INTERRA IR EMITTER

Product Manual

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CONTENTS

1.) PRODUCT DESCRIPTION

ITR420-0001 The Interra IR Emitter is a multifunctional IR transmitter and it has five functions : Single mode, repeat mode, sequence mode, air-condition control and current detection. The device has 150 universal IR codes at most and 810 AC IR codes at most. Also, it has 4 emitting interfaces A, B, C and D. The Interra IR Emitter is used to control electronic devices such as TV, DVD, Air-Conditioner and other devices can be controlled by IR. Interra products are manufactured in accordance with EU standard for EMC, electrical safety compatibility.

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1.1.) TECHNICAL INFORMATION

Product Code	ITR420-0001
Power Supply	EIB Power Supply
Current Consumption	<5 mA (static)
	<15 mA (dynamic)
Power Consumption	<150 mW (static)
	<450 mW (dynamic)
Current Detection	< 2 A
Transmitting wave frequency	38 Khz
Emitting Distance	7m
Temperature Range	Operation (-5℃...45℃)
	Storage (-20℃...60℃)
	Transport (-25℃...70℃)
Maximum Air Humidity	< 90 RH
Weight	60 g
Color	Light Grey and White
Dimensions	45 x 45 x 16 mm (HxWxD)
Certificaton	KNX Certified
Configuration	Configuration with ETS

1.2.) PRODUCT FUNCTIONS

➢ The universal IR codes control TV, DVD and other devices which can be controlled by IR.

➢ The AC IR codes are used for controlling AC devices of any brand.

➢ Interra IR Emitter supports current detection with current up to 2A.

➢ The device has several AC control types: Fan speed control, swing control, Cooling/Heating, Temperature control, ON/OFF control.

➢ After learned, obtained and downloaded the infrared codes through infrared learning page of KNX Assistant Software and IR Learner, the Infrared Emitter can control TV, DVD, air conditioner etc.

➢ ITR420-0001 multifunction IR transmitter has five functions: Single mode, repeat mode, sequence mode, air-condition mode and current detection.

➢ Single mode: System emits one universal IR code and the emitting channel is one channel and multichannel.

➢ Repeat mode: System emits one universal IR code several times repeatedly and the emitting channel is one channel and multichannel.

➢ Sequence mode: System emits several universal IR code sequently at one time, but the emitting channel is one channel.

➢ Air-condition mode: System control air-condition specially, and the emitting channel is one channel.

➢ Current detection: System detects the current of equipments running.

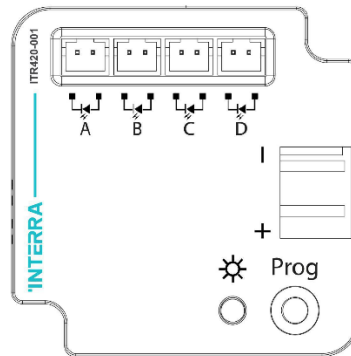## 1.3.) PRODUCT DIMENSIONS

Fig 1 : Front, Side and Rear Appearances and Measures of the Device.

The numerical values showing the dimensions above are in mm.
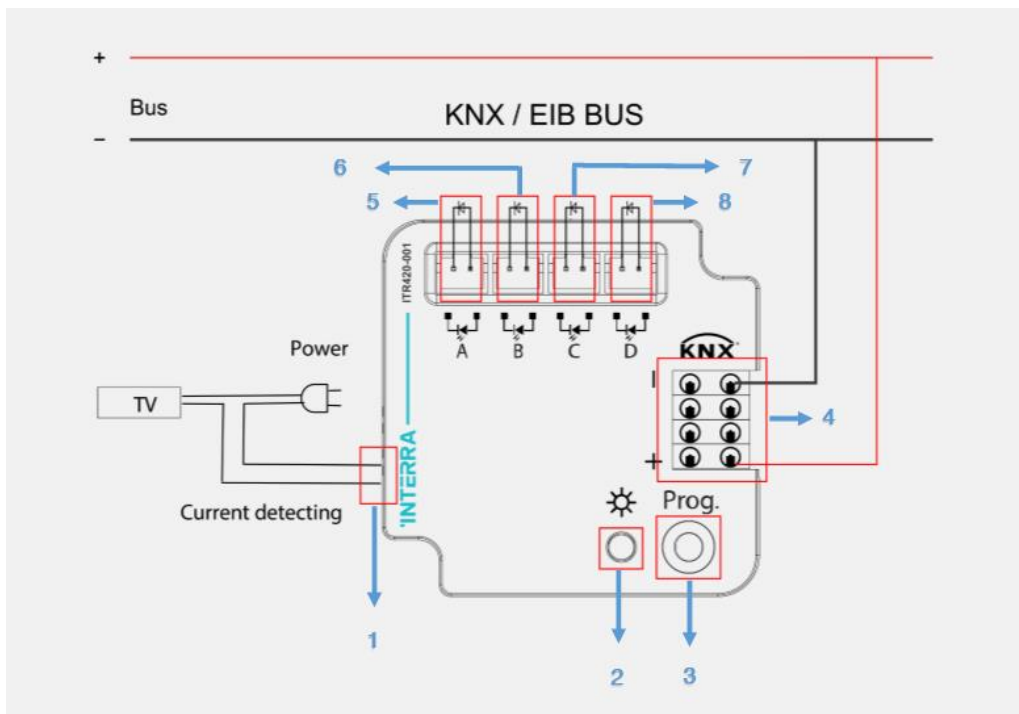
1.4.) CONNECTION DIAGRAM AND PROGRAMMING

Fig 2 : KNX Connector, LEDs, Infrared Channels and Button.

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In the figure above, there are 4 Infrared Channels, . The number 1 button is the programming button, the LED 2 is LED programming and the LED 3 is LED status indicator. The programming button must be pressed before programming the device. After pressing the button, the LED 2 will be red. Thus, the device is ready to be installed via the ETS program.

