



**Manual for
EK047
USA/CDN Market
Version 1.3**

Revision History

Date	Version	Description	Author	Department
12.08.2020	0.1 Draft	Initial manual for FCC/ISED	L. Pan	SH/EPD
15.09.2020	1.0	Addition and Revision	F. Benner	SH/DPS
28.10.2020	1.1 Draft	Revision and Label with FCC/ISED ID	L. Pan	SH/EPD
25.11.2020	1.2	Listing exact Transmission Power	L. Pan	SH/EPD
14.12.2020	1.3	Revision of Transmission Power	L. Pan	SH/EPD

Reviewed By

Date	Version	Name	Department
15.09.2020	1.0	G. Borgelt	GTZ/TPE
18.11.2020	1.1	G. Borgelt	GTZ/TPE

Approvals

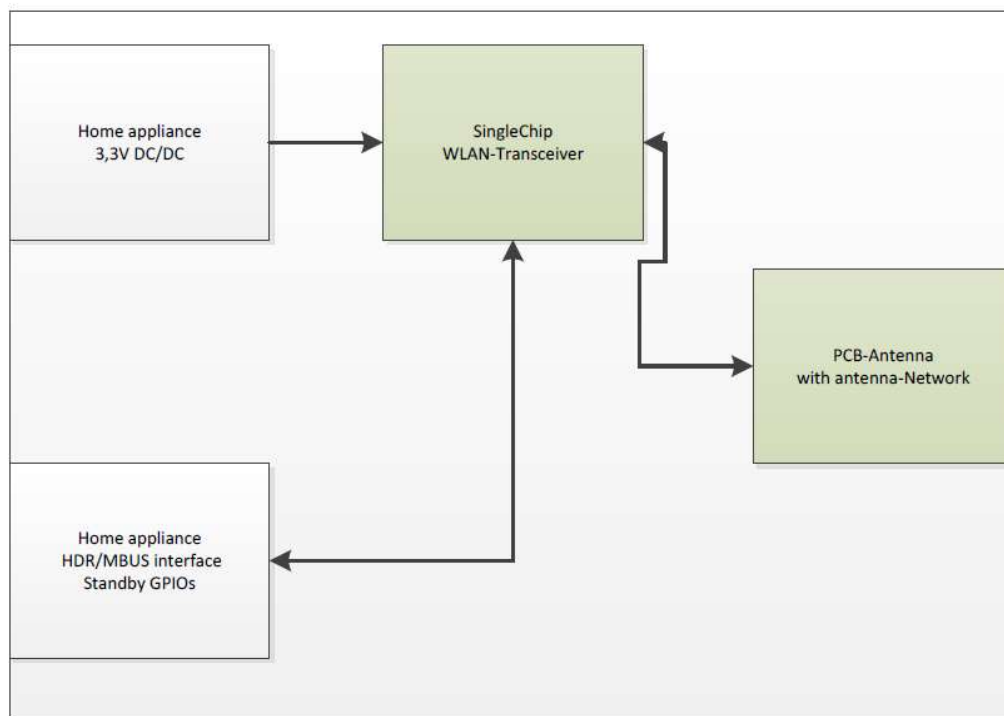
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Contents

1. General	4
2. Technical data EK047	4
3. Norms / Standards	6
3.1 FCC / ISED	6
3.2 Safety	6
3.3 RF-Standard	6
3.4 Photo and Label	6
4. Regulatory Notice and Integration	6
4.1 United States (FCC Notice)	6
4.2 Canada (ISED Notice)	7
4.3 Integration	8

1. General

The EK047 is a wireless network interface module for Miele domestic and professional appliances like hoods, hobs, cooling devices or washing machines. The module supports the IEEE 802.11 b/g/n Wifi standard. The EK047 module is designed to solder on PCB during manufacturing.



Operational Description

The EK047 is based on WiFi SOC Controller and has a board design in stamp form factor. The Chip contains the wireless communication stack and Miele protocol. EK 047 utilizes a PCB Antenna.

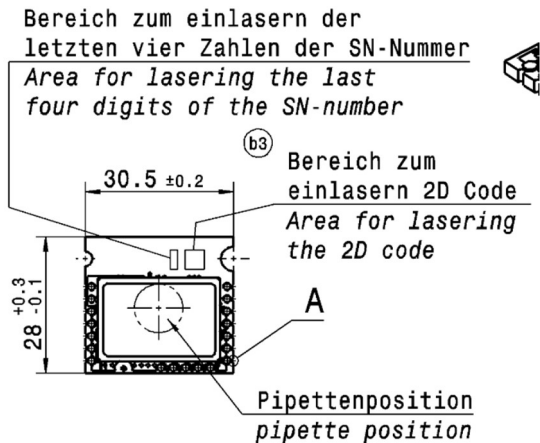
Integration instruction

The EK047 must be integrated under consideration of the technical data. It is not allowed to make any changes on the module or to use another antenna. The module should be placed in an area with good RF performance.

