

Comprehensive LoRa measurement



C-I 200, a LoRa tester, equips with four sets of TRX Ports and supports Sub-GHz and 2.4 GHz. It not only provides complete parameter settings for LoRa and FSK modulation signals but also allows user to define required Payload. Four sets of TRx Ports conduct tests on for DUTs. Under the pipeline production mode, the production capacity can be substantially increased.

The standard rack size tremendously decreases the equipment space requirement. Collocating with test accessories such as computer control and isolation box can rapidly construct an efficient production test system.

Features Highlight:

- O 4 sets of RF TRx Ports (switching Type)
- O Support LoRa/FSK modulation signals
- O Support Sub-GHz and 2.4 GHz
- O Complete PC Software and built-in MP Test function
- O Built-in FCC, ETSI test regulations
- O Built-in temperature control calibration signal
- O Support SPI, UART, I2C interfaces to directly control DUT (must collocate with IO Extension, C-I2OI)
- O Simultaneously test DUT's current consumption (must collocate with PPH-1503 high precision DC power supply)

Frequency Range

- Transmitter: 433.92M, 490M, 868M, 915M, 923M, 2400 MHz
- Receiver: I MHz to 3.25 GHz, Resolution: I Hz
- · Output Power Level Range: -10 ~ -100 dBm, Resolution: 1 dB
- Input Power Level
- Maximum measurement level: +25 dBm
- Modulation Type: LoRa, FSK, GFSK
- \cdot Dimension & Weight: 434(W) x 44(H) x 554(D) mm, 7.7 kg



Optional Accessories

IO Extension, C-I20I



4-wire SPI interface x 4 UART interface x 4 I2C interface x 1 The output current is up to 300 mA





Operating Cycle with pipeline mode

Simply Reliable

Provide PC Software with a Complete Functionality







C-1200 PC Software							- 0	×
					다비고	ISTEK	Simply Reliable	
ile Select Mode	Upgrade About				GWINSTEK,C-1200,S	ample001, "V3.03.180	717_26* 15:0	9 : 50
Comment Trigger	Output 1 Tripper Output - Sen - Se	2 Dual USB	Select Wode Transmitter(DVT KK) = C.LoRia FSK	Receiver@VFTXp = • Lofta FSK	RUTI INOU Put		Repeat : 10 Space (s) : 1	
AP Test DUT General Setti Band Select	ing 915 MHz	PASelect	2 FR 915 000000 \$-MP4	□ #2 915 000000 \$ MHz □ #3	915 000000 © MHz	Load	Run	
RF Frequency: 915.000000 © MHz	Preamble: 40 © symbols	PA_BOOST Input Port Select	Spreading factor: Bandwidth (kHz):	977 2 599 2 599 2 591 27.8 2 10.4 2 15.6	911 912 912 912	Save Config File	Stop	
Output power: 13 4 dBm	Payload length: 30 9: bytes	Poling(1~4) Interval (x) 5	Coding rate:	245 046 047	48	D	100	
DUT TX 🛛			DUTRX 🕑				433	
DATA	Repeat I 1 0		Stat.	The Deg -100 0 aller 10 0 aller	AL	Log:		
2 POWER	Target 1 18 (C dt	im PiFa: 3 ≎ d		Tarpet -100.0 0 dbm Pdf	at 100 0 m	Section 9 - 90 dBm R0211 : - 45 dBm ZNR 1 8:00	HASE .	^
FEI (Before cal.)	PIF # 2 2 9 0		SNR .	Tarpet 40 0 00 Pdf	41.30.0.00	>40	27.02	
FEI WRITEBACK			Sensitivity			Dealerry -100-dom	FINES	
FEI (After cal.)	PiFa: 3 0 p	m ()	Power Consum	ntion 🕗 IP Address : 112.	160 . 1 . 110	DUT TICMole: 109.3 DUT TICMole: 33.9 DUT RICMole: 33.9 Dute: 23.5 m 0. DAT	nA PAIL A PAIL	
Bandwidth	PIF ± 10.0 0 %		DUT TX Mode	Taget: 110.0 0 mA PIF	£1 10.0 9.%	Ship: 174 mA PAC		
Symbol Period	2.048 ms	PF # 150 0 %	DUT RX Mode	Target 25.0 0 mA P/F	1 100 0 %	Coughted in: 33,054 s Pinith!!		
TOA	207 36 ms	PF± 50 0 %	Sleep	Target 17.0 g mA P/F	11 100 0 N	Sae Report	Gear	



All LoRa Test Solution C-1200



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Connect C–I 200 and PC by a LAN cable.