Number	Definition
1	Current Detection Connector
2	Programming LED
3	Programming Button
4	KNX Connector
5	Infrared Channel A
6	Infrared Channel B
7	Infrared Channel C
8	Infrared Channel D

Table 1 : Interra IR Emitter Wiring Description

1.5.) Safety Precautions & Important Notes

- ➤ Do not forget to read this manual carefully before doing any operation.
- ➤ Special Programming – This device is designed for professional KNX installation. It can only be programmed by ETS software.
- ➤ Cable Connections – Do not get wrong connection for Black and Red wires.
- ➤ Voltage – The bus voltage must be between 21-30 VDC.
- ➤ To establish security, each circuit should be connected to a miniature circuit breaker or fuse.
- ➤ Mounting Location – To avoid installed near the air-conditioning vent and forbid to install near large area of metal objects.
- ➤ The device should be installed only in dry locations. If damaged by damp or liquid, turn it off immediately.
- ➤ Screw down torque is less than 0.8Nm.
- ➤ The IR emission tube should be placed to the Interra IR Emitter.
- ➤ The Interra IR Emitter should be installed close to the power switch when using the current detection. Do not forget to pay attention for safe using.

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2.) AUXILIARY TOOLS

Interra IR Emitter must learn IR code using the Interra IR Learner and download IR code into microcontroller unit's external memory using the Interra KNX Assistance software.

2.1.) Interra IR Learner & Interra KNX Assistance Software

Interra KNX Assistance software is not used with ETS at the same time. If IR Emitter is neverused , first database must be download and physical address must be set, then learn IR code and download IR code.

2.2.) Auxiliary tools using diagram

While learning the infrared codes, keep remote and Interra infrared learner in the same horizontal line. Their distance is 2~4 cm.

Fig 3 : Using Schematic Diagram

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3. ETS PARAMETERS AND OBJECTS

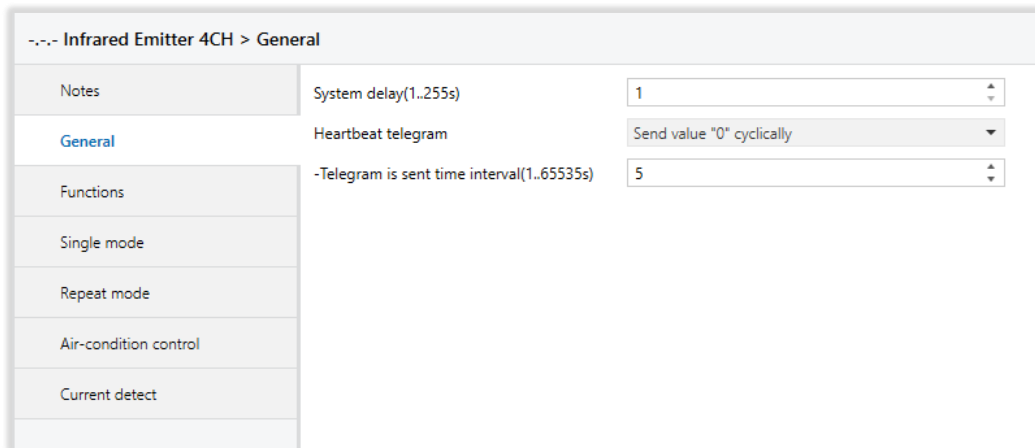Interra IR Emitter database can be programmed via most current ETS version.

The Interra IR Emitter has five functions: Single mode, repeat mode, sequence mode, air-condition control, current detection. Each functions are described in the following paragraph.

Name	Type	Max. Number of Communication Objects	Max. Number of Associations	Max. Number of Group Addresses
IR Emitter	ITR420-0001	193	254	254

Table 2 : Interra IR Emitter Group Addresses, Associations and Communication Objects

More than one group addresses can be assigned to an object. The assigned objects to some function of the channel output pages will be visible when related parameters are enabled.

3.1. GENERAL PARAMETER PAGE

Fig 4 : General Parameter Page

3.1.1. Parameters List

PARAMETERS	DESCRIPTION	VALUES
System delay(2..255s) after bus voltage recovery	This parameter, is used for set the delay time for the device after power on.	1...255
Heartbeat telegram	This parameter, is used to send cyclically heartbeat telegrams. If the value is 0, the device will send 0 cyclically. Also, if the value is 0/1, the device will send alternately 0 and 1 value cyclically.	**Disable** Send value 0 cyclically Send value 1 cyclically Send value 1/0 inverted cyclically

Telegram is sent time interval (1..65535s)*[1]	This parameter, allows sending the telegram cyclically after time out.	1..**5**..65535s

