Purchasing a TOD™

"The Age of Tissue Computing has Arrived™"
Brought to you by BCM Industries

BCM has announced the first commercially available Tissue Operating Device (TOD™) – a living neural computer! As illustrated, TOD™ consists of three main components: a neural processing Tissue Computer (TC), an internal digital Management Computer, and a TOD™ Configured Laptop Computer that serves as the user's interface. All TOD™ Models are currently in development with first deliveries of Models 16 and 48 scheduled to commence early 2023.

BCM has also announced the forthcoming availability of the first neural supercomputer. The TOD™ Model 5120 Supercomputer will employ approximately 5 billion live neurons. These networked neurons will deliver near blinding processing speeds and massive data storage capacity all controllable from a simple laptop. For more on this supercomputer, see the Article: "Owning a TOD™ 5120 Supercomputer."

Intel reported their "artificial" neuron processing chip, Loihi, enables users to process information up to 1,000 times (three orders of magnitude) faster than CPUs for specialized applications. That means a processing task that requires 1,000 seconds (16.7 minutes) on a fast digital computer can be performed in a single second on a properly setup TOD™ Tissue Computer.

All TOD™ Models will deliver several orders of magnitude faster computational speed, extreme wideband processing throughput, massive data, intelligence, and knowledge storage capacity, and lighting fast data transfers. Due to the limiting rules of physics, conventional digital computers with chips and motherboards, no matter how enhanced, will never achieve TOD™ levels of performance.

All user training, remote support, and on-site global service support is performed by BCM certified professionals, who personally deliver and install all purchased TOD™ Models and perform on-site service as required.

For details regarding the design and other specifics on TOD™ and the Tissue Computer, see the Article: "TOD™ Design Production and Service."

TOD™ System Configuration
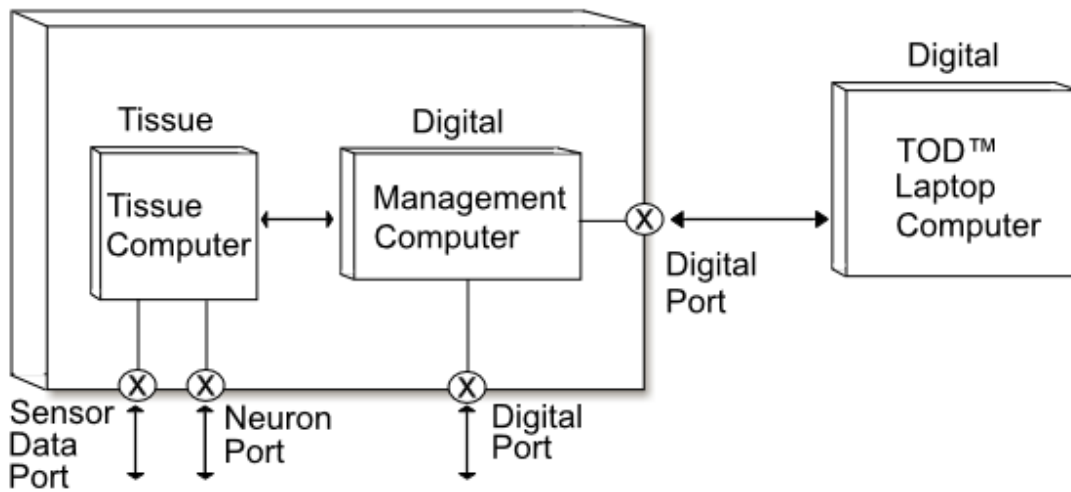
The nine TOD™ Models will be commercially offered as a family of general and special purpose live neural Tissue Computers. As presented in the Table, the nine unique Models provide Tissue Computing powered by 16 million to 5 billion living neurons.

TOD™ Models - Base Prices

TOD™ Model Number	Max Neuron Capacity	Base Price $ Millions [1] [2]
Model 16	16 million	0.6
Model 48	48 million	1.8
Model 64	64 million	2.4
Model 96	96 million	3.6
Model 192	192 million	7.2
Model 480	480 million	18
Model 1024	1 billion	32

Model 2048	2 billion	64
Model 5120 (Supercomputer)	5 billion	160

Notes:
[1] The listed prices are for a standard configured Model. All deviations and modifications are extra. Prices include a complete TOD™ system, including TOD™ system software, purchase, delivery, install, and setup by the professional TOD™ service team, a one-year full warranty for all parts and labor, and one year of 365/24/7 customer support services. See purchase agreement for specifics. Approved purchase discounts and special pricing allowances are taken off the base price.
[2] Listed prices exclude all taxes, duties, and related fees. All non-baseline configuration items, custom orders, and specific features are extra and not included in the base price. Extended warranty and special extend services agreements are available for purchase. All prices are subject to change without notice and BCM reserves the right to reject any purchase request without recourse.