Turn on the C-I200.

Check if the LAN LED indicators is lit.



Set the LAN configure

The factory default IP address for C-1200 is 192.168.1.100, so the IP address on the PC should be in the same domain.



Run PC software

Confirm the IP address and press Connect.

C-1200 PC Software									– 🗆 X
							GWI	NSTEK	Simply Reliable
File Select Mode	Other Upgrade A	bout Key	/:			SN:			16 : 05 : 39
IP Address: 192	168 . 1 . 100	Connect US	B Select Mode Transmitter(DUT R LoRa O FSP	X): Recei (O Loi	ver(DUT TX): Ra O FSK 🔲 M	IP Test	RX/TX In/Out P	Port3 Port4	Temperature C
Band Select:	LoRa Transmitter Setting D	ivity Test							
EU433 ~ Range:433 ~ 435 MHz	General Setting PA ramp: 40	∖_∕ ∙us S	preading SF7	·	Low datarate	ON	O OFF	TX Timing Specifi Equivalent Bit rate:	cation
RF Frequency: 433.920000 MHz		la	actor .		Implicit header:	ON	O OFF	Symbol Time:	
Increment: + 0.00 + KHz	Output power: -10	.0 🖶 dBm C	Coding rate: 4/5	•	Payload CRC:	ON	O OFF	Preamble Duration: Payload Duration:	
TX RF Output	Data mode: Packe	t v B	andwidth: 125	▪ kHz	FHSS:	O ON	OFF	Time on Air:	
Repeat: 1	Packet Edit	Preamable Length	Payload Data	7 10 5 0 7 10	-707 1007 1000500	70057000	0570000405	-	Add
Space(s):	Preamble length:	250 20	48656C6C6F205749 4757496E7374656B	46F20746 4E4558542 20432D3132	049207769736820 230302077696666	796F7520 20626520	0F720D010E 06576657279 07468652062	20737563636	
USB Box interface :	20 symbols	20 <	4757496E7374656B	20432D3132	230302077696C6C	20626520	07468652062	65737420736 🗸	Edit
OFF Time on Air :	Payload length:	Data: HEX C) BIN						Delete
 RF Trigger level: Level offset:	38 bytes	4757496E737465	56B20432D3132303020	77696C6C2	062652074686520	62657374	12073656C60	C2E	Payload To Buffer

After the connection is successful

After the connection is successful, the basic information about C-1200 will display at the top right of the main window.

GWINSTEK, C-I 200, Serial Number, Version, Time

C-1200 PC Software									- 0 ×
						_	Gu	INSTE	Simply Reliable
File Select Mode	Other Upgrade At	oout Key:	:	-		GWINST	EK,C-1200	,GES210423,"V5.01.1904	18_33" 11 : 44 : 15
Connect Trigger Disconnect	Output 1 Trigger Output 2 • Sen • Sen	Dual Sen	USB	Select Mode Fransmitter(DUT RX): DoRa O FSK	Receiver(DUT TX): O LoRa O FSK	MP Test	Port1	Port2 Port3 Port4	Temperature 25.7 °C
Band Select:	LoRa Transmitter Setting DU	IT Sensitivity Test							
FU433 ×	General Setting							TX Timing Specif	cation
Range:433 ~ 435 MHz	PA ramp: 40	• us fa	preading	SF7 ·	optimize :	O ON	OFF	Equivalent Bit rate	: 5468.75 bps
RF Frequency:		idi						Symbol Time : 1.0)24 ms
433.920000 🗧 MHz	Output power: 10	0 10			Implicit header:	O ON	OFF		
Increment: +	Output power.	Cr	oding rate:	4/5 -				Preamble Duration	: 28.928 ms
0.00 🜩 kHz -					Payload CRC:	O ON	OFF	Payload Duration :	64.512 ms
TX RF Output	Data mode: Packe	t ~ Br	andwidth:	125 • kHz	EH66-	O ON	OFF	Time on Air : 02.4	1 ma
TX RF Output					1100.	0 0	0 0	TITLE OTTAIL . 93.4	41115
Repeat: 1	Packet Edit	Preamable Length	Payload [Data				^	
Space(s): 1 ÷		30	57656C6	36F6D6520746F2074	6573742074686520	0706572666	F726D61	6E6365206F662	Add
State	Preamble length:	250	48656C6	C6F2057494E455854	2049207769736820	0796F75206	57665727	920737563636	
USB Box interface :	20 💠 symbols	20	47574968	E7374656B20432D31 E7374656B20432D31	3230302077696C60	C20626520 C20626520	74686520 74686520	6265737420736	Edit
SPI		<	1					>	
OFF	Device of leastly								Delete
Time on Air :	Payload length:	Data: • HEX O	BIN	400000077000000	20000000074000000	000057074	0700500	0005	
93.44 ms RF Trigger level:	38 bytes	4/5/496E/3/4656	0B20432D3	13230302077696C60	200265207468652	0026573742	20736560	002E	Deuteert
A 10		1							Payload Io