3.2. FUNCTIONS PARAMETER PAGE
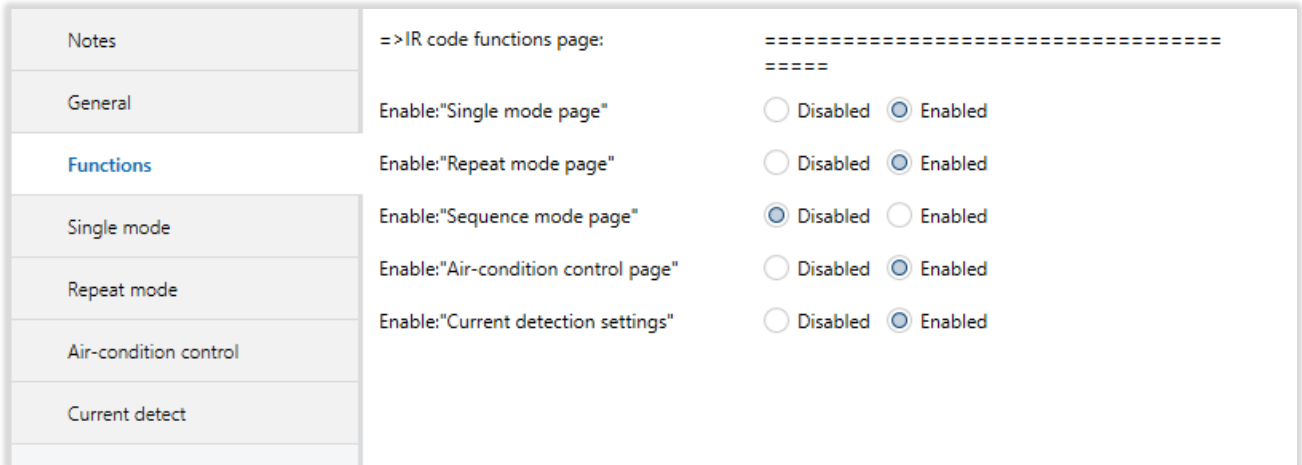
Fig 5 : Functions Parameter Page

3.2.1. Parameters List

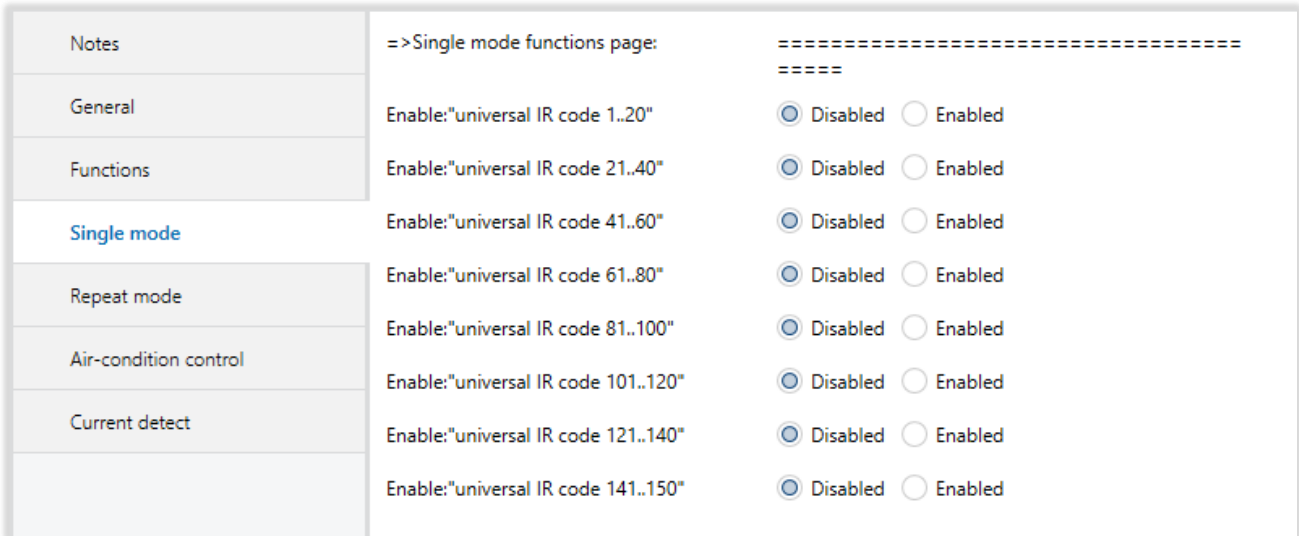| PARAMETERS	DESCRIPTION	VALUES
Enable: "Single mode page"	This parameter, is used to enable or disable the single mode parameter page.	Disabled **Enabled**
Enable: "Repeat mode page"	This parameter, is used to enable or disable the repeat mode parameter page.	Disabled **Enabled**
Enable: "Sequence mode page"	This parameter, is used to enable or disable the sequence mode parameter page.	Disabled **Enabled**
Enable: "Air-condition control page"	This parameter, is used to enable or disable the Air-condition control parameter page.	Disabled **Enabled**
Enable: "Current detection settings"	This parameter, is used to enable or disable the current detect parameter page.	Disabled **Enabled**

3.3. SINGLE MODE PARAMETER PAGE

Fig 7 : Single Mode Parameter Page

3.3.1. Parameters List

PARAMETERS	DESCRIPTION	VALUES
Enable:"universal IR code 1..20"	This parameter, is used to enable or disable the Universal IR code 1..20 parameter page.	Disabled **Enabled**
Enable:"universal IR code 21..40"	This parameter, is used to enable or disable the Universal IR code 21..40 parameter page.	Disabled **Enabled**
Enable:"universal IR code 41..60"	This parameter, is used to enable or disable the Universal IR code 41..60 parameter page.	Disabled **Enabled**
Enable:"universal IR code 61..80"	This parameter, is used to enable or disable the Universal IR code 61..80 parameter page.	Disabled **Enabled**
Enable:"universal IR code 81..100"	This parameter, is used to enable or disable the Universal IR code 81..100 parameter page.	Disabled **Enabled**
Enable:"universal IR code 101..120"	This parameter, is used to enable or disable the Universal IR code 101..120 parameter page.	Disabled **Enabled**
Enable:"universal IR code 121..140"	This parameter, is used to enable or disable the Universal IR code 121..140 parameter page.	Disabled **Enabled**
Enable:"universal IR code 141..150"	This parameter, is used to enable or disable the Universal IR code 141..150 parameter page.	Disabled **Enabled**

3.4. UNIVERSAL IR CODES

Fig 8 : Universal IR Codes Parameter Page

3.4.1. Parameters List

PARAMETERS	DESCRIPTION	VALUES
Enable universal IR code 1..20	This parameter, is used to enable or disable the universal IR codes 1..20. Universal IR codes can be emitted from one channel or multichannels. Universal IR code 1..20 is the same with the universal IR 1..20 in the Interra KNX Assistance software.	**Disabled** Enabled
-> Remark	This parameter, is used to remark IR code when it is learned in the Interra KNX Assistance software. The box can be filled in 40 bytes.	**IR Code 1**

-> Select emitting channel	This parameter, is used to select the IR emitting channel. **A:** Emitting channel is A and IR code is emitted from A channel. **B:** Emitting channel is B and IR code is emitted from B channel. **C:** Emitting channel is C and IR code is emitted from C channel. **D:** Emitting channel is D and IR code is emitted from D channel. **AB:** Emitting channel is A & B and IR code is emitted from A & B channel respectively. **AC:** Emitting channel is A & C and IR code is emitted from A & C channel respectively. **AD:** Emitting channel is A & D and IR code is emitted from A & D channel respectively. **BC:** Emitting channel is B & C and IR code is emitted from B & C channel respectively. **BD:** Emitting channel is B & D and IR code is emitted from B & D channel respectively. **CD:** Emitting channel is C & D and IR code is emitted from C & D channel respectively. **ABC:** Emitting channel is A & B & C and IR code is emitted from A & B & C channel respectively. **ABD:** Emitting channel is A & B & D and IR code is emitted from A & B & D channel respectively. **ACD:** Emitting channel is A & C & D and IR code is emitted from A & C & D channel respectively. **BCD:** Emitting channel is B & C & D and IR code is emitted from B & C & D channel respectively. **ABCD:** Emitting channel is A & B & C & D and IR code is emitted from A & B & C & D channel respectively.	**A ,** B, C, D, AB, AC, AD, BC, BD, CD, ABC, ABD, ACD, BCD, ABCD
-> Emitting when receive the value	This parameter, is used to emit according to receiving value.	'0' **'1'** '0' / '1'
-> Status	This parameter, is used to determine for selected universal IR code's status value for single mode.	**No** Always response '1' value Always response '0' value According control value

