

Saward Antenna Debugging Report

Customer Name: Chengfeng

Project Name: MQ1069AA Hengke 863C
Main Board A523 Main Control

Date: April 22, 2024

Project contact information

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Project Introduction

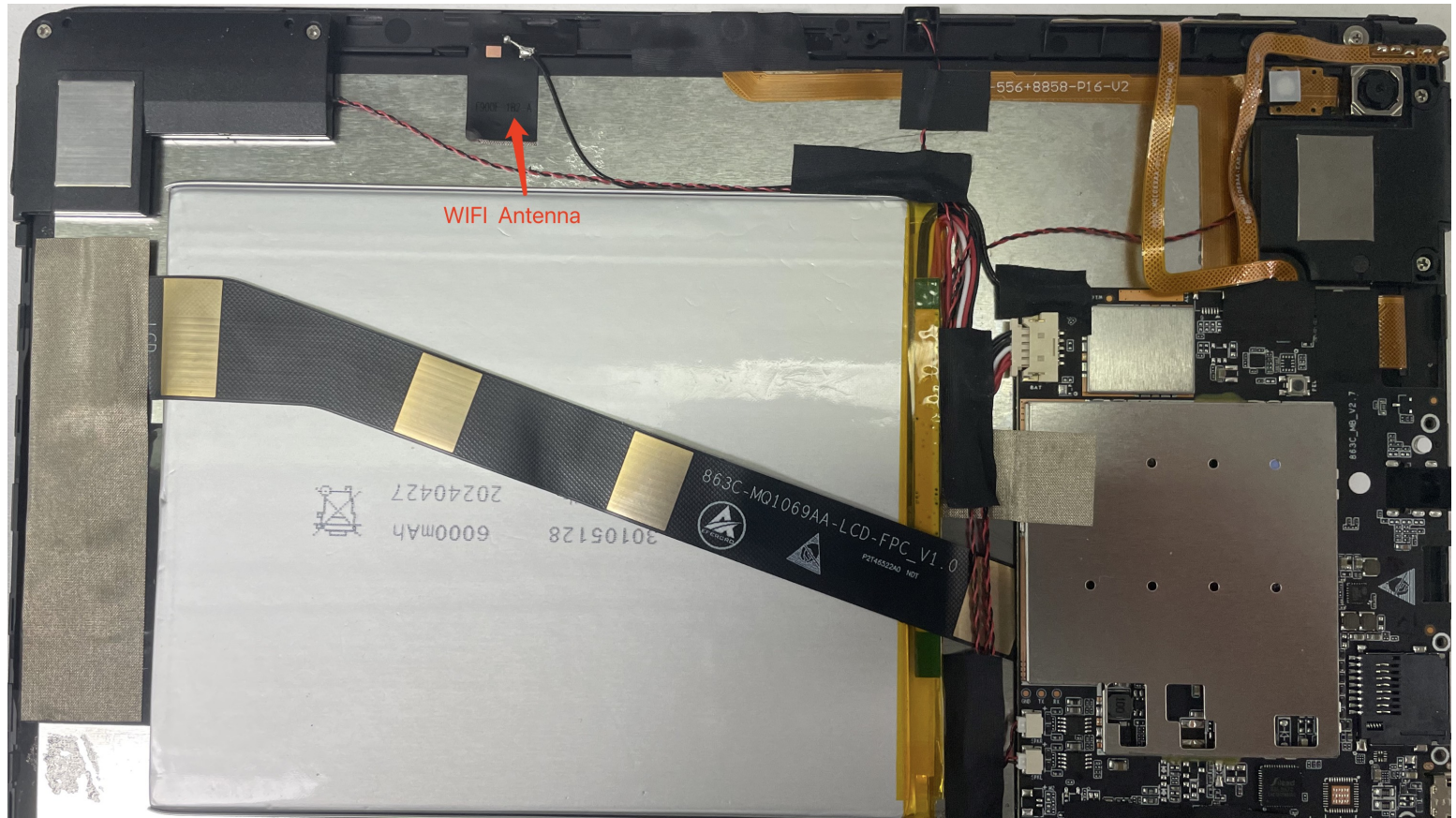
1. Project Description

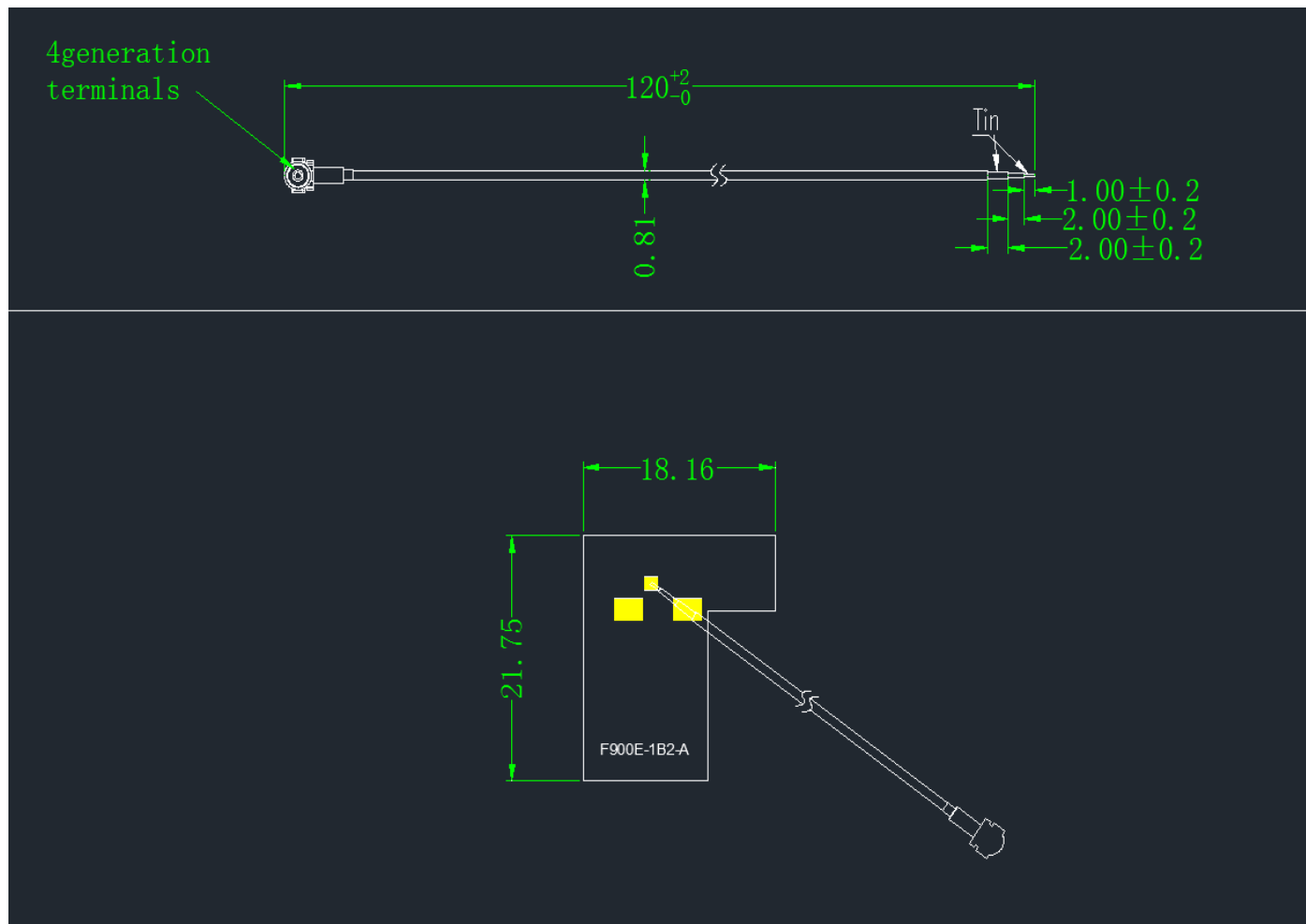
Number of project antennas	Machine type
1	flat
Machine shell material: 10.1-inch Jinlisheng P16 plastic shell	

