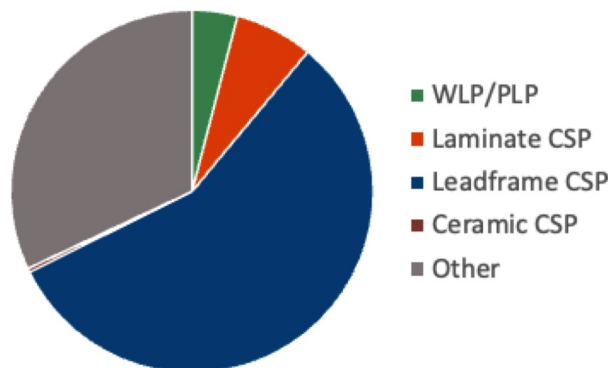


DJI Neo drone and accessories

Teardown from TechSearch International, Inc.



272 Packages



Contents and Highlights

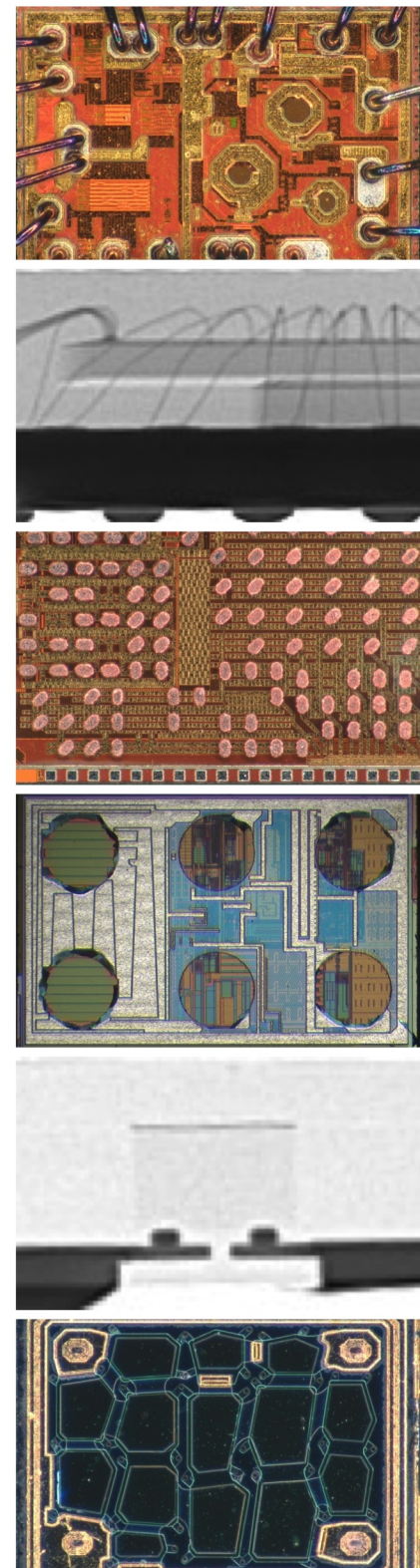
- 294-page report with package and die quantity summaries, high-resolution photos and X-rays, package dimensions, part numbers and descriptions, as well as analysis of packaging and assembly technologies discovered from package decapsulation
- All packages from aircraft, remote control, battery packs, and charging dock examined
- 18 additional slides with construction analysis details for packages such as:
 - DJI application and baseband processors assembled in flip chip FBGAs with exposed die tops
 - RF FEMs from Kangxi Communication and Vanchip
 - Chinese-made FBAR BAW filter
 - Numerous leadframe packages with flip chip-mounted die
 - Image, proximity, motion, and pressure sensors

Teardowns backed by 38 years serving as the industry's trusted source for semiconductor packaging trend analysis

- Examination of all chips with emphasis on assembly and packaging technologies
- Superb quality photographs and x-ray images
- Both the packages and the die within are identified and characterized
- Detailed construction analysis of key chips and packages



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Pages from the report and slides

DJI Neo

DN1A0626 + RC151

category Drone

released Sep 2024



Package quantities (by package type)

WLP/PLP

Laminate CSP

Leadframe CSP

MIS CSP

Ceramic CSP

Other

TOTAL

Die quantities (by die interconnect type)

RDL/WLP

Flip chip

Wire bond

Clip

Ribbon

TOTAL

Total area (mm²)

Package area

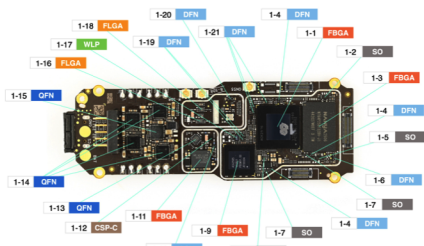
Bare die solutions included

Bare die solutions excluded

Package = Any device that has completed final packaging steps, includes all other packaged devices as well as finished packages mounted inside other packages/modules. Connect modules not covered in packages or modules. Bare die solutions = Finished devices mounted directly on boards or flex circuits (e.g., chip on board, chip on flex, chip on substrate, etc.)