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3.5. REPEAT MODE

Fig 9 : Repeat Mode Parameter Page

3.5.1. Parameters List

PARAMETERS	DESCRIPTION	VALUES
Enable:"Repeat 1..5"	This parameter, is used to enable or disable the repeat 1..5 modes. Repeat mode: system emits one universal IR code several times repeatedly. Channel can be one channel or multichannel.	**Disabled** Enabled
Enable:"Repeat 6..10"	This parameter, is used to enable or disable the repeat 6..10 modes. Repeat mode: system emits one universal IR code several times repeatedly. Channel can be one channel or multichannel.	**Disabled** Enabled
Enable:"Repeat 11..15"	This parameter, is used to enable or disable the repeat 11..15 modes. Repeat mode: system emits one universal IR code several times repeatedly. Channel can be one channel or multichannel.	**Disabled** Enabled
Enable:"Repeat 16..20"	This parameter, is used to enable or disable the repeat 16..20 modes. Repeat mode: system emits one universal IR code several times repeatedly. Channel can be one channel or multichannel.	**Disabled** Enabled

3.6. REPEAT 1..5

The repeat mode is divided 4 main groups. The groups are Repeat 1..5, Repeat 6..10, Repeat 11..15, Repeat 16..20. Every groups can be enabled at the same time. All of the groups have same properties so only 1 group page is described below.
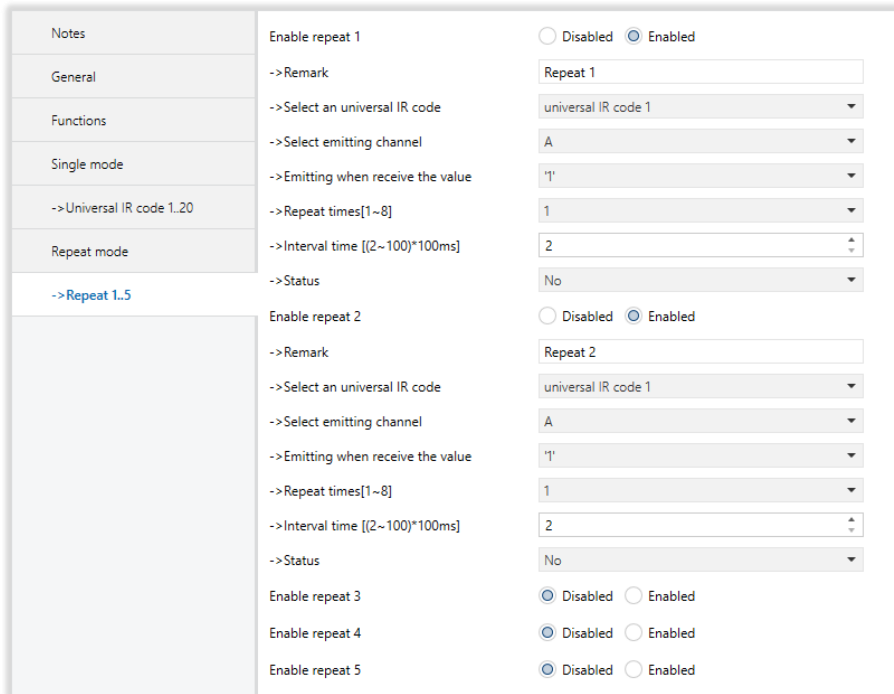
Fig 10 : Repeat 1..5 Parameter Page

3.6.1. Parameters List

PARAMETERS	DESCRIPTION	VALUES
Enable repeat 1..5	This parameter, is used to enable or disable the repeat 1..5 functions.	Enable **Disable**
-> Remark	This parameter, is used to remark IR code when it is learned in the Interra KNX Assistance software. The box can be filled in 40 bytes.	**Repeat 1**
-> Select an universal IR code	This parameter, is used to select an universal IR code as repeat emitting object.	**Universal IR code 1...** ...Universal IR code 150
-> Select emitting channel	This parameter, is used to select the IR emitting channel. **A:** Emitting channel is A and IR code is emitted from A channel. **B:** Emitting channel is B and IR code is emitted from B channel.	**A ,** B, C, D, AB, AC, AD, BC, BD, CD, ABC, ABD, ACD, BCD, ABCD

	C: Emitting channel is C and IR code is emitted from C channel.	
	D: Emitting channel is D and IR code is emitted from D channel.	
	AB: Emitting channel is A & B and IR code is emitted from A & B channel respectively.	
	AC: Emitting channel is A & C and IR code is emitted from A & C channel respectively.	
	AD: Emitting channel is A & D and IR code is emitted from A & D channel respectively.	
	BC: Emitting channel is B & C and IR code is emitted from B & C channel respectively.	
	BD: Emitting channel is B & D and IR code is emitted from B & D channel respectively.	
	CD: Emitting channel is C & D and IR code is emitted from C & D channel respectively.	
	ABC: Emitting channel is A & B & C and IR code is emitted from A & B & C channel respectively.	
	ABD: Emitting channel is A & B & D and IR code is emitted from A & B & D channel respectively.	
	ACD: Emitting channel is A & C & D and IR code is emitted from A & C & D channel respectively.	
	BCD: Emitting channel is B & C & D and IR code is emitted from B & C & D channel respectively.	
	ABCD: Emitting channel is A & B & C & D and IR code is emitted from A & B & C & D channel respectively.	
-> Emitting when receive the value	This parameter, is used to emit according to receiving value.	'0' **'1'** '0' / '1'
-> Repeat times [1~8]	This parameter, is used to set the repeat times of selected universal IR codes according to related channels. The IR code is emitted as selected times.	**1**..8
-> Interval time [(2~100)*100ms]	This parameter, is used to set an interval time for emitting time.	**2**...100
-> Status	This parameter, is used to determine for selected universal IR code's status value for repeat mode.	**No** Always response '1' value Always response '0' value According control value