Select TX or RX mode:

	Transmi	tter (T	X) M	ode	Rece	iver (R)	<) Mode	
C-1200 PC Software								- 0 ×
						Gu	INSTEK	Simply Reliable
File Select Mode	Other Upgrade Ab	oout Key	/:	-		GWINSTEK, C-1200,	GES210423, "V5.01.190418_3	3" 11 : 44 : 15
Connect Trigger Disconnect	Output 1 Trigger Output 2 • Sen • Sen	Dual Sen	USB Sel Tra	lect Mode nsmitter(DUT RX): LoRa O FSK	Receiver(DUT TX): O LoRa O FSK	MP Test Port1	n/Out Port Port2 Port3 Port4	Temperature 25.7 °C
Band Select:	LoRa Transmitter Setting DU	T Sensitivity Test						
EU/33	General Setting						TX Timing Specification	on
Range: 433 ~ 435 MHz	PA ramp: 40	∙us fa	preading	6F7 •	Low datarate optimize :	○ ON	Equivalent Bit rate : 54	168.75 bps
RF Frequency:							Symbol Time : 1.024 n	ns
433.920000 🗧 MHz	Output power:	0 🛋 dBm			Implicit header:	O ON	Deservice Desertion - 0	0.000
Increment: +		C C	Coding rate: 4	4/5 •			Preamble Duration : 2	8.928 ms
0.00 🜩 kHz -					Payload CRC:	O ON	Payload Duration : 64.	512 ms
TX RF Output	Data mode: Packet		andwidth: 1	25 • kHz	51100			
TX RF Output					FHSS:	O ON OFF	Time on Air : 93.44 ms	\$
Reneat: 1	Packet Edit						1	
Reseate): 1		Preamable Length	1 Payload Da	ta E6D6520746E2074	16573772077696530	070657266657260616	E6265206E662	Add
Space(s).	Preamble length:	250	48656C6C6	F2057494E455854	1204920776973682	0796F7520657665727	920737563636	
State		20	4757496E7	374656B20432D31	3230302077696C6	C20626520746865206	6265737420736	F -04
SPI	20 Symbols	20	4757496E7	374656B20432D31	3230302077696C6	C20626520746865206	6265737420736 🗸	Edit
Low datarate optimize :	L	<					>	
OFF	Payload length:							Delete
Time on Air : 93.44 ms	r uyiouu iengin.	4757496E72746	56B20/32D243	230302077606060	206265207469652	062657374207365604	3C2E	
RF Trigger level:	38 bytes	4101400E13140	000204020010	230302077090000	200203207400032	002031314201303000		Device of Ta
a in		1					F	avioad to

