

CUSTOMER :

DATE : 2025.03.17

SPECIFICATIONS FOR APPROVAL




PRODUCT : Sub 1GHz FHSS Transceiver Module

MODEL NAME : DGT12-01DC0

CUSTOMER P/N :

APPROVAL	REMARK

Revision
1.0 (25/03/17) - Initial release.
<div>RoHS</div>

Designed	Checked	Approved	DeviceDesign Co., Ltd.	
				
HA M.H	Hwang K.R	Choi Y.L	DOCUMENT No.	DGT12-01DC0 SA
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1. Introduction

DeviceDesign would like to announce a low-cost and low-power consumption module which has Sub 1GHz FHSS Transceiver Functionality.

2. Purpose

This module is used for communication between sensor devices and gateways, utilizing Frequency Hopping Spread Spectrum (FHSS)

3. Quality

Quality should meet each condition which mentioned on this specification.  
However, the items which are not mentioned on this specification follow the inspection agreements and standards which are agree with both companies.

4. Appearance and Characteristics

1) Appearance

The appearance should not be contaminated by harmful materials and should not have cracks etc.

Mechanical dimensions should comply with the contents of Clause 9.

2) Characteristics

Electrical characteristics should meet the contents of Clause 11.

5. Application

DGT12-01DC0 is a Sub 1GHz FHSS Transceiver Module.  
But this module is not designed for Life Support Application.  
This Module applications include :

- Sensor Devices
- Gateways

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6. Absolute Maximum Rating

Parameter		Min.	Max.	Unit
Storage Temperature		-40	85	°C
Supply Voltage	VCC	-0.3	3.	V

7. Test

Electrical characteristics are tested for every products. However, if there are any objection in judgment, it should be treated with agreements of both companies.

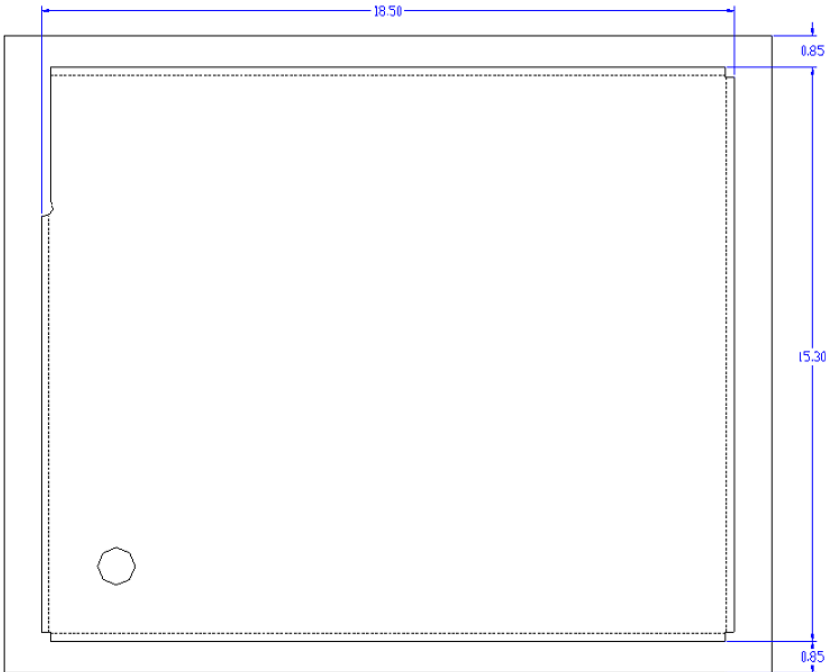
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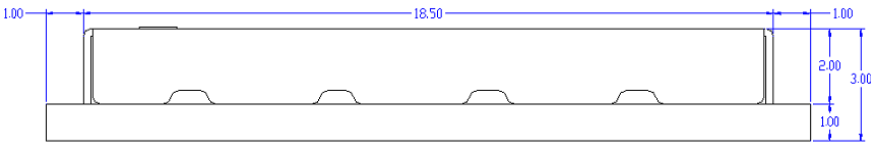
8. Mechanical Dimensions #1

Dimension	18.50mm × 15.30mm × 3.0mm(Typ.)
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<Top View>



