conformity for EU here (PDF).
EU Compliance Notice
Hereby, Google LLC declares that AA1 is in compliance with Radio Equipment Directive 2014/53/EU.
Serial number decoder for Environmental Sensor Board:

Field	Definition	Allowed values
Y	Last digit of the year of manufacture	0 to 9
M	Month of manufacture	1 to 9 (Jan to Sep), A (Oct), B (Nov), C (Dec)
D	Date code of manufacture	1 to 9 (1st to 9th), A to X, skip 'I' and '0' (10th to 31st)
P	Product code. Must be unique.	I
XXXXX	Number. Must be unique.	Per digit, 0 to 9 and A to Z

Radio frequency interference
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The point of contact for regulatory matters in the EU is Google Commerce Limited, 70 Sir John Rogerson's Quay, Dublin 2, Ireland.

RoHS Compliance
This product is in compliance with Directive 2011/65/EU of the European Parliament and of the Council of 8 June 2011, on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS) and its amendments.
Manufacturer info.
Manufacturer: Google LLC, 1600 Amphitheatre Parkway, Mountain View, CA, USA, 94043
EU Importer info
Mouser Electronics, Inc., Elsenheimerstr. 11, 80687 Munich, Germany

Coral Dev Board Mini Compliance Statements
Required End Product Labeling
Any device incorporating this module must include an external, visible, permanent marking or label that states: "Contains FCC ID: HFS-NX2KA1"
Additional testing, Part 15 Subpart B disclaimer
The KA1 modular transmitter is only FCC authorized for the specific rule parts (i.e., FCC transmitter rules) listed on the grant, and the host product manufacturer is responsible for compliance with any other FCC rules that apply to the host not covered by the modular transmitter grant of certification.
The final host product still requires Part 15 Subpart B compliance testing with the modular transmitter installed.

FCC
This module has been tested and found to comply with the following requirements for Modular Approval.

- Part 15.247 – Operation within the bands 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz.
- Part 15.407 – General technical requirements.

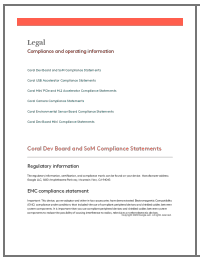
Test Modes
This device uses various test mode programs for test set up which operate separately from production firmware. Host integrators should contact grantees for assistance with test modes needed for module/host compliance test requirements.
Antennas
The following external antenna type has been approved for use with the “KA1”

Radio	Antenna Type	Freq. (MHz)	Max. Peak Antenna Gain (dBi)
Bluetooth	Chip	2402-2480	0.9
WiFi 2.4GHz	Chip	2412-2462	0.9

Radio	Antenna Type	Freq. (MHz)	Max. Peak Antenna Gain (dBi)	Min. Peak Antenna Gain (dBi)
WiFi 5GHz	Chip	5150-5250	2.	-15.
		5250-5350	2.	-15.
		5470-5725	2.	-19.
		5725-5850	3.	-16.

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 shown in the User manual.
In the end product, the antenna(s) used with this transmitter must be installed to provide a separation distance of at least 20cm from all persons and must not be co-located or operated in conjunction with any other antenna or transmitter except in accordance with FCC multi-transmitter product procedures. Users and installers must be provided with antenna installation instructions and transmitter operating conditions for satisfying the RF exposure compliance.

Documents / Resources

	Quanta NX2KA1 Dev Board Mini [pdf] User Manual NX2KA1 Dev Board Mini, Dev Board Mini, Board Mini