2. Antenna Overview

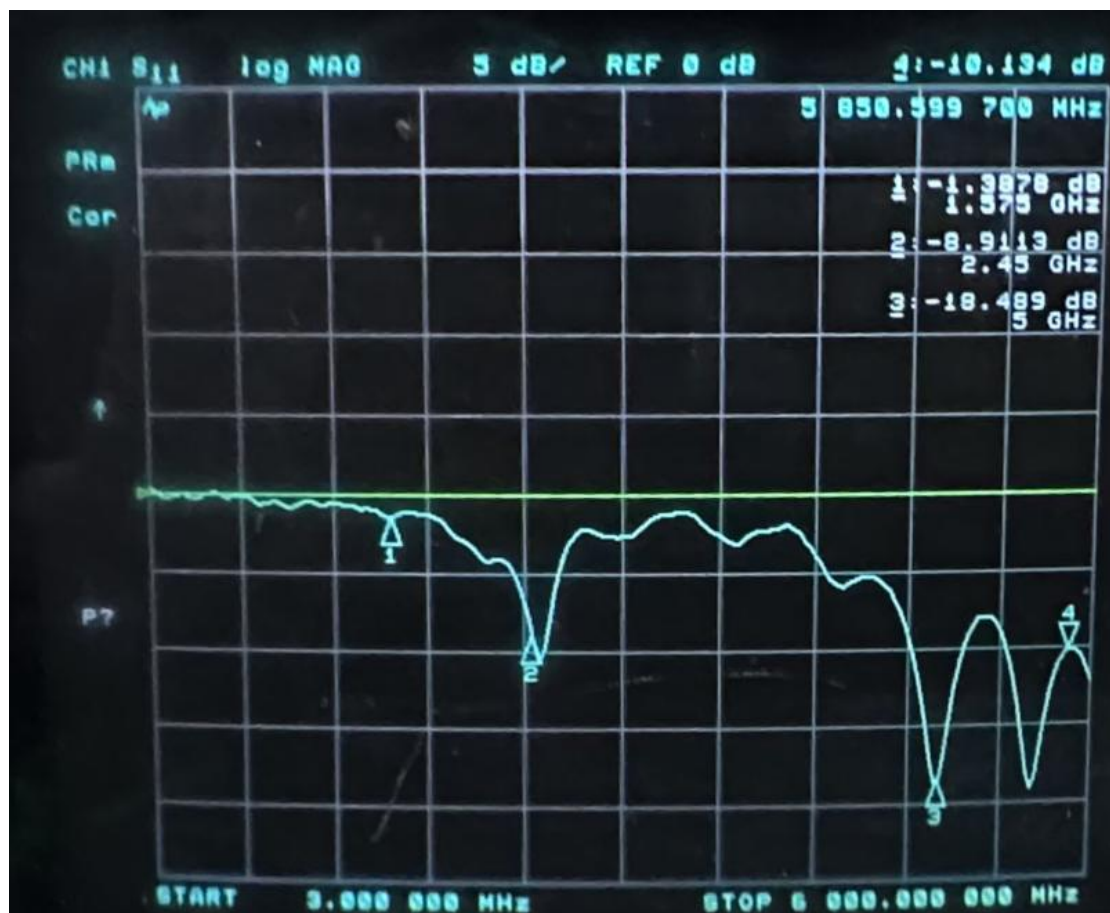
Antenna number	name	Working frequency band/MHZ	Material/Struct ure
1	WIFI&BT&5Gwifi	2400MHz/2500MHz&5.8GHz	FPC