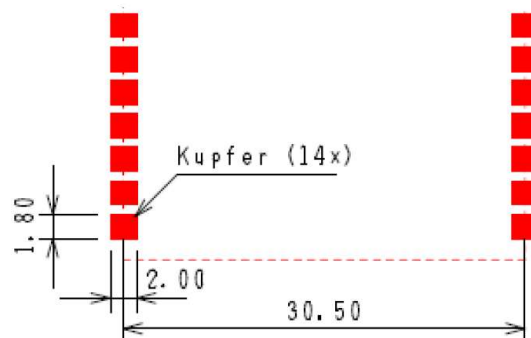
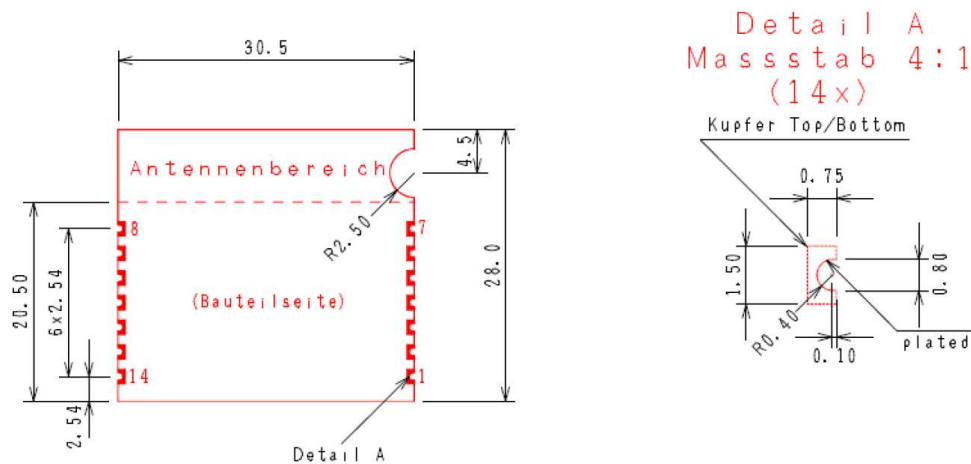
2. Technical data EK047

VCC in V	3.0 min. 3.3 typical 3.6 max.
Current in mA	~8, Application active, WiFi inactive 135 typical, Application active, WiFi active 150 typical, Accesspoint
ambient temperature in °C	0 – 75 0 – 85 Chip
Humidity max	85% non condensation
Dimensions in mm	30.5/28
Wireless	
MCU/RF IC	Type 1GC
Input	double buffered interface

Antenna type	PCB inverted F
Antenna gain	+7 dBi
RF Frequency	2.45 GHz
Channels	1 to 11
Channel Frequencies	2,412 GHz – 2,462 GHz
Channel Frequencies Range	2,400 GHz – 2,4735 GHz
Transmission Power in mW	< 50.2



Footprint



3. Norms / Standards

3.1 FCC / ISED

FCC Regulation Part 15.109, Part 15.209 and Part 15.247
 ISED regulations RSS-247, RSS-102 and RSS-Gen

3.2 Safety

UL 60730-1, CAN/CSA E60730-1:2015+A1:2017

3.3 RF-Standard

The modules use the RF standard IEEE 802.11 b/g/n20/n40

3.4 Photo and Label



Label



Top View

4. Regulatory Notice and Integration

4.1 United States (FCC Notice)

FCC ID: 2ACUWEK047

In accordance with FCC Part 15, the 2ACUWEK047 is listed as a Full Modular Transmitter Device.

FCC CAUTION:

ANY CHANGES OR MODIFICATIONS NOT EXPRESSLY APPROVED BY THE PARTY RESPONSIBLE FOR COMPLIANCE COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.

THIS DEVICE COMPLIES WITH PART 15 OF FCC RULES. OPERATION IS SUBJECT TO FOLLOWING TWO CONDITIONS:

- (1) THIS DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE, AND
- (2) THIS DEVICE MUST ACCEPT ANY INTERFERENCE RECEIVED INCLUDING INTERFERENCE THAT CAUSE UNDESIRE OPERATION.