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3.7. SEQUENCE MODE

The Universal IR Codes can be emitted sequencially at one time but the emitting channel is only one channel. There are 10 functions in total. Every function has 10 steps and each of the function has same properties. When the "Sequence combination x" is enabled, the related function's parameter page will be visible.
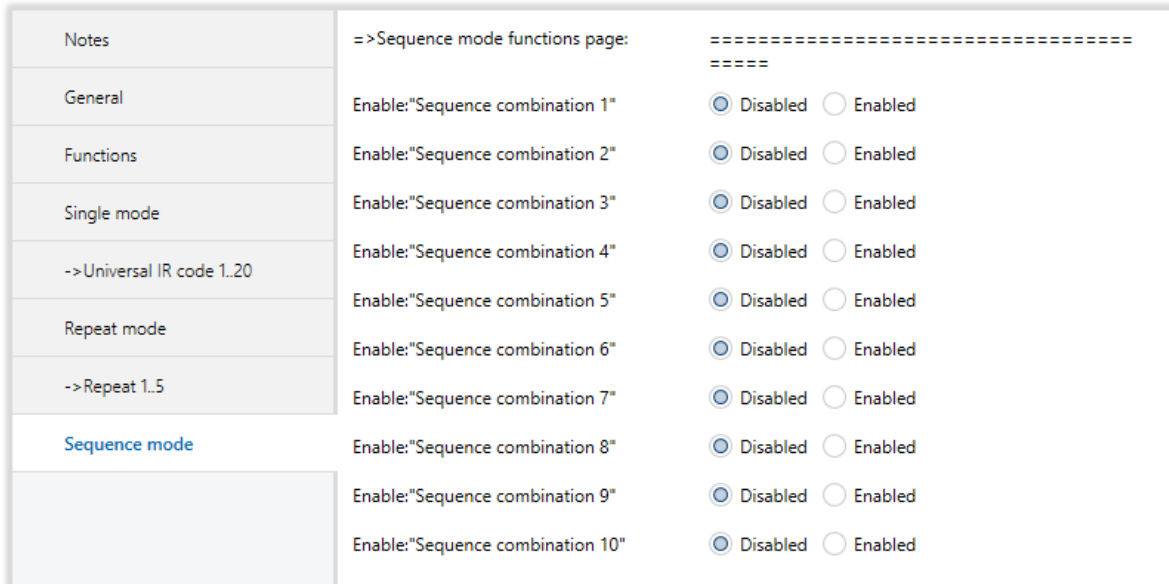
Fig 11 : Sequence Mode Parameter Page

3.7.1. Parameters List

PARAMETERS	DESCRIPTION	VALUES
Enable: "Sequence combination 1"	This parameter, is used to enable or disable sequence combination 1.	**Disabled** Enabled
Enable: "Sequence combination 2"	This parameter, is used to enable or disable sequence combination 2.	**Disabled** Enabled
Enable: "Sequence combination 3"	This parameter, is used to enable or disable sequence combination 3.	**Disabled** Enabled
Enable: "Sequence combination 4"	This parameter, is used to enable or disable sequence combination 4.	**Disabled** Enabled
Enable: "Sequence combination 5"	This parameter, is used to enable or disable sequence combination 5.	**Disabled** Enabled
Enable: "Sequence combination 6"	This parameter, is used to enable or disable sequence combination 6.	**Disabled** Enabled
Enable: "Sequence combination 7"	This parameter, is used to enable or disable sequence combination 7.	**Disabled** Enabled

Enable: "Sequence combination 8"	This parameter, is used to enable or disable sequence combination 8.	**Disabled** Enabled
Enable: "Sequence combination 9"	This parameter, is used to enable or disable sequence combination 9.	**Disabled** Enabled
Enable: "Sequence combination 10"	This parameter, is used to enable or disable sequence combination 10.	**Disabled** Enabled

3.8. SEQUENCE COMBINATION 1

When sequence combination 1 is enabled, step 1 and step 2 will be visible as default and other steps are disabled. Enabled steps must be continuous. E.g. Step 1 to Step N (N must be 2 to 10) and the steps must be sorted. Right configuration : Step 1 to Step 4 enabled or Step 1 to Step 8. Wrong configuration : Step 2 to step 6 enabled or step 7 to step 10 enabled, all of the configuration is invalid.
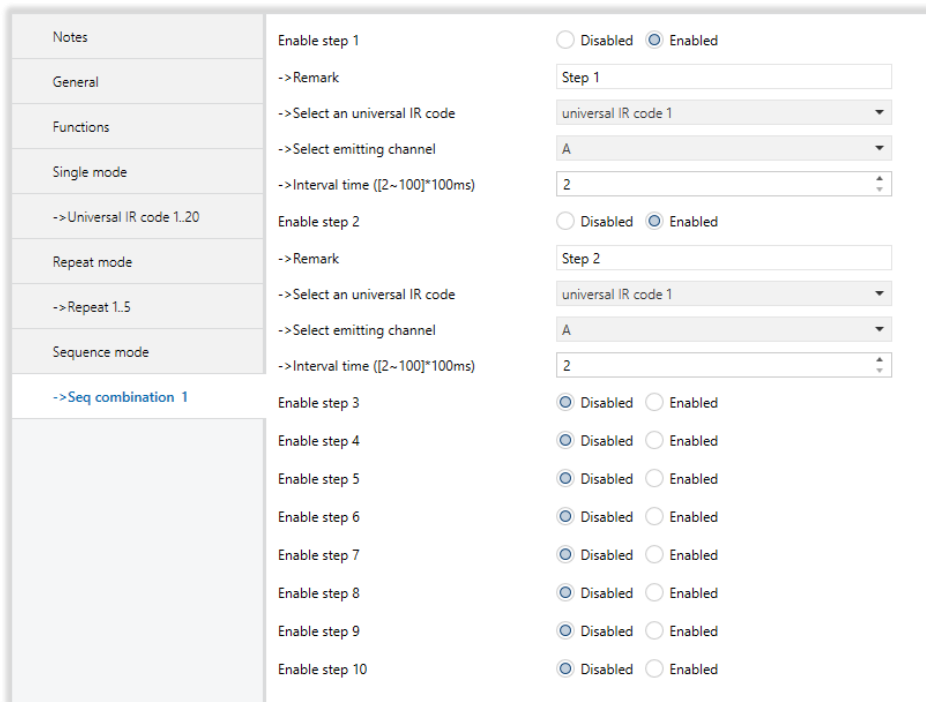
Fig 12 : Sequence Combination Parameter Page