Antenna layout





WIFI&BT antenna S11



WIFI antenna throughput test

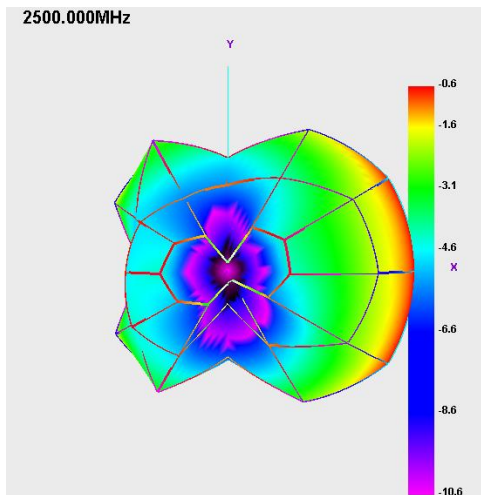
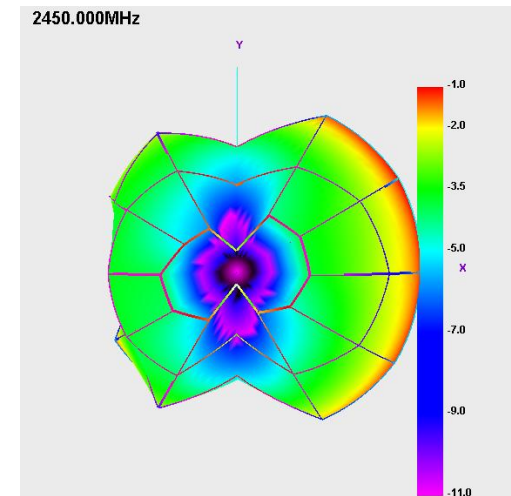
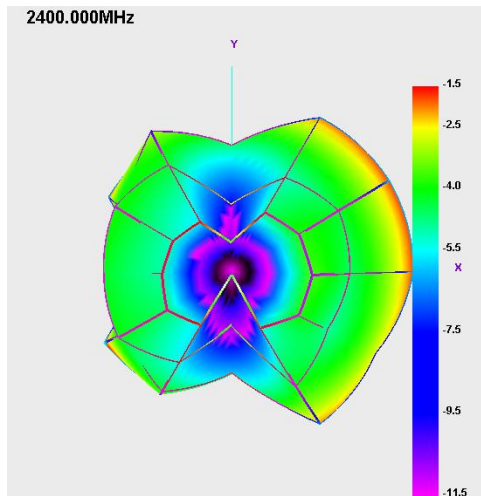
Iperf throughput testing						
model		module		Software version		
Model number	channel	distance	Testing angle	Test data (TX) 1-minute mean	Test data (RX) 1-minute mean	Remarks (Number of Swaps)
2.4GWIFI		15m	0°	46.3M/S	85.2M/S	0
			90°	55.2M/S	83.2M/S	
			180°	48.1M/S	93.6M/S	
			270°	49.4M/S	85.5M/S	
5GWIFI		15m	0°	151M/S	285M/S	0
			90°	160M/S	287M/S	
			180°	158M/S	267M/S	
			270°	156M/S	277M/S	

BT antenna measured distance

Actual measurement effect	
Model number	1
Test Environment	Soward R&D Center
Test equipment	Huawei AM08
Test distance	10 meters $\geq$

