Like all other interstellar space vessels the Bird-of-Prey relies heavily on computerized systems to manage every aspect of ship operations, including propulsion, navigation, weapons systems, transporter functions, environmental control, and communications.

The Bird-of-Prey has a single central computer core that consists of two highly redundant cylindrical processor module decks and a lower section designed primarily for rapid mass data storage and retrieval.

The stack is a substantial module that is more than 6m tall and reaches from the top of Deck 5L to the bottom of Deck 6. Bands of sensors, identical to those surrounding Deck 5, ring the hull just outside the core and specialized instruments make up the bulk of the lower sensor cap.

Both processor decks are 11.42m in diameter and 2.3m in height. The storage and retrieval deck is also 11.42m across but slightly shorter at 1.56m.

All the core framing structures are fabricated from densified duranium foam bonded with hafnium titanide and include integral power and data channels. Connections to the plasma power nodes and the ship's systems can be made quickly during installation. During repair yard layovers the entire core can be swapped out robotically in less than two hours.

▼ **Like almost all advanced species, Klingons use isolinear circuitry to store data.**

The crew access the outer hatches of all three sections of the stack using a set of circular catwalks and ladders that were moved into place after the core was installed. Access to the open center of the stack for maintenance tasks is made through a pressure hatch in the floor of Deck 5, just aft of the bridge. The open well also leads down to an equipment and torpedo transport tunnel that can provide emergency exit from the ship through the torpedo launcher cowling on Deck 6.

Isolinear memory and processing technology is widespread across the Alpha and Beta Quadrants of the Galaxy, though it is implemented differently by different races. Klingon use of isolinear circuits is distinguished by a marked difference in the sizes and densities of the crystal cells manufactured for space vessels and those used in most every other sector of Klingon society.

Advanced isolinear research on Qo'noS has yielded some of the smallest crystal cells ever seen, almost too small to hold information reliably at ~9nm, but the stability is reinforced by a pulsed subspace field that imparts no changes to the data. However, the ruggedized isolinear chips installed in the Bird-of-Prey's computer cores have relatively large crystal cells at 23nm and measure 10.8cm x 5.8cm x 0.9cm. Each chip can hold approximately 62.7 kiloquads of data. The total quantities of chips, protective racks, and data connections can vary widely depending on the individual Bird-of-Prey and its key missions, but the complete base computer core accommodates upwards of 15,000 chips, equalling a capacity of some 940,000 kiloquads.

The circuit pathways impressed on the isolinear slabs and the organization of the plug-in racks closely mimic Klingon cortical cells and larger brain structures. The interconnections within the core are designed to be as short as possible, using a combination of nanopulse optical fiber as well as a conductive carbon ribbon as a backup pathway. Signal switching nodes, mounted inboard of the chip racks, perform all of the AI data routing tasks within the core as well as handling all incoming sensor inputs and shipboard systems upkeep.

The computer core is linked to all ship systems, including remote terminals, by additional bundles of optical fiber and carbon ribbon, with RF connectivity as a backup. The total length of physical fiber on the ship is nearly 2,500km.

The lower processor deck typically takes on the management of the majority of basic ship systems while the upper deck, closer to the bridge, is primarily concerned with combat maneuvers and weapons. Both decks interact, comparing readings and making decisions on flight operations, power allocations, communications, and other mission parameters, and both decks record and extract data from the lower storage section.