3.8.1. Parameters List

PARAMETERS	DESCRIPTION	VALUES
Enable step 1 . .	This parameter, is used to enable or disable the step 1 to 10 and emit the IR code of the related step.	**Disabled** Enabled

Enable step 10	When step X is enabled, step X+1 to step 10 is insignificant. Total enabled steps are X.	
-> Remark	This parameter, is used to remark IR code when it is learned in the Interra KNX Assistance software. The box can be filled in 40 bytes.	**Step 1**...Step 10
-> Select an Universal IR code	This parameter, is used to select an universal IR code as step emitting object for related step.	**Universal IR code 1...** ...Universal IR code 150
-> Select emitting channel	This parameter, is used to select the IR emitting channel. **A:** Emitting channel is A and IR code is emitted from A channel. **B:** Emitting channel is B and IR code is emitted from B channel. **C:** Emitting channel is C and IR code is emitted from C channel. **D:** Emitting channel is D and IR code is emitted from D channel.	**A** B C D
-> Interval time [(2~100)*100ms]	This parameter, is used to set an interval time between two step emitting IR code. Step 10's interval is an insignificant time due to it is last step.	**2**...100

3.9. AIR CONDITION CONTROL

Air-condition control means system controls air-condition specially, and the emitting channel is one channel. System emits AC IR code in the Air-condition control . Air-condition have main control function and assistant control function.The main control function is temperature, mode, fan speed, swing, ON or OFF function.

The assistant control function is timer control,smart wind,healthy wind,and so on. They can be used in the single mode.In the Air-condition control,there are only the main control function. Control temperature is 20~30℃. Mode is auto,cooling,heating, dehumidification,fan. The fan speed is auto speed , low speed ,middle speed ,hight speed .

Swing is swing and no swing. AC IR code usually is a combination of temperature, mode, fan speed, swing. But some AC IR code contain only one control function. So this control function is independent. Swing control function have combination function and independent function two case.So air-condition have two kinds. One kind is its swing control function is combined,the other is its swing control function is independent. But most of air-conditioner's swing control function is combined.

The number of air-condition control which its swing control function is combined is 11*5*4*2=440. Because there are 11 different temperature, 5 mode, 4 fan speed, 2 swing. And the number of air-condition control which its swing control function is independent is 11*5*4=220. These 440 control function and 220 control function are combined.

The parameter page of the air condition control that needs to be configured for control is shown below. Each parameter is explained in detail in the table below.

Fig 13 : Air Condition Parameter Page

3.9.1. Parameters List

PARAMETERS	DESCRIPTION	VALUES
-> Settings zone:	=================================	====================
Select Emitting Channel	This parameter, is used to select the emitting channels. Possible channels are A, B, C and D.	**A** B C D
Select an AC IR code for OFF	This parameter, is used to select an AC IR code for making OFF the air conditioner. 810 AC IR code can be used for this purpose.	AC IR code 1 **...** **AC IR code 801** ... AC IR code 810

Enable IR code for ON(if is independent)	This parameter, is used to enable or disable the AC IR Code for ON.	**Disabled** Enabled
-> Select an AC IR code for ON	This parameter, is used to select an AC IR code for making ON the air conditioner. 810 AC IR code can be used for this purpose.	AC IR code 1 **...** **AC IR code 802** ... AC IR code 810
Check current when ON/OFF	This parameter, is used to check the current when air condition is ON or OFF.	**Disabled** Enabled
Select swing control	This parameter, is used to select the swing control mode. **Combination:** The swing control function of air-condition is combination. **Independent:** The swing control function of air-condition is independent.	**combination** independence
-> AC IR code for horizontal swing	This parameter, is used to select AC IR code for horizontal swing.	AC IR code 1 **...** **AC IR code 803** ... AC IR code 810
-> AC IR code for stopping horizontal swing	This parameter, is used to select AC IR code for stopping horizontal swing.	AC IR code 1 **...** **AC IR code 804** ... AC IR code 810
-> AC IR code for vertical swing	This parameter, is used to select AC IR code for vertical swing.	AC IR code 1 **...** **AC IR code 805** ... AC IR code 810
-> AC IR code for stopping vertical swing	This parameter, is used to select AC IR code for stopping vertical swing.	AC IR code 1 **...** **AC IR code 806** ... AC IR code 810
AC status recovery	This parameter, is used to enable or disable the AC status recovery. If enable the AC status will recovery when power recovery.	**No** Yes

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AC status response	This parameter, is used to set whether response AC status.	**No** Yes
-> AC mode status 1 bit	This parameter, is used to set which AC mode statuses will be responsed.	**Actived response '1'** All responsed
-> AC fan status 1 bit	This parameter, is used to set which AC fan statuses will be responsed.	**Actived response '1'** All responsed
-> Air-condition control functions page:	=====================================	====================
Enable:"Automatic	This parameter, is used to enable or disable the Automatic function.	**Disabled** Enabled
Enable:"Cooling	This parameter, is used to enable or disable the Cooling function.	**Disabled** Enabled
Enable:"Heating	This parameter, is used to enable or disable the Heating function.	**Disabled** Enabled
Enable:"Dehumidification	This parameter, is used to enable or disable the Dehumidification function.	**Disabled** Enabled
Enable:"Fan	This parameter, is used to enable or disable the Heating function.	**Disabled** Enabled

3.10. CURRENT DETECT

Current detection is setted for an intelligent switch. The control panel have a key which have ON and OFF order.When TV is ON, if you press key ON the controller don't emit infrared; if you press key OFF the controller emit infrared and turn off TV. When TV is OFF, if you press key ON, the controller emit infrared and turn on TV; if you press key OFF, the controller don't emit infrared.