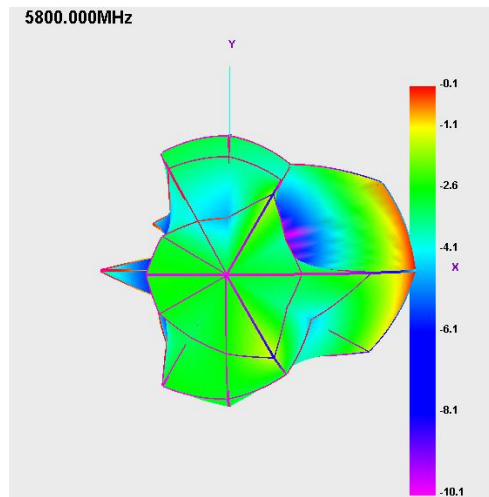
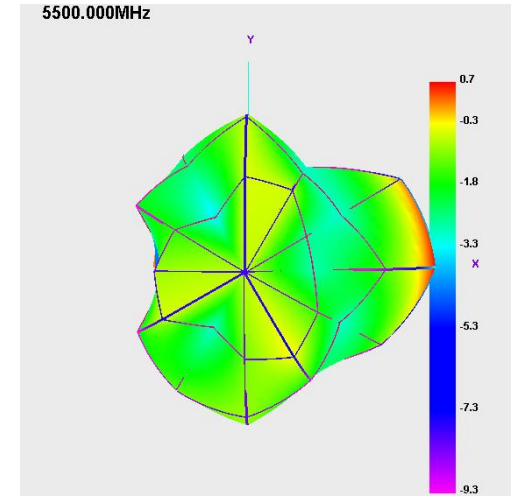
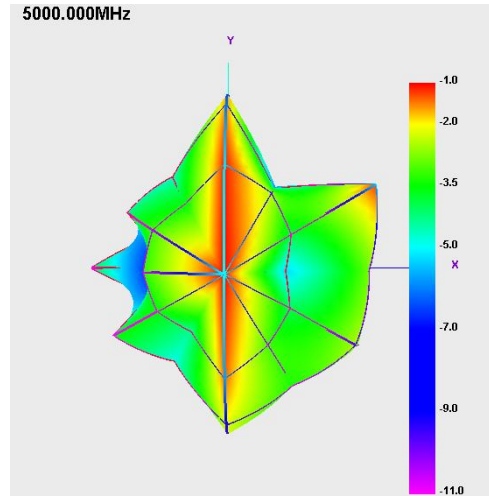
WIFI&BT antenna efficiency

Passive Test For 2.4G			
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
2400	31.38	-5.03	-1.48
2410	32.28	-4.91	-1.43
2420	31.63	-5	-1.58
2430	32.92	-4.83	-1.41
2440	32.18	-4.92	-1.45
2450	34.57	-4.61	-1.03
2460	35.28	-4.52	-0.78
2470	34.51	-4.62	-0.73
2480	32.46	-4.89	-0.94
2490	32.97	-4.82	-0.68
2500	32.27	-4.91	-0.64



5GWIFI antenna efficiency

Passive Test For 5G-WIFI			
Freq	Effi	Effi	Gain
(MHz)	(%)	(dB)	(dBi)
5000	27.29	-5.64	-0.99
5100	29.72	-5.27	-0.75
5200	32.65	-4.86	-0.8
5300	40.07	-3.97	1.08
5400	34.09	-4.67	0.28
5500	29.92	-5.24	0.72
5600	21.42	-6.69	0.3
5700	27.54	-5.6	1
5800	26.53	-5.76	-0.12
5900	24.48	-6.11	-1.68
6000	20.29	-6.93	-2.36



WIFI antenna signal strength measured image (data)