<Side View>

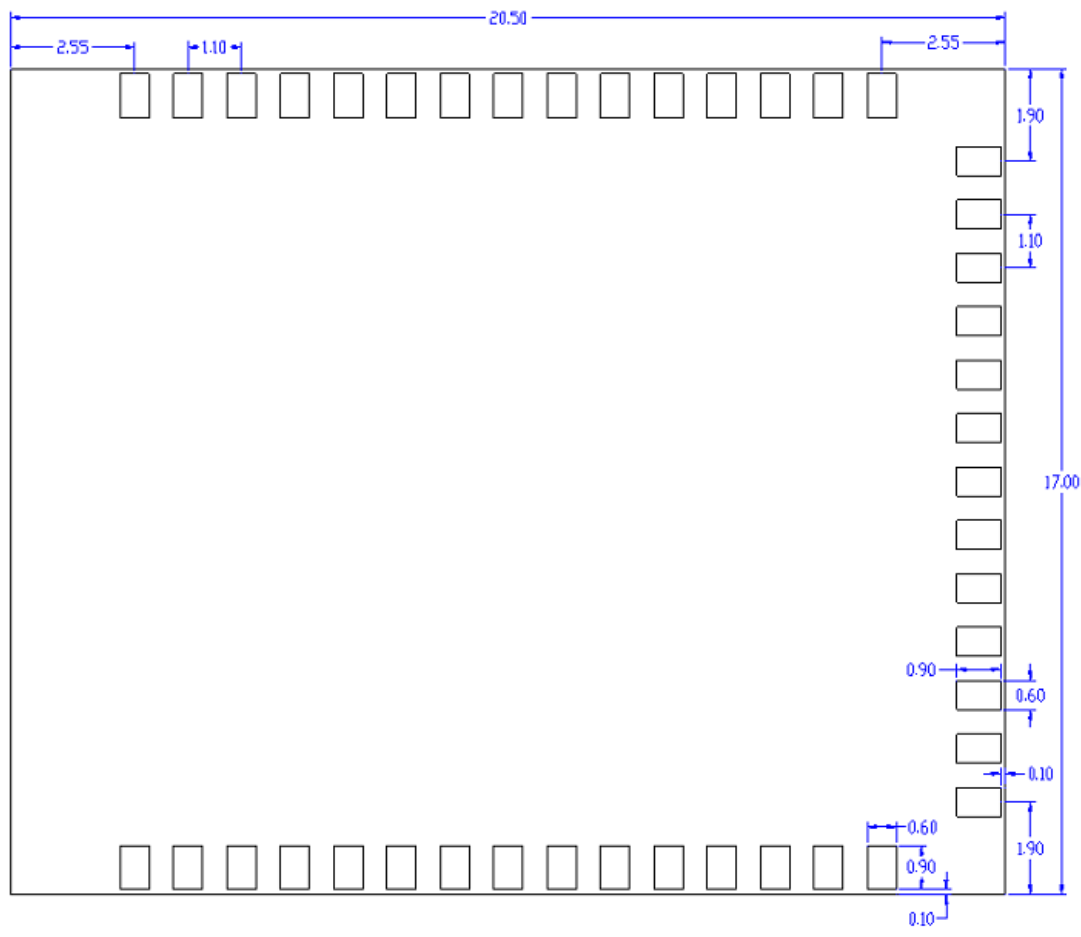


Unit : mm

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9. Mechanical Dimensions #2

<Bottom View>



Unit : mm

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10. General Description

- Main IC : Texas Instrument CC1312R1
- 48MHz and 32.768KHz crystal embedded
- 352kB/256kB of Flash/ROM memory
- Size : 18.5 mm x 15.3 mm x 3.0mm
- 43 Pins of LGA Type Pad