Fig 14 : Current Detect Parameter Page

3.10.1. Parameters List

PARAMETERS	DESCRIPTION	VALUES
Remark	This parameter, is used to set the remark of the current detect parameter page. Up to 40 charachter can be written into this box.	**On/off**
>> Select an universal IR code for ON 1	This parameter, is used to select an universal IR code for ON 1. The universal IR code is power IR code. If universal IR code N is selected,"Enable universal IR code N" in the single mode is recommended to disable or don't assign group address to it.	Invalid Universal IR code 1 ... **universal IR code 149** ... Universal IR code 150
>> Select an universal IR code for ON 2	This parameter, is used to select an universal IR code for ON 2. If universal IR code N is selected,"Enable universal IR code N" in the single mode is recommended to disable or don't assign group address to it.	**Invalid** Universal IR code 1 ... Universal IR code 150
>> Select an universal IR code for ON 3	This parameter, is used to select an universal IR code for ON 3. If universal IR code N is selected,"Enable universal IR code N" in the single mode is recommended to disable or don't assign group address to it.	**Invalid** Universal IR code 1 ... Universal IR code 150
>> ON:Emitting IR interval time(n*100ms)	This parameter, is used to set interval time of emitting ON IR code.	2...100
-> Select an universal IR code for OFF 1	This parameter, is used to select an universal IR code for OFF 1. If universal IR code N is selected,"Enable universal IR code N" in the single mode is recommended to disable or don't assign group address to it.	Invalid Universal IR code 1 ... **Universal IR code 150**
-> Select an universal IR code for OFF 2	This parameter, is used to select an universal IR code for OFF 2. If universal IR code N is selected,"Enable universal IR code N" in the single mode is recommended to disable or don't assign group address to it.	**Invalid** Universal IR code 1 ... Universal IR code 150
-> Select an universal IR code for OFF 3	This parameter, is used to select an universal IR code for OFF 3. If universal IR code N is selected,"Enable universal IR code N" in the single mode is recommended to disable or don't assign group address to it.	**Invalid** Universal IR code 1 ... Universal IR code 150
>> OFF:Emitting IR interval time(n*100ms)	This parameter, is used to set interval time of emitting OFF IR code.	**2**...100

Select emitting channel	This parameter, is used to select the emitting channel. Possible channels are A, B, C and D.	**A**
		B
		C
		D
Current threshold when ON(mA)	This parameter, is used to set the current threshold when detecting current. This value is the digital value of current which can turn on the equipment.	0...**100**...4000
Switching status	This parameter, is used to enable or disable response switching status.	**No**
		Always response
		Response after changed
Enable report current	This parameter, is used to enable or disable report current value.	**Disabled**
		Enabled
-> report mode	This parameter, is used to set report mode.	**Report periodically**
	Report periodically : Report current value per check period.	Report after changed
		Report after read
	Report after changed : Just report current value after current changed.	
	Report after read : Just report current value after read device.	
-> Check period(1...65535s)	This parameter, is used to set check period.	1...**5**...65535

3.10.2. How to Get the Current Threshold

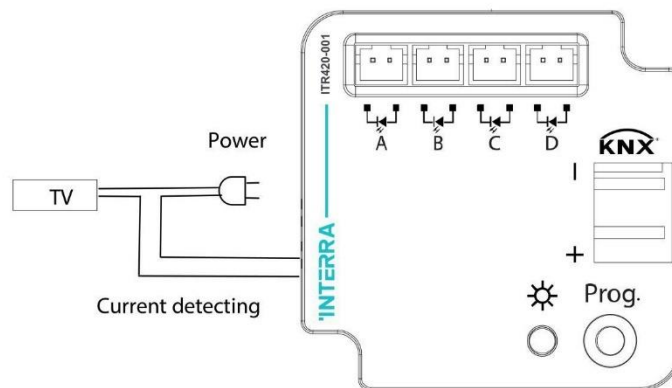> Figure 15 shows the current detection circuit diagram.

Fig 15 : Current Detect Parameter Page

> ➢ ***Configuration "Current detection settings" object group address***
>
> Open the Interra IR Emitter database with ETS. Enable current detection settings. Configure the "Current detection – Report current(mA)"

> ➢ ***Compute the current threshold***
>
> Open the Interra IR Emitter database with ETS. Open group monitor and start EIB connection. Power on the related equipment(TV, DVD, etc...) and Interra IR Emitter. Power on the electronic equipment, long press programming button about 5 seconds, and the LED will light. After release the button, the LED will be flicker. Meanwhile, the LED will be flicker 3 minutes. In the 3 minutes, V1 and V2 must be writed down. Interra IR Emitter sends a digital value of current to KNX bus like per second. ETS group monitor can receive the data. Write down the highest reasonable value V1. For instance, a group of values received by ETS group monitor such as 712, 679, 631, 777, 793, 722, 799, 686, 694, the highest reasonable value V1 is 799. Power off the electronic equipment,

4. ETS OBJECTS AND DESCRIPTIONS

In this section will introduce the communication objects, The objects will show by setting the function enable .

4.1. GENERAL

At the following table, the objects associated with the general parameter page are described.

Object Name	Function	Type	Flags
General	Heartbeat telegram	1 bit	C T

This communication object used to set the heartbeat telegram. Cycle send telegram '1' and telegram '0' at set intervals.

4.2. SINGLE MODE

At the following table, the objects associated with the single mode parameter page are described.

Object Name	Function	Type	Flags
Single Mode	IR 1...150 (1-emitting)	1 bit	C W U

This communication object is used to emitting IR code. If send value "1", the module will emit "on" instruction; if send value "0", the module will emit "off" instruction.

Note : Object numbers are between 11-160.

4.3. REPEAT MODE

At the following table, the objects associated with the repeat mode parameter page are described.

Object Name	Function	Type	Flags
Repeat Mode	Repeat IR (1-emitting)	1 bit	C W U

This communication object is used to start repeat mode. If send value "1", the module will emit repeat IR code on; if send value "0", the module will emit repeat IR code off.

Note : Object numbers are between 300-311.