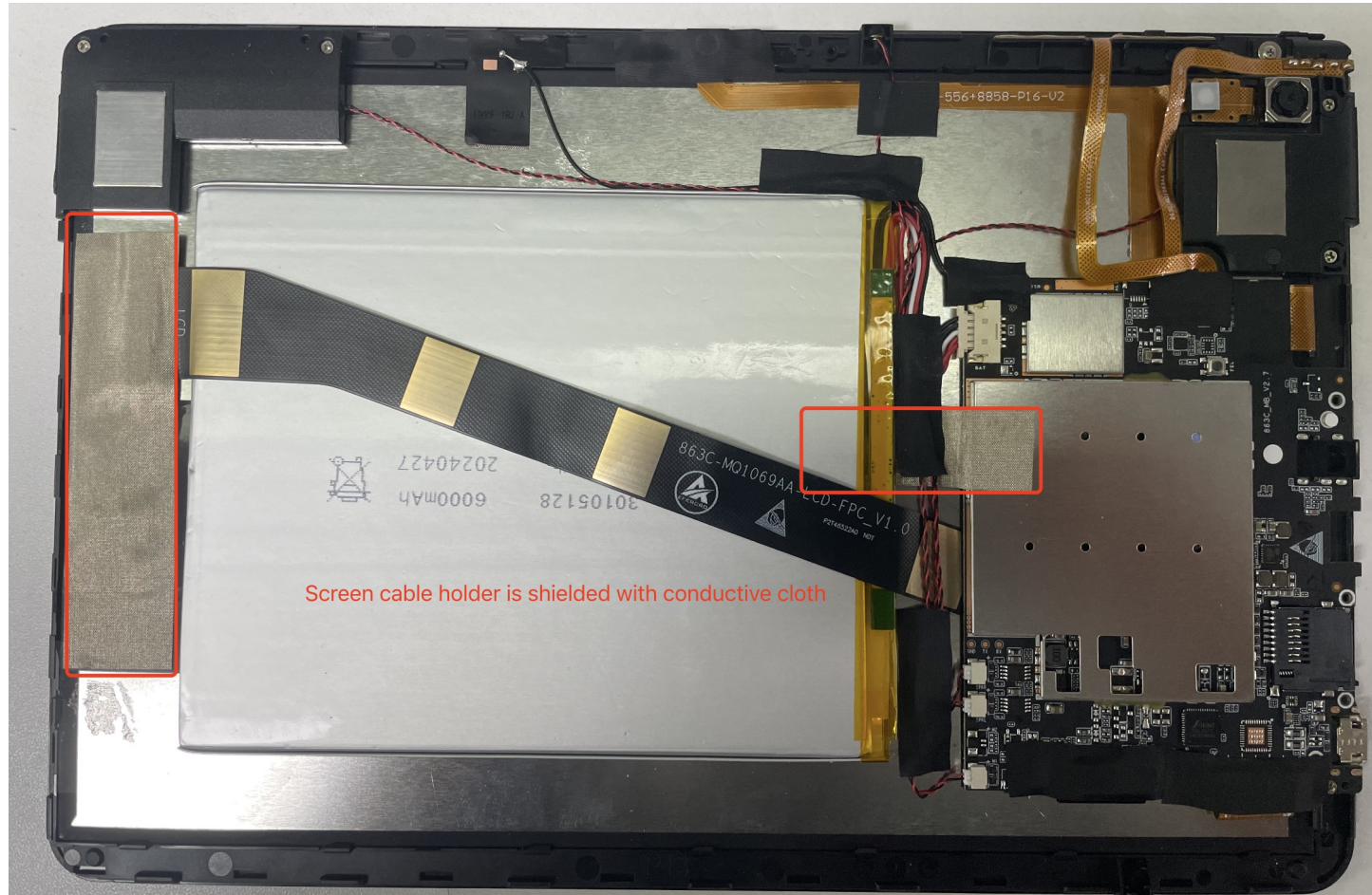
Testing location: Our R&D office

Test time: 14:00-14:30

Testing distance: 10-15 meters

Signal strength: -45dBm to -39dBm

Environmental treatment and assembly instructions



Screen cable holder is shielded with conductive cloth

Note: 1. This report is based on the actual debugging and testing of the prototype, including environmental treatment, antenna position, and assembly position of various components

Cannot be changed arbitrarily;

2. If there are any changes to the materials used in the prototype, please provide timely feedback to our company for re verification;

3. List of sensitive devices:

TP (material, coating, wiring, etc.)

Screen (amplification circuit, LED, ribbon design, etc.)

Shell material (antenna assembly method, structural interference, shell material, antenna position height and area, etc.)

Motherboard (motherboard conduction, RF circuit matching, PA, dual power, filtering, LNA, power circuit, etc.)

Camera, battery, motor, MIC, fingerprint recognition module, etc

4. Due to the small number or only one testing machine, some probabilistic issues cannot be completely identified. It is recommended to conduct small-scale trial production before mass production to identify problem points (such as flashing screens, speaker noise, TP jumping, black screen crash, signal diving, etc.)