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ASSEMBLY 1 — Main board side 1



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RF Front-End Modules

Aircraft RF FEMs supplied by Shanghai-based Kangxi Communication

8247HE

879200

CS2447

2.4GHz WLAN FEM

1 PA, 1 LNA, 1 switch

(Other RF chips for the aircraft include two Maxscend RF LNAs)

5G50

823689

FG2437

5GHz WLAN FEM

1 PA, 1 LNA, 1 switch

(likely custom made for OcuSync 4)

5G50

823689

FG2437

5GHz Wi-Fi FEM

1 PA, 1 LNA+switch

Remote control RF FEMs supplied by Vanchip

HGWF

840

M081

2.4GHz WLAN FEM

1 PA, 1 LNA+switch

2 pcs

8121

842

M025

5GHz WLAN FEM

1 PA, 1 LNA+switch

2 pcs

Comet Xylon provided equipment for X-rays.

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PACKAGE QUANTITY DETAILS

Board-level assembled packages

WLP/PLP

Laminate CSP

Leadframe CSP

MIS CSP

Ceramic CSP

Bare die on fglb

Other

TOTAL

Package-level assembled packages

WLP/PLP

Laminate CSP

Leadframe CSP

MIS CSP

Ceramic CSP

Other

TOTAL

Board-level = Packaged devices mounted to boards, flex circuits, etc. during electronics assembly

Package-level = Pre-packaged devices assembled inside other encapsulated packages or modules

L = Laminate substrate; C = Ceramic substrate; fglb = flex/glass/board

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ASSEMBLY 1 — Main board side 1

1-9

DJI

Sparrow 2 (82) baseband processor

ACG2505 (V20R01)

Logic

ACG2505

V20R01

FGM01.00

AF00004

Comet Xylon provided equipment for X-rays

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Leadframe Packages with Flip Chip

695

ESD protection diode

7 pcs

AVXS

041

buck converter

3 pcs

3252

TI buck converter

6 pcs

leGrA

boost converter

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PACKAGES BY SUPPLIER LOCATION

Supplier HQ

China

Europe

Japan

Korea

N America

SE Asia

Taiwan

Other

unknown

TOTAL

Geographic quantities based on headquarters location of chip suppliers; includes bare die solutions

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PACKAGE AREA BY CHIP TYPE

Chip Type

Analog/Mixed-signal

RF analog

Logic

Memory

Sensor-Actuator

Image sensor

Discrete

Opto

RF Passive

IPD

Other

unknown

TOTAL

Measured width x length; includes bare die solutions

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ASSEMBLY 2 — Main board side 2 (1 of 2)

Component Details

2-2-1

1

Samsung

Semiconductor

256Gb NAND flash

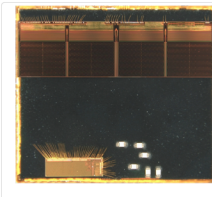
2-2-2

1

Forcees (Longsys brand)

NAND controller

Additional Images



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List of Packages

ITEM	QTY	DESCRIPTION	MANUFACTURER	PACKAGE	SIZE	CONTACT	PRICE	QTY	REMARKS
1.1	1	DJI	ACG2505 (V20R01)	Flip chip					
1.2	1	Step-down regulator	Analog/Mix-Sig	SO	2.10 x 2.20 x 0.98	5	0.65	1	Wire bond
1.3	1	Memory	MT90PMT32 BV-11	FBGA	9.94 x 14.94 x 0.76	200	0.65	2	Wire bond, Stacked die
1.4	3	40V NPN switching transistor	Discrete	DFN	0.58 x 0.58 x 0.46	3	0.35	1	Wire bond
1.5	1	Analog/Mix-Sig	SO						
1.6	1	Analog/Mix-Sig	DFN						
1.7	2	Discrete	SO						
1.8	1								
1.9	1								
1.10	1								
1.11	1								
1.12	1								
1.13	1								
1.14	4								
1.15	1								
1.16	1								
1.17	1								
1.18	1								

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For pricing, please contact us at tsi@techsearchinc.com