4.4. SEQUENCE MODE

At the following table, the objects associated with the sequence parameter page are described.

Object Name	Function	Type	Flags
Sequence Mode	Sequence 1...10 (1-start)	1 bit	C W U

This communication object is used to start or stop IR code sequence. If send value "1", the module will start emit IR code sequence; if send value "0" the sequence will stop.

Note : Object numbers are between 351-360.

4.5. AIR CONDITION

Object Name	Function	Type	Flags
AC switch	Switch (1-ON, 0-OFF)	2 bytes	C W U

This communication object is used to emit the IR code of switching the air condition on or off.

Object Name	Function	Type	Flags
AC Temperature	Setpoint temperature (16...35)	2 bytes	C W U

This communication object is used to emit the IR code of setpoint temperature of air condition.

Object Name	Function	Type	Flags
AC Mode	Mode (1 byte)	1 byte	C W U

This communication object is used to emit IR code for changing AC mode. If you send "1" the air condition will be automatic mode.

Object Name	Function	Type	Flags
AC Mode	ON CMD for automatic	1 bit	C W U

This communication object is used to emit IR code for the on CMD for automatic. If you send "1" the air condition will be automatic mode.

Object Name	Function	Type	Flags
AC Mode	ON CMD for cooling	1 bit	C W U

This communication object is used to emit IR code for the on CMD for cooling. If you send "1" the air condition will be cooling mode.

Object Name	Function	Type	Flags
AC Mode	ON CMD for heating	1 bit	C W U

This communication object is used to emit IR code for the on CMD for heating. If you send "1" the air condition will be heating mode.

Object Name	Function	Type	Flags
AC Mode	ON CMD for dehumidification	1 bit	C W U

This communication object is used to emit IR code for the on CMD for dehumifidication. If you send "1" the air condition will be dehumidification mode.

AC Mode	ON CMD for fan	1 bit	C W U

This communication object is used to emit IR code for the on CMD for fan. If you send "1" the air condition will be only fan mode.

AC Fan	Fan speed (1 byte)	1 byte	C W U

This communication object is used to emit IR code for the on CMD for fan. If you send "1" the air condition will be only fan mode.

AC Fan	ON CMD for automatic	1 bit	C W U

This communication object is used to emit IR code for the on CMD for fan. If you send "1" the air condition will be only fan mode.

AC Fan	ON CMD for low speed	1 bit	C W U

This communication object, is used to emit IR code for the on CMD for fan low speed. If you send "1" the air condition will be fan low speed.

AC Fan	ON CMD for medium speed	1 bit	C W U

This communication object is used to emit IR code for the on CMD for fan medium speed. If you send "1" the air condition will be fan medium speed.

AC Fan	ON CMD for high speed	1 bit	C W U

This communication object is used to emit IR code for the on CMD for fan high speed. If you send "1" the air condition will be fan high speed.

AC Wind	Horizontal (1-swing, 0-stop)	1 bit	C W U

This communication object is used to emit IR code for the horizontal AC wind. If you send "1" the AC wind of the air condition will be on.

Status: AC Wind	Switch (1-ON, 0-OFF)	1 bit	C R T

This communication object is used to response the status of AC switch. If AC switch status is on this object will response on, else response off.

Status: AC Wind	Temperature (16...35)	2 bytes	C R T

This communication object is used to response the temperature of AC temperature. It will response the temperature when changing the temperature of AC.

Status: AC Mode	Mode	1 byte	C R T

This communication object is used to response the status of AC mode. It will response the status when the AC is automatic mode.

Status: AC Mode	On CMD for automatic	1 bit	C R T

This communication object is used to response the status of AC mode. It will response the status when the AC is automatic mode.

Status: AC Mode	On CMD for cooling	1 bit	C R T

This communication object is used to response the status of AC mode. It will response the status when the AC is cooling mode.

Status: AC Mode	On CMD for heating	1 bit	C R T

This communication object is used to response the status of AC mode. It will response the status when the AC is heating mode.

Status: AC Mode	On CMD for dehumidification	1 bit	C R T

This communication object is used to response the status of AC mode. It will response the status when the AC is dehumidification mode.

Status: AC Mode	On CMD for fan	1 bit	C R T

This communication object is used to response the status of AC mode. It will response the status when the AC is fan mode.

Status: AC Fan	Fan speed (1 byte)	1 byte	C R T

This communication object is used to response the status of AC Fan. It will response the fan speed status when the fan speed changed.

Status: AC Fan	ON CMD for automatic	1 bit	C R T

This communication object, is used to response the status of AC Fan. It will response the fan speed status when the fan speed is automatic mode.

Status: AC Fan	ON CMD for low speed	1 bit	C R T

This communication object, is used to response the status of AC Fan. It will response the fan speed status when the fan speed is low speed.

Status: AC Fan	ON CMD for medium speed	1 bit	C R T

This communication object, is used to response the status of AC Fan. It will response the fan speed status when the fan speed is medium speed.

Status: AC Fan	ON CMD for high speed	1 bit	C R T

This communication object is used to response the status of AC Fan. It will response the fan speed status when the fan speed is high speed.

Status: AC Wind	Horizontal (1-swing, 0-stop)	1 bit	C R T

This communication object is used to response the status of AC wind horizontal status. It will response the AC wind status when the AC wind is horizontal wind.

Status: AC Wind	Vertical (1-swing, 0-stop)	1 bit	C R T

This communication object, is used to response the status of AC Wind vertical status. It will response the AC wind status when the AC wind is vertical wind.

Current detection	Switching ON/OFF	1 bit	C W T U

This communication object, is used to set whether detect current.

Current detection	Switching status	1 bit	C R T

This communication object is used to response the status of current detection switch. If status is on it will response on, else response off.

Current detection	Report current (mA)	2 bytes	C R T

This communication object, is used to response the value of current.

CONTACT INFORMATION

THE INTERRA WEB SITE

Interra provides documentation support via our web site www.interra.com.tr. This web site is used as a means to make files and information easily available to customers. Accessible by using your favorite Internet browser, the web site contains the following information:

- Information about our products and projects.

- Overview of Interra company and values.

- Product Support: Data sheets, product manuals, application descriptions, latest software releases, ETS databases and archived softwares.

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