13Z990 is 13.3” ultra-notebook embedded with Intel 9260D2W, it supports the following radio technologies:

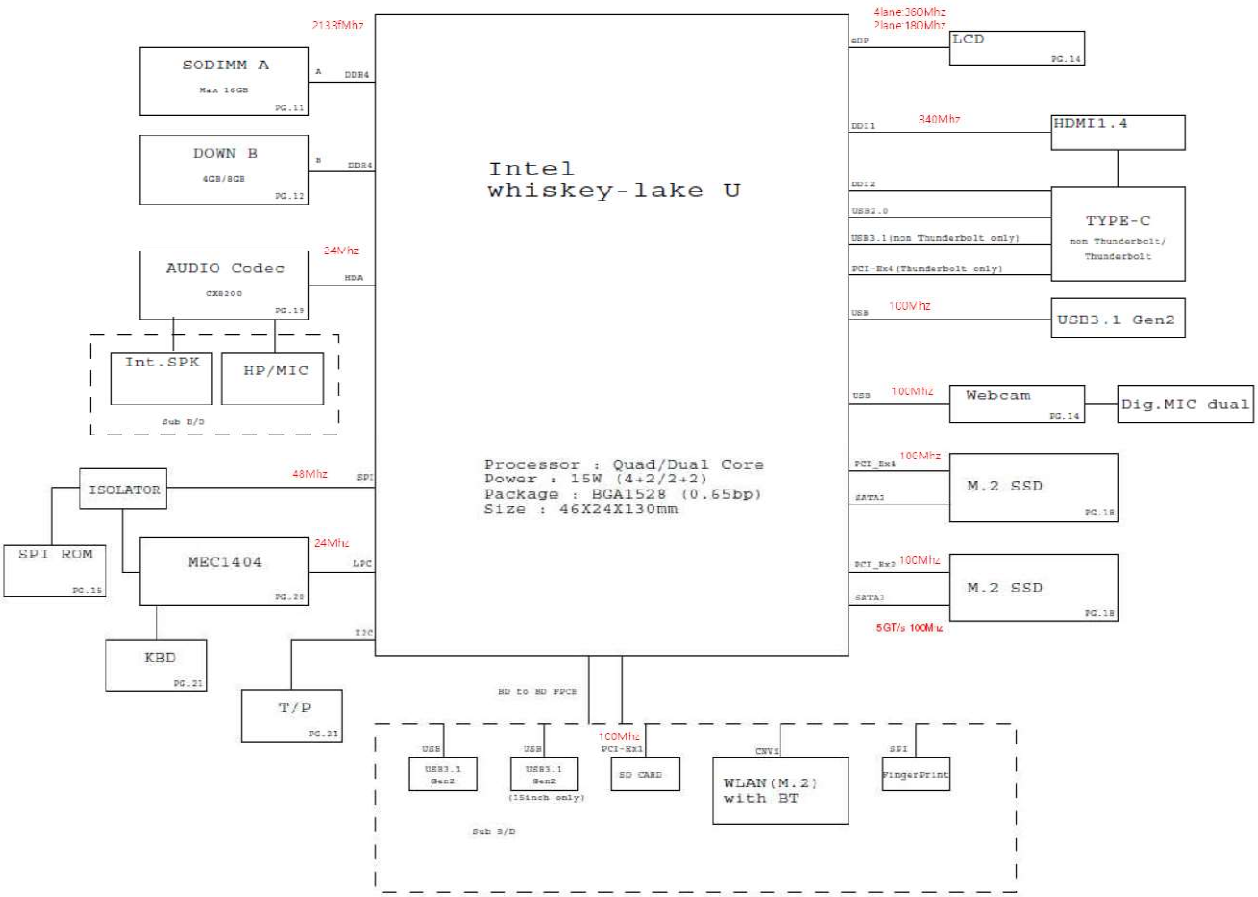
- 802.11abgn+acR2 MIMO 2x2
- Bluetooth* 5.0