Transmitter (TX) Mode

LoRa/FSK Setting parameters

	Select	Mode Ra/FSK Mode	(;	3) Select the LoRa or FS	Transmitte K Mode	er(DUT F	RX): (4) T	⁻ he speci [.] p with gr	fied port will light een indicator.
	Sp	ectrum(Specificat	ion) Mode	 Select Mo Transmitt LoRa 	ode ter(DUT RX): O FSK			RX/TX In/Out	Port Port3 Port4
		C-1200 PC S ftware					1		- 0 ×
		File Calent Mar	la Othan Unanda Abart				GYI	NSTEK	Simply Reliable
		File Select Mod	le Other Upgrade About	Key: USB Select	- Mode		GWINSTEK,C-1200,GE	ES210423,"V5.01.1	90418_33" 15 : 07 : 03
2		Disconnect	gger Output 1 Trigger Output 2 I ▼ Sen ▼ Sen	Sen Out	Ra OFSK O	ceiver(DUT TX): LoRa O FSK	MP Test Port1 Port2	Port3 Port4	28.1 C
Band Sele	ect:	Band Select	LoRa Transmitter Setting DUT Se	nsitivity Test					
EU433	~ +	EU433 、	General Setting	Spreading		Low datarat		TX Timing Spe Equivalent Bit ra	ecification ate : 5468.75 bps
EU433		Range:433 ~ 435 MHz RF Frequency:	PA ramp: 40	• us factor :	SF7 •	optimize :		Symbol Time :	1.024 ms
CN490		433.920000 🗧 MH	Z Output power: -10.0	+ dBm Coding rate:	A/E -	Implicit head	ier: O ON	Preamble Durat	tion : 28.928 ms
US915		0.00 + kHz		Coung rate.	4/5	Payload CR	C: O ON OFF	 OFF Payload Duration: 64.512 ms OFF Time on Air: 93.44 ms 726D616E6365206F662. 76657279207376363836. 16865206265737420736. 173656C6C2E Payload To Buffer Ormat and preamble 	
AS923 2.4 GHz		TX RF Output	Data mode: Packet	- Bandwidth:	125 • kHz	z FHSS:	O ON ● OFF	OFF Payload Duration : 64.512 ms OFF Time on Air : 93.44 ms 160616E63665206F662. 165727920737563636. 1655206265737420736. 1665206265737420738. 1665206265737420738. 1665206265737420738. 1665206265737420738. 16752000000000000000000000000000000000000	
-		Repeat: 1	Packet Edit	amable Length Payload D	ata			^	
		Space(s): 1	30 Preamble length: 250	57656C63 9 48656C60	6F6D6520746F207	46573742074686	6520706572666F726D616E	6365206F662	Add
		State USB Box interface	20 symbols 20	4757496E 4757496E	7374656B20432D3	13230302077696 13230302077696	C6C206265207468652062	65737420736 65737420736	Edit
		SPI	<					>	
		OFF Time on Air :	Payload length: Da	ta: • HEX O BIN		000000000000000000000000000000000000000		05	Delete
		93.44 ms RF Trigger level:	38 bytes 47	5/496E/3/4656B20432D3	13230302077696C6	C206265207468	8520626573742073656C6C	2E	Payload To
		Level offset:							Buffer
		6							
			Output data sett	ina /editina: S	elect or ed	lit navloa	ud data format	and pred	amble
		5	length to send ou	ut.		in payloa			
		General Settir	ng						
		PA ramp:	40 • us	Spreading factor :	SF7	•	Low datarate optimize :	\bigcirc ON	 OFF
							Implicit header:	O ON	OFF
		Output power:	-10.0 🖶 dBm	¹ Coding rate:	4/5	-			
							Payload CRC:	O ON	OFF
		Data mode:	Packet ~	Bandwidth:	125	▪ kHz	FHSS:	\bigcirc ON	 OFF
	A	fter selectin	g or setting, the	relevant time o	of TX Timiı	ng Speci	fication (TOA)	will be c	alculated.
6	Pa	yload To	Atter setting	/editing, you n	nust press	the Payl	oad Io Buffer	so that	
		Buffer	the C-1200 P	°C Software wi	ll transfer	the setti	ing parameters	s to the	
		•	C-1200.						
		Note: If	you reset/ edit, y	ou must press	the Data (Output T	o Buffer butto	n again.	
	TVDD	0.1.1	A.C						
U	TX RF	Output	Atterward, just	press the TX	Data Outp	out butto	n at the top of	the main	1
	TX R	F Output	window to send	the TX signal					

Editing output data

There are two methods to edit output data

Method I

You can directly edit the codes in the TX mode: Preamble/ Payload Data code.

Packet Edit				
	Preamable Length	Payload Data	^	
	30	57656C636F6D6520746F20746573742074686520706572666F726D616E6365206F662.		Add
Preamble length:	250	48656C6C6F2057494E4558542049207769736820796F7520657665727920737563636		
	20	4757496E7374656B20432D313230302077696C6C20626520746865206265737420736		
20 🗧 symbols	20	4757496E7374656B20432D313230302077696C6C20626520746865206265737420736		Edit
	<	>		
Daula ad langth:				Delete
Payload length.	Data: HEX O	BIN		
38 bytes	4757496E7374656	B20432D313230302077696C6C2062652074686520626573742073656C6C2E	_	
				Payload To Buffer

Method 2



DUT Sensitivity Test

Validate sensitivity of RX receiving power (10~-100dBm) of DUT in the C-1200 PC software directly.