11. Electrical Characteristics

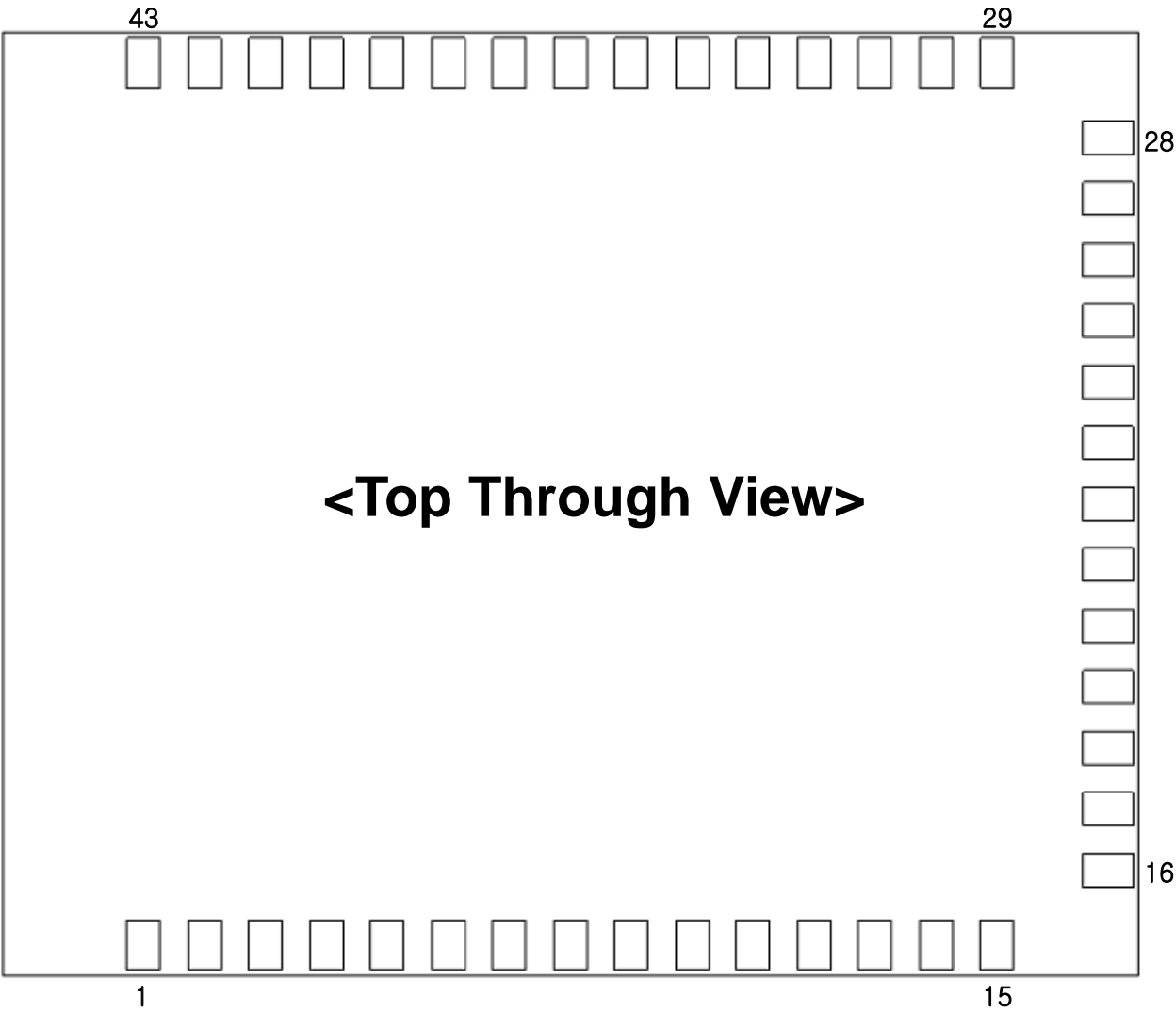
1) Recommended Operating Rating

Parameter		Min.	Typ.	Max.	Unit
Operating Temperature		-30	20	85	°C
Supply Voltage	VCC	2.0	3.3	3.6	V

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12. Pin Assignment (Bottom Layout, Top Through View)



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## 13. Pin Description

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14. FCC Information to User

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 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.

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.

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

IMPORTANT NOTE:

FCC RF Radiation Exposure Statement:

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 & your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

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**OEM INTEGRATION INSTRUCTIONS:**

This device is intended only for OEM integrators under the following conditions:

The module must be installed in the host equipment such that 20 cm is maintained between the antenna and users, and the transmitter module may not be co-located with any other transmitter or antenna. The module shall be only used with the internal on-board antenna that has been originally tested and certified with this module. External antennas are not supported. As long as these 3 conditions above are met, further transmitter test will not be required.

However, the OEM integrator is still responsible for testing their end-product for any additional compliance requirements required with this module installed (for example, digital device emissions, PC peripheral requirements, etc.). The end-product may need Verification testing, Declaration of Conformity testing, a Permissive Class II Change or new Certification. Please involve a FCC certification specialist in order to determine what will be exactly applicable for the end-product.

**Validity of using the module certification:**

In the event that these conditions cannot be met (for example certain laptop configurations or co-location with another transmitter), then the FCC authorization for this module in combination with the host equipment is no longer considered valid and the FCC ID of the module cannot be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate FCC authorization. In such cases, please involve a FCC certification specialist in order to determine if a Permissive Class II Change or new Certification is required.

**Upgrade Firmware:**

The software provided for firmware upgrade will not be capable to affect any RF parameters as certified for the FCC for this module, in order to prevent compliance issues.

**End product labeling:**

This transmitter module is authorized only for use in device where the antenna may be installed such that 20 cm may be maintained between the antenna and users. The final end product must be labeled in a visible area with the following:

- Contains FCC ID: DGT12-01DC0

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- This Module has been tested and should be used with below antennas:

Antenna Type	Peak Gain (dBi)	Part Name
Dipole	2.707	HW-LORA-N-RSMA

Information that must be placed in the end user manual:

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.

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