1.1 Key features

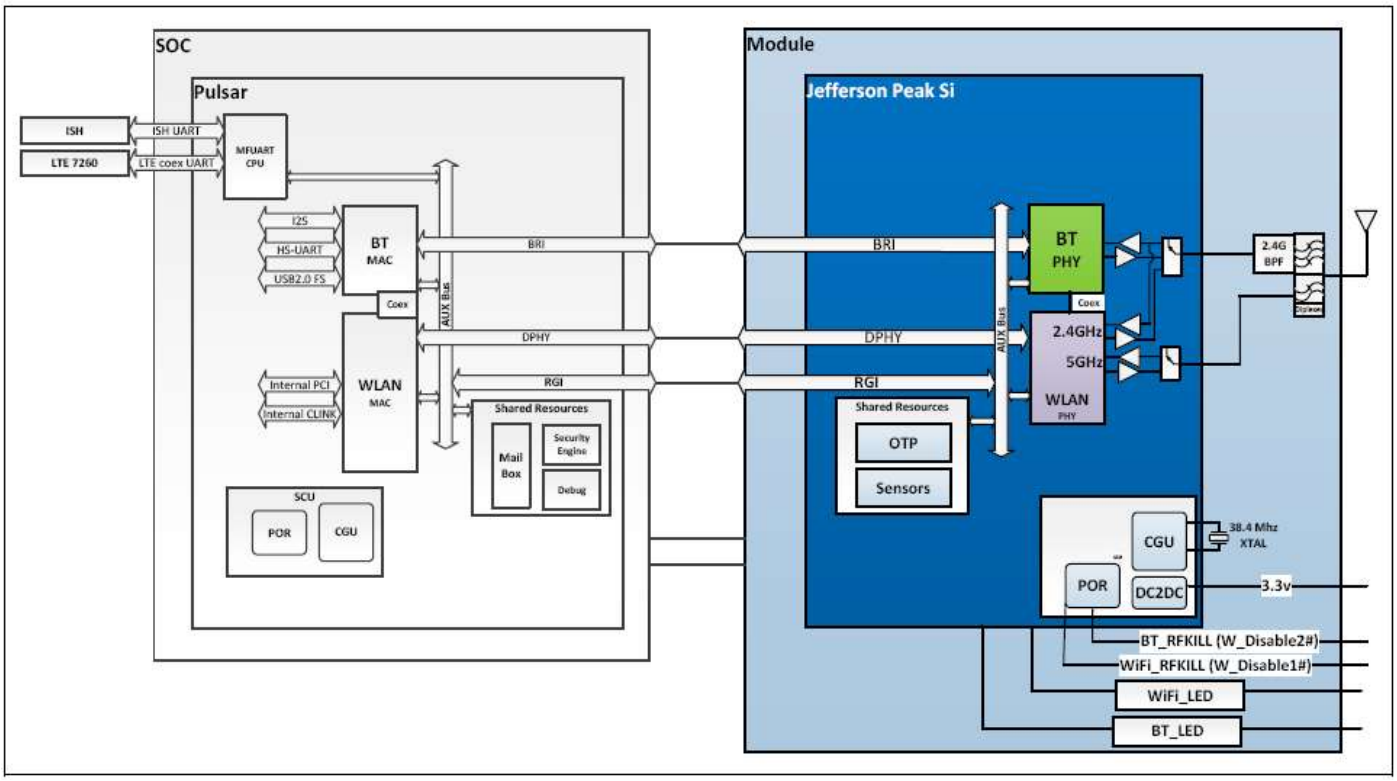
Table1–1 Key features

Feature	Windstorm Peak
Wi-Fi	High performance low power dual band 802.11acR2 2x2
Bluetooth	Bluetooth* 5.0
Host Interfaces	Wi-Fi: PCI based (Internal to the SoC) BT: USB based, optional UART/I2S (Internal to the SoC) AMT: CLINK (Internal to the SoC)
Wi-Fi Alliance certifications	802.11a/b/g/n/ac , WPA/2 Personal and Enterprise, WPS2, 802.11w, WMM, WMM-PS, WFD, Miracast, Passpoint R2, Voice Personal
Wi-Fi-Bluetooth Coex	MIMO TX/TX and Rx/Rx Concurrency