It is required to connect DUT, via USB cable, to C-1200 before sensitivity test.

	DUT C-1201	USB		
DUT Setting PA Select RF0 RF0 RA BOOST	DUT Reset: Reset	DUT Payload Data ○ Default	Test Parameters Start: -10 + dBm Stop: -100 + d	Bm Step: 10 ∓ dB
Spreading factor: SF7 • Coding rate: 4/5 •	Check FEI: Check FHSS: ○ ON ● OFF	○ ASCII	EXT Attenuator: 0(None) v dB Run t	ype: Run finished Stop on error
Bandwidth (kHz): 125 • Time on Air : 81.152 ms	Preamble: 12 🔹 symbols Payload length: 38 🔹 bytes	32D313230302077696C 6C20626520746865206 26573742073656C6C2E	Package 1 = Error number: BER target: 0.5 = Time	type: OPER • BER out: 1 + s
	BER Graph		Sensitivity : Completed In Fail Point:	-10 dBm
Save Log File Clear	0		-100dldBm	Stop

Receiver (RX) Mode

LoRa/FSK Setting parameters

Select Mode LoRa/FSH Spectrum	< Mode (Specification) Mode	2 Sel	ect LoRa Receive LoRa	or FSK Mod r(DUT TX): O FSK	e (3)	The spec up with g	ified port will light reen indicator. trent Port Port4
	C-1200 C Software						– 🗆 X
						요쁘미	STEK Simply Reliable
	File Select Mode Other	Upgrade About	Key:	-	GW	/INSTEK,C-1200,GES	210423,"V5.01.190418_33" 15 : 47 : 10
4	Connect Trigger Output 1 Disconnect Sen	Trigger Output 2 Dual Sen Sen	USB Select Transn O Lol	Mode hitter(DUT RX): Recei Ra O FSK I Lo	iver(DUT TX): Ra O FSK MP Test	Port1 Port2 Port	Temperature 27.7 C
Band Select:	Band Select: Parameter S	etting DUT Result RX Data C	omparison				
EU433 EU433 CN490 EU868 US915 AS923 2.4 GHz	Band Select: EU433 ↓ Tester S lange: 433 ~ 435 MHz RF Frequency: 433.92000 ⊕ MHz increment: ↓ 0.00 ⊕ kHz DUT TX Output TX DUT TX Output Space (s): 1 State USB Box interd SPI Low datarate optmize : OFF Time on AF: 37.12 ms RF Trigger level: 0 dB 0 dB	etting Mode etting Mode Ref. Value: Ref. Pos: Scale/Div: Meas length: -Max lengt Symbol format: ASCII Waveform Ref © Normal 1 © Normal X axis Type O Time length rigger Mode Positive O Positive O Ref. Positive O Ref. Positive O Ref. Meas length: (Ref. Pos: Scale/Div: Meas length: ASCII Waveform Ref. O Normal X axis Type O Time length rigger Mode O Positive O Ref. O Ref. (Ref. Pos: Scale/Div: Meas length: ASCII Waveform Ref. O Normal X axis Type O Time length rigger Mode O Positive O Ref. O FF (RF trigger)	0.000 ⊕ kHz 5 ⊕ 20.000 ⊕ kHz 100 ⊕ h=255bytes- → bolution ○ High RF Trigger level: Trigger delay: Trigger mode: ○ Free run	Symbol Setup idev: +/- 35.0 (*) kHz itt rate: 19.20 (*) kbps itter bandwidth: kHz Coding(DC-free): None(OFF) (*) 0 dBm 0 ms Normal (*)	DUT LoRa Setting M Spreading factor: Coding rate: Bandwidth(kHz): Preamble length: Payload length: Low datarate optimize: Implicit header: AGC auto: LNA boost: IQ Invert: Payload CRC: DUT Reset:	SF7 • 4/5 • 125 • 20 • 1 • 0 0 18 0 0 0 18 0 0 0	DUT RF Frequency: 433.92000 • MHz Increment: 0.00 • KHz • PA Select Output power: 13 • dBm • RFO • PA_BOOST DUT Payload Data • Default • User define TX Data :38 Bytes 47574965737485682043203132 30302077696C5202625207468 652026573742073656C5C28 5220267573742073656C5C28 5220267573742073656C5C28 5220267573742073656C5C28 • • • • • • • • • • • • • • • • • • •

(5) Receive function setting: RF output frequency fine-tune (3MHz for up and down range), Demod Axis time domain analysis range setting and parameters including IFBW, RBW, Gaussian Filter and Trigger mode, etc.