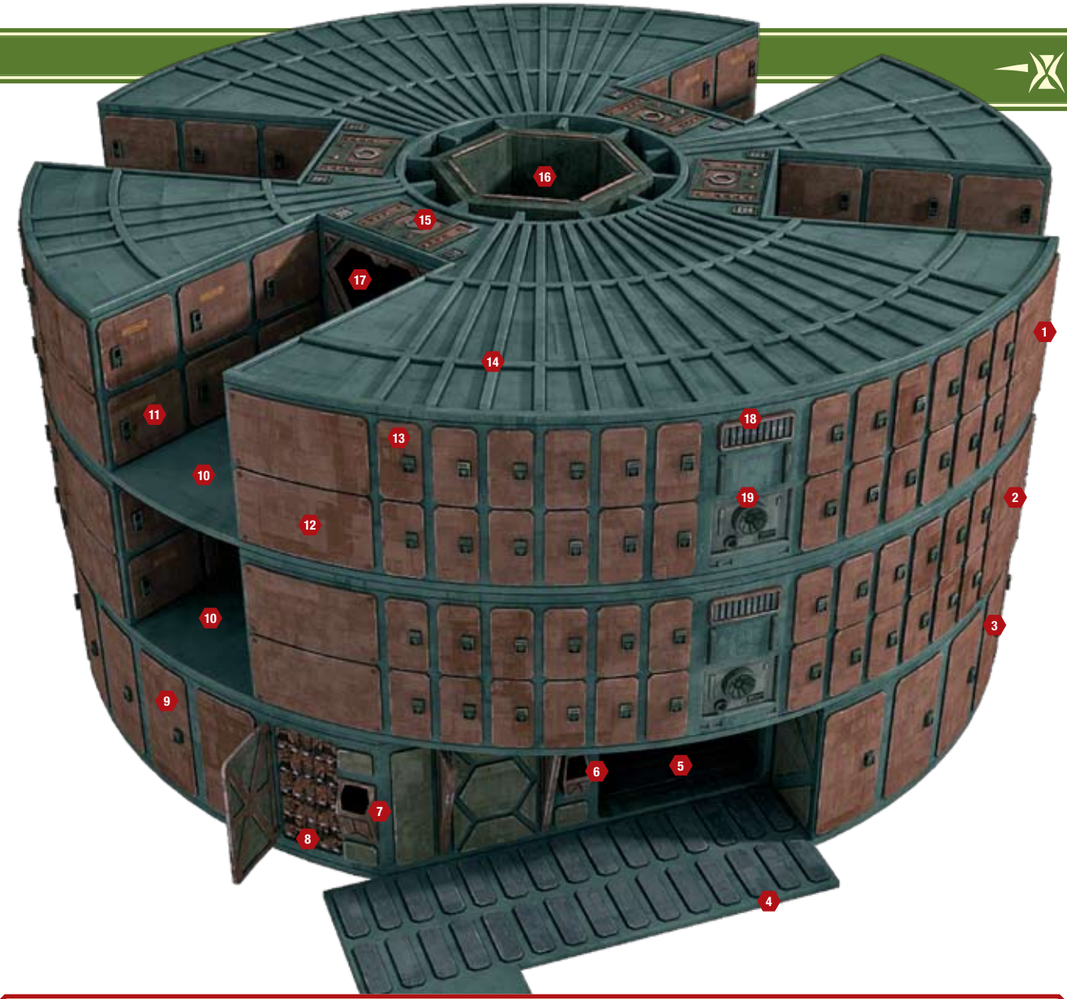
In the event of a catastrophic failure within the core, usually from battle, artificial intelligence routines will automatically determine the severity of the damage and reconfigure all healthy processors to prioritize tasks, according to the ship's situation and in concert with commands from the bridge crew.

Damaged isolinear elements and switching nodes can be swapped out as opportunities allow, and the core can work around the remaining damaged circuits.

The Bird-of-Prey can typically function with as little as 15 per cent of the computer 'awake' and transfer authority to major systems such as the warp and impulse engines, whose smaller dedicated computer modules are capable of executing basic flight commands from the bridge.

A functioning Bird-of-Prey with at least 45 per cent overall computer capacity can, in an after-battle scenario, fly in formation with a more damaged vessel, taking over many of the latter's functions via a subspace connection.

As with most Klingon spacecraft, the Bird-of-Prey has been designed to operate for at least a century with little change in the basic configuration. In the hundred years or so that the current design of Bird-of-Prey has been in service, internal systems including the computer core have undergone periodic, though still limited, upgrades. This allows Klingon shipyards to build vessels at a rapid rate when needed and ensures that standard spares will fit and function.



1 Upper Processor Module
2 Lower Processor Module
3 Data Storage & Retrieval Module
4 Torpedo & Equipment Transfer Track
5 Torpedo & Equipment Transfer Tunnel
6 Transfer Tunnel Control Console
7 Data Storage Inventory Control
8 Isolinear Chip Racks (1400)
9 Isolinear Storage Access Hatch (24)
10 Processor Module Monitor Alcove (8)
11 Special-Purpose Processor Racks (96)
12 Outer Processor Rack Storage (32)
13 Processor Rack Storage (104)
14 Duranium Titanide Framing
15 Power & Data Channel Connectors (24)
16 Deck 5 Core Access Well
17 Processor Systems Monitor Panel (8)
18 Computer Core Cooling Duct (4)
19 Optical Fiber Connector (4)

▲ **The main computer core consists of three decks that run from Deck 5 to the area beneath Deck 6 in the head of the Bird-of-Prey.**