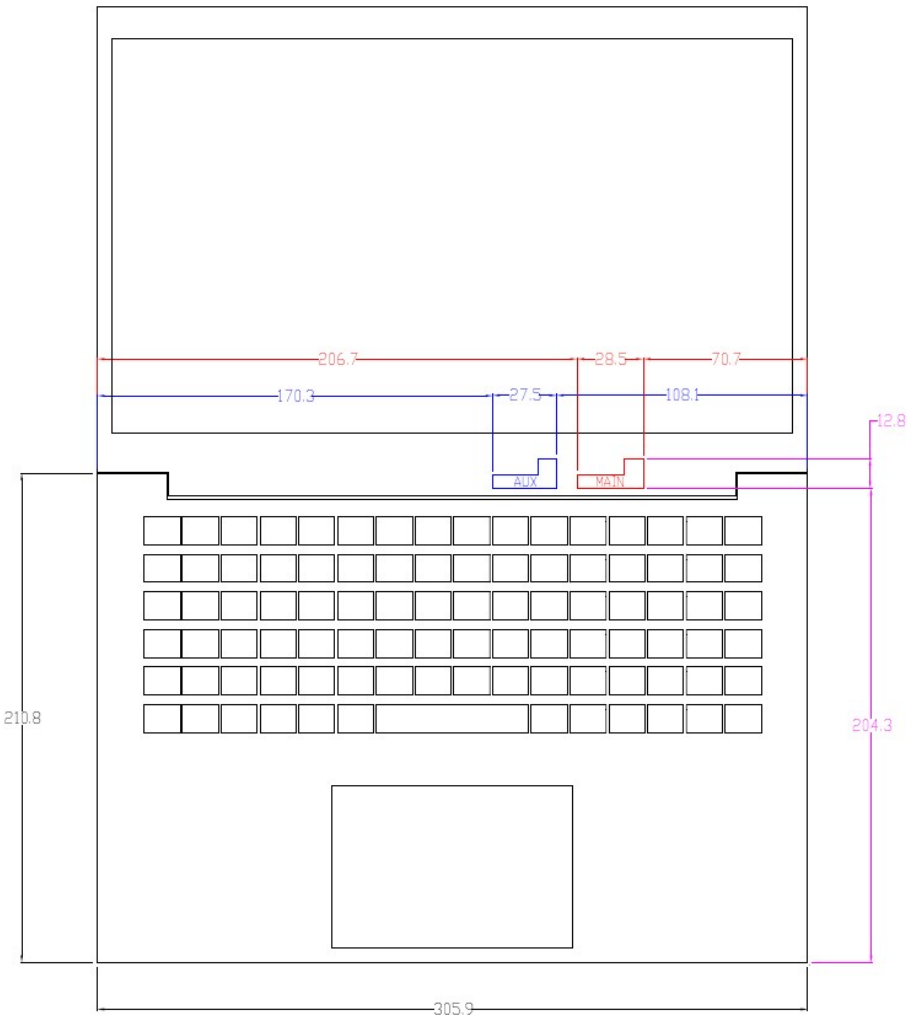
1.2 gram Peak block diagram



Wireless Module (Jefferson Peak module block diagram)



Antenna Location



RF Technical Specification	
Communication Spec	802.11a/b/g/n/ac, BT/BLE
Operation Bandwidth	20 MHz/ 40 MHz/ 80 MHz / 160MHz

Modulation Type	RF Output Power		
BT: FHSS (GFSK, 8DPSK,π/4 DQPSK) **BLE:** GFSK **802.11b:** DSSS (DBPSK/ DQPSK/ CCK) **802.11a/g/n-HT20/n-HT40:** OFDM (BPSK/ QPSK/ 16QAM/ 64QAM) **802.11ac-VHT20/VHT40/VHT80/VHT160:** OFDM (BPSK/ QPSK/ 16QAM/ 64QAM/ 256QAM)	**2.4GHz:** Listed power table in next page.		
	BT(GFSK):	11	dBm(PK)
	BT(8DPSK):	9	dBm(PK)
	BLE:	9	dBm(PK)
	5GHzUNII Band I**:**	23	dBm (AV)
	5GHzUNII Band II-2A**:**	23	dBm (AV)
	5GHzUNII Band II-2C**:**	24	dBm (AV)
	5GHzUNII Band III**:**	24	dBm (AV)

Technical		Frequency Bands (MHz)	Channels
	BT:	2402-2480	79
	BLE:	2402-2480	40
2.4GHz	**802.11b/g/n-HT20:**	2412-2472	13
	802.11n-HT40:	2422-2462	9
5GHz	**802.11a:**	5180-5240	4
		5260-5320*	4
		5500-5700*	11
		5745-5825	5
	802.11n-HT20/802.11ac-VHT20:	5180-5240	4
		5260-5320*	4
		5500-5720*	12
		5745-5825	5
	802.11n-HT40/802.11ac-VHT40:	5190-5230	2
		5270-5310*	2
		5510-5710*	6
		5755-5795	2
	802.11ac-VHT80:	5210	1
		5290*	1
		5530-5690*	3
		5775	1
	802.11ac-VHT160:	5250	1
		5570	1
	"*":UNII Band II-2A&II-2C [DFS Function-Slave(Without radar detection function)] Note: The band 5600-5650MHz is a restrictive band in Canada.		

Antenna Type	**Main:** FPCB Antenna
	AUX: FPCB Antenna

Antenna Gain

2.4G Antenna

No.	Antenna Part Number	Manufacture	Antenna Type	Frequency (MHz)	Max Gain (dBi)
1	WA-F-LBLB-04-057 (Main)	INPAQ	FPCB	2400	2.58
				2450	2.41
				2500	2.11
2	WA-F-LBLB-04-057 (AUX)	INPAQ	FPCB	2400	2.00
				2450	2.91
				2500	2.55

5G Antenna

No.	Antenna Part Number	Manufacture	Antenna Type	Frequency (MHz)	Max Gain (dBi)
1	WA-F-LBLB-04-057 (Main)	INPAQ	FPCB	5100	1.97
				5400	1.70
				5800	1.18
2	WA-F-LBLB-04-057 (AUX)	INPAQ	FPCB	5100	1.03
				5400	2.03
				5800	1.34

Power Setting for each channel at 2.4GHz

RMS Output Power (dBm)				
Channel	802.11b	802.11g	802.11n-HT20	802.11n-HT40
1	18.52	16.19	18.27	---
2	19.04	16.82	19.44	
3	19.58	17.49	19.92	16.38
4	20.46	18.58	20.06	16.96
5	20.98	19.24	20.48	17.08
6	21.06	20.49	20.64	17.41
7	21.02	18.85	20.45	17.32
8	20.95	18.24	20.05	16.95
9	20.42	17.92	19.58	16.35
10	19.36	16.82	18.75	12.08
11	18.74	16.47	17.87	4.43
12	14.31	13.25	15.53	---
13	12.80	-5.57	-3.29	