Parameter Setting D	UT Result RX Data C	Comparison			
Tester Setting M	lode				
j	Demod Axis	6	Symbol Setup		
IFBW:	Ref. Value:	0.000 ≑ kHz	Fdev: +/-		
300kHz 、	Ref. Pos:	5 ≑	35.0 🔺 kHz		
RBW:	Scale/Div:	20.000 🚔 kHz	Bit rate:		
10kHz	Meas length:	100 ≑	19.20 🗘 kbps		
TOTAL	~Max leng	th=255bytes~	"***~***" kbps		
Gaussian Filter	Symbol format	:	Rx filter bandwidth:		
	ASCII	•			
	Waveform Re	solution	К⊓∠		
BT : 0.35 韋	Normal	⊖ High	Coding(DC-free):		
NT · 1	X axis Type		None(OFF) -		
· · ·	O Time lengt	th Bit length 			
Tester Trigger M	lode				
Condition	Edge	RF Trigger leve	dBm		
0.85	 Positive 	ra nggonoro			
®R⊦	0 N	Trigger delay:	0 ms		
	O Negative	Trigger mode:	Normal ~		
⊖ External	OFF				
Enternal	─ (RF trigger)	O Free run	Action now		

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Note: If the RX Mode Baud rate is different from the Baud rate at the source, there will be a decoding error.

LoRa/FSK DUT Setting

Sets DUT related parameters, which need to be consistent with C-I 200 PC SW; otherwise analysis will be unsuccessful.

The main set values to confirm: DUT RF Frequency, SF, BW, Coding rate and Preamble length.

DUT LoRa Setting	Mode	
Spreading factor	: SF7 •	DUT RF Frequency:
Coding rate:	4/5 -	433.920000 ਦ MHz
Bandwidth(kHz):	125 •	Increment: 0.00 + kHz
Preamble length:	20 🔺	PA Select
Pavload length:	1	● RFO ○ PA BOOST
Low datarata	1 v	DUIT Payload Data
optimize:	O ON ● OFF	O Default
Implicit header:	○ ON ● OFF	TX Data :38 Bytes
AGC auto:	● ON O OFF	4757496E7374656B20432D3132 30302077696C6C206265207468
LNA boost:	○ ON ● OFF	6520626573742073656C6C2E
IQ Invert:	○ ON ● OFF	BEST SELL.
Payload CRC:	○ ON ● OFF	☑ Calculate FEI Frequency
LoRa Sync Wo	rd: 18 🗘 0x12	//FEI:
DUT Reset:	Reset	Settings to REG Buffer

🚺 Notel;

When BW is small, e.g., 7.8kHz, and FEI deflection is greater than 20% of BW that is causing impact on decoding, it is necessary to execute FEI calibration.



When symbol time is greater than 16ms, it is required to enable low data rate optimize.

FEI (Frequency Error Indication):

This frequency error indicator measures the frequency error between the programmed RF center frequency and the carrier frequency of the modulated input signal to the receiver. When the FEI is performed, the frequency error is measured.

How to use trigger

The Trigger function sets the signal conditions upon which the spectrum analyzer triggers captured waveforms, including frequency, amplitude, and delay. An external trigger signal, instead of the default internal signal, may be used as required for special conditions. Trigger setting fields are as follows.



After setting is finished, switch Free Run to Action Now option



If you expect that the received signal tend to be small, you need to adjust the level of RF Trigger level again (default is -30dBm). Confirm if settings of (Modulation (FSK or ASK), Center frequency (315MHz or 433.92MHz) and Baud Rate are correct. If not, there will be an error occurred and fail to trigger.