TOD™ Model 16

The TOD™ Model 16 is the smallest size offered. It is powered by approximately 16 million live neurons in a standard sized desktop or floor tower. It requires standard electrical power service and operates at normal room temperatures. Similar to the care of a computer printer, a TC service care cartridge is replaced when notice is provided that service is required. The TC is a totally sealed plug and play processing module. Should a malfunction or failure occur, the TC module is simply replaced under the terms of the warranty.

The Model 16 includes a TOD™ customized laptop, internal management digital computer, the Tissue Computer. The Model includes operating software, utilities, and training programs. A limited number of application programs will be available. As more TOD™ systems are delivered, an expanded number of application programs will become available from third-party developers and from open-source communities.

The TOD™ Model 16 can be special ordered to reside in a processing cabinet or rack structure. A mobile ruggedized version is in development. For addition detail or questions contact a BCM Sales Representative.

TOD™ Model 48

The TOD™ Model 48 is a large step up from the Model 16. It is powered by approximately 48 million live neurons in a specially designed floor tower. It is equivalent to approximately three side-by-side standard computer towers. It requires standard electrical power service and operates at normal room temperatures. Similar to the care of a computer printer, a TC service care cartage is replaced when notice is provided that service is required. The TC includes a multiple number of totally sealed, "plug, and play" processing modules. Should a malfunction or failure occur, the impacted TC module is simply replaced under the terms of the warranty.

The Model 48 includes a TOD™ customized laptop, the internal management digital computer, the Tissue Computer, plus Model 48 TOD™ operating software, utilities, and training programs. As more TOD™ systems are delivered, a growing number of application programs will become available from third-party developers and from open-source communities.

The TOD™ Model 48 can be special ordered to reside in a processing cabinet or rack structure. A mobile ruggedized version is in development. For addition detail or questions contact a BCM Sales Representative.

TOD™ Model 5120 Supercomputer

At present there exist at least ten true digital supercomputers. Number one is Fugaku, the other nine digital supercomputers include: Cambridge-1, Summit, Sierra, Sunway TaihuLight, Selene, TianHe-2A, JUWELS Booster Module, HPC5, and Frontera. A recent new class of supercomputers was introduced by IBM – Q System One, a quantum computer.

A final new class is currently in design, a neural supercomputer – TOD™ 5120, which includes a Tissue Computer powered by more than 5 billion living neurons – a massive number with enormous processing power.

Supercomputers by Class

Digital	Quantum	Live Neuron
Fugaku A64FX	IBM Q System	TOD™ 5120

Note: The digital and quantum supercomputers are currently in operation, the TOD™ 5120 supercomputer is in design.

Relative to existing supercomputers, the TOD™ 5120 will be very small in size, use minimal electrical power, and produce little heat. These physical features are beneficial, but more impressive is the processing performance – near blinding processing speeds and throughput, massive data storage capacity, and lightning-fast data transfers. More importantly the TOD™ 5120 Supercomputer will be capable of real-time Adaptive Learning (AL) and continually expanding Application Knowledge (AK) capabilities. Together, these represent _real_, rather than artificial intelligence.

The TOD™ Model 5120 Supercomputer will be the largest live neuron Tissue Computer ever developed. The current preliminary design indicates required power of 3.5 Kilowatts and 950 sq. ft. of floor space for the data center cabinets.

Other features and characteristics are listed in the Table. The architecture addresses 5120 individual TC Disks, structured into 320 separate 16 array modules. These arrays are linked into a full live internal neural network with 10,240 TC Cords. These network cords are populated with millions of live neurons.

Specially protected and extended length TC Cords are used to connect, by live neural network, the 320 array modules located in the many cabinets required to house this supercomputer. The Model 5120 has many totally sealed, plug, and play processing modules. They are larger than those found in a TOD™ Model 16 or Model 48, but the act and function in the same way. For addition detail or questions contact a BCM Sales Representative.

TOD™ Model 5120 Supercomputer

Cabinet Configuration

TOD 5120 Supercomputer Characteristics

Internal Architecture	Enclosed 3-D Structure TC Disk Arrays
Processing Core	5,120 TC Disks
16-Pac TC Disk Arrays	320 in 3-D Structure
Internal Neuron Data Network	10,240 TC Cords
Neuron Total Population	5 Billion Live
Neurons per TC Disk	1 Million Live
Form of Processing	Natural Live Neurons
Advanced Adaptive Learning (AL)	Designed In
Application Specific Knowledge (AK)	Designed In
Power Consumption	3.5 Kilowatts
Floor Footprint	960 sq. ft.
Acceptable Source Data Formats	Digital, optical, audio, video, RF, inferred, thermal, sonic, seismic

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