USERS MANUAL OF THE END PRODUCT:

The end user has to be informed that any changes or modifications not expressly approved by the manufacturer could void the user's authority to operate this equipment. If the size of the end product is smaller than 8x10cm, then additional statement is required to be printed in the user's manual of the appliances:

Manual for EK047 USA/CDN	Version: 1.3	
EK047 WiFi Module	Date: 14/12/2020	

FCC CAUTION:

ANY CHANGES OR MODIFICATIONS NOT EXPRESSLY APPROVED BY THE PARTY RESPONSIBLE FOR COMPLIANCE COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.

THIS DEVICE COMPLIES WITH PART 15 OF 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 UNDESIRE OPERATION.

As to meet the conditions as Full Modular Approval under the situation that the application of the host devices is not clear, the Exposure Statement of 20cm has to be listed on the end products, only if the 20cm couldn't be maintained in the end-products. End products with a construction under 20cm, can exempt from Exposure Statement of 20cm, as below, with a SAR measurement which shows that the exposure is under the relevant limits.

RADIATION EXPOSURE STATEMENT:

THIS EQUIPMENT COMPLIES WITH FCC AND WITH ISED RADIATION EXPOSURE LIMITS SET FORTH FOR AN UNCONTROLLED ENVIRONMENT.

THIS EQUIPMENT SHOULD BE INSTALLED AND OPERATED WITH A MINIMUM DISTANCE OF 20CM BETWEEN THE RADIATOR AND YOUR BODY. THIS DEVICE AND ITS ANTENNA(S) MUST NOT BE CO-LOCATED OR OPERATION IN CONJUNCTION WITH ANY OTHER ANTENNA OR TRANSMITTER.

LABEL OF THE END PRODUCT:

The final end product must be labeled in a visible area with the following "CONTAINS FCC ID: 2ACUWEK047 ". If the size of the end product is larger than 8x10cm, then the following FCC statement has to be available on the label:

THIS DEVICE COMPLIES WITH PART 15 OF 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 UNDESIRE OPERATION.

4.2 Canada (ISED Notice)

IC: 5669C-EK047

The term "IC" before the radio certification number only signifies that ISED technical specifications were met.

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 UNDESIRE OPERATION OF THE DEVICE.

USERS MANUAL OF THE END PRODUCT:

The end user has to be informed that any changes or modifications not expressly approved by the manufacturer could void the user's authority to operate this equipment. If the size of the end product is smaller than 8x10cm, then additional statement is required to be printed in the user's manual of the appliances:

THIS DEVICE COMPLIES WITH PART 15 OF THE FCC RULES AND CONTAINS LICENSE-EXEMPT TRANSMITTER(S)/RECEIVER(S) THAT COMPLY WITH INNOVATION, SCIENCE AND ECONOMIC DEVELOPMENT CANADA'S LICENCE-EXEMPT RSS STANDARD(S). OPERATION IS SUBJECT TO THE

Manual for EK047 USA/CDN	Version: 1.3	
EK047 WiFi Module	Date: 14/12/2020	

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 UNDESIRE OPERATION.

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, ET*
- (2) L'APPAREIL DOIT ACCEPTER TOUT BROUILLAGE RADIOÉLECTRIQUE SUBI, MÊME SI LE BROUILLAGE EST SUSCEPTIBLE D'EN COMPROMETTRE LE FONCTIONNEMENT.*

LABEL OF THE END PRODUCT

The final end product must be labeled in a visible area with the following
"CONTAINS IC : 5669C-EK047".

THIS DEVICE COMPLIES WITH PART 15 OF THE FCC RULES AND CONTAINS LICENSE-EXEMPT TRANSMITTER(S)/RECEIVER(S) THAT COMPLY WITH INNOVATION, SCIENCE AND ECONOMIC DEVELOPMENT CANADA'S LICENCE-EXEMPT RSS STANDARD(S). 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 UNDESIRE OPERATION.

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, ET*
- (2) L'APPAREIL DOIT ACCEPTER TOUT BROUILLAGE RADIOÉLECTRIQUE SUBI, MÊME SI LE BROUILLAGE EST SUSCEPTIBLE D'EN COMPROMETTRE LE FONCTIONNEMENT.*

4.3 Integration

This EK047 Module will only be integrated on our responsibility into Miele appliances/end products. The final products, including the integrated radio module, have to show compliance to the FCC /ISED requirements.

Appropriate measurements (e.g. 15 B compliance) and if applicable additional equipment authorizations (e.g. Verification, DoC) of the final end products will be addressed by Miele & Cie. KG.