MP Test

It provides the basic MP Test functions including DUT General Setting, DUT TX, DUT RX, Power Consumption

Save Report (RTF) Save SX-1276 REG Edit DUT Command MP Test Config

1		 Band Select, Check the SE 	RF Frequency	/, Output Power	• and Inp +
C-1200 PC Software				×	
		Gu	INSTEK	Simply Reliable	
File Select Mode Other Upgrade About	Key:	GWINSTEK,C-12),GES210423,"V5.01.190418	_33" 16 : 22 : 58	
Connect Trigger Output 1 Trigger Output 2 Dual Disconnect • Sen • Sen Sen	USB Select Mode Transmitter(DUT RX): Receive O LoRa O FSK O LoRa	r(DUT TX): ○ FSK	t2 Port3 Port4	27.5 C	
MP Test					
Band Select: EU433	PA Select ✓ F1 433.920000	0] F3 433.920000 🖨 MHz	Run	_
RF Frequency: Preamble:	O PA_BOOST Spreading fac	ctor: □ SF7 ☑ SF8 □ SF9 □ S	SF10 SF11 SF12	IXun	
O Ping-Pong 433.920000 € MHz 10 € syr Output power: Payload length:	nbols Input Port Select Dandwidth (K	41.7 62.5 ⊻ ·	125 250 500	Stop	
Quick set 13 🕏 dBm 38 🜩 byt	es Interval (s) <u>5</u> Coding rate:	✓ 4/5 4/6 4	4/7 🗌 4/8		
DUT TX 🗹	DUTRX 🗹 Start: Stop:	Step: Att.:	Log:	PASS	
POWER Target: 18 dBm P/E +	-10 ‡ dBm -100 ‡ d	Bm 10 ‡ dB 0 ‡ dB			
	RSSI Target	100.0	3		
	SNR larget	0.0 🖶 dB P/F±: 3.0 🖶 dE	3		
	Power Consumption	ID Address 102 100 1 122			
✓ FEI (After cal.) P/F ±: 3	DUT TX Mode Target:	110.0 \$ mA P/F ±: 10.0 \$ %			
☑ Bandwidth P/F ±: 15.0 🔄 %	DUT RX Mode Target	35.0 ♀ mA P/F ±: 10.0 ♀ %			
Symbol Period 1 ms P/F ±:	15.0 🗘 %	25.0 🛊 mA P/F ±: 10.0 💠 %	• •		
☑ TOA 1 P/F ±:	3.0 🗘 % 🗌 Sleep Target	17.0 🚖 mA P/F ±: 10.0 🚖 %	Save Report	Clear	
leck the items for test and a	djust the judgment limit	line of PASS/FAIL.	•		

Recall Config File

Save Config File

•

Spectrum(Specification) Mode: Pretest

Specification Pretest mode provides a simple Spectrum analyzer function which can perform testing complying to FHSS (Frequency Hopping Spread Spectrum) & DSSS (Direct Sequence Spread Spectrum). Compliance with the specification §15.247 and §15.209.



The shortcut menu is available on the main window: Auto Sweep time, Pre-amp, Sweep mode, Max/Min Hold, Preset, Sweep control, 2FSK mode, Detection.

Auto Sweep time:

Automatic adjust the sweep time and dwell time



Preset: The Preset function loads either factory default states.

Max/Min Hold:

The maximum or minimum points are maintained for the selected trace. The trace points are updated each sweep if new maximum or minimum points are found. The Hold Max setting also has a threshold setting. This setting will ensure only those values above the threshold are kept.

Sweep mode:

The Fast setting speeds up the signal processing and the display update rate to increase the overall sweep time. This mode is especially useful when the span is greater than IMHz. When set to Normal, signal processing and update rate is set to normal levels.

Pre-amp:

In the Auto setting mode, the pre-amplifier will be turned on automatically when the reference level is less than -30dBm. The pre-amplifier will be turned off when the reference level is greater than -30dBm. The bypass setting turns the preamplifier off.

Operation

You can change the setting by directly clicking on the display information such as Scale, Ref, RBW, VBW, frequency, etc. on the main window.



Example: Move mouse to RBW and double click on the left mouse button to edit



Example: Move mouse to Center Frq: 1.625 GHz and double click on the left mouse button to edit



IO Extension

IO Extension (C-I20I), the external interface accessory for C-I200, provides up to 4 groups of SPI, 4 groups of UART, I group of I2C (I2C_SDA, I2C_SCL) or 2 pins of GPIO (GPIOI, GPIO2) for signal sending and receiving. Note that I2C_SDA:GPIOI and I2C_SCL:GPIO2.

IO Extension (C-1201), which is mainly used to control external DUT, can be remotely controlled by C-1200 to send or receive signal.



Note: 1. Due to the fact that I2C and GPIO share the same pin, either one state will be present at a time.
2. Voltage will be output when GPIO Mode State is output.

Example



One-station test requirement can be realized while C-1200 collocating with IO Extension and PPH-1503.