



# Owning a TOD™ 5120 Supercomputer

## Benefits of the 70-30 Sales Program

*“The Age of Tissue Computing has Arrived™”*

Brought to you by BCM Industries

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.

BCM is introducing the newest class, a “live neuron” supercomputer. Currently in design, the TOD™ 5210 Supercomputer will be the world’s largest and most powerful live neuron Tissue Computer. (See Table 1).

**Table 1**

<b>Supercomputers by Class</b>		
<u>Digital</u>	<u>Quantum</u>	<u>Live Neuron</u>
Fugaku A64FX	IBM Q System	TOD™ 5120

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

The TOD™ 5210 contains billions of live neurons in a unified processor that is small in size, uses minimal electrical power and produces little heat. These physical features are beneficial and amazing when considering the processing performance from this small footprint Supercomputer. (See Tables 2 and 3).

**Table 2**

<b>Comparing Processing Energy and Physical Size</b>		
Subject [1]	TOD™ Tissue Computer <u>Model 5120</u>	Supercomputer <u>Fugaku A64FX</u>
Power Consumption	3.2 Kilowatts	26.2 Megawatts
Floor Footprint [2]	960 sq. ft	Massive

Because the TOD™ processing core uses customized, tissue disk (TC Disk) and tissue cord (TC Cord) networked arrays of live neurons, the TOD™ 5210 can deliver blinding processing speeds and throughput, massive data storage capacity, and lightning-fast data transfers.

At a total neuron population of 5 billion, this natural processing solution can perform many complex processing tasks at least 1,000 times faster than a classical digital computer. If a digital computer requires 1,000 seconds (16.7 minutes) to complete a complex processing task, TOD™ can complete it in ONE second. The complete processing task is done by the time one clicks on start or hits an enter key. (See Table 4).

More importantly the TOD™ delivered, live neuron processing provides, real-time, Adaptive Learning (AL) and continually expanding Application Knowledge (AK) capabilities. This is performed in either user controlled partitioned, or full 5120 consolidated TC Disks array configurations. (See Table 5).

To bring live neural supercomputing to data centers and laboratories of commercial enterprises, universities, and government agencies, for a limited time, BCM is offering a special 70-30 Program. Under this Program, the normal price of \$160 million for a TOD™ 5210 Supercomputer is reduced to only \$64 million.

**Table 3**

<b>Comparing Supercomputer Processing, Data Transfer, and Storage Capabilities</b>		
Subject [1]	TOD™ Tissue Computer Model 5120	Supercomputer TianHe-2
<b>Processing Tasks</b>		
System Core	Live Neurons	Silicon Chips
<b>Data Transfers</b>		
Internal Array	Live Neuron Populated Cord	Motherboard
Cabinet to Cabinet	Live Neurons Populated Cord	Fiber/cable
<b>Sourced Data [2]</b>		
Real-time Sensors	Direct Input to Live Neurons	Convert Data to Digital Form
Image Data	Direct Input to Live Neurons	Convert Data to Digital Form
Digital Data	Direct Accept by Live Neurons	Direct Digital Data Accepted
<b>Data Storage Capabilities</b>		
Non-Digital Sensor Data	Direct Input to Live Neurons	Convert Data to Digital Form
Digital Data	Direct Accept by Live Neurons	Direct Digital Data Accepted
<p>Notes: [1] This data is provided by the University of Tennessee, Knoxville, Oak Ridge National Laboratory for the TianHe-2, and by BCM for the TOD™ Model 5120, which is pro forma.</p> <p>[2] TOD™ will support immediate acceptance and flash processing of massive volumes of raw, direct sourced, sensor data in at least these formats: optical, audio, video, RF, inferred, thermal, sonic, and seismic.</p>		

**Table 4**

<b>TOD 5120 Supercomputer Characteristics</b>	
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

Using this 70-30 Program, a new TOD™ Model 5210, with 5 billion neuron processing capacity, can be acquired for the standard price of a TOD Model 2048, which operates with only 2 billion live neurons. The 70-30 Program provides the purchaser with an immediate savings of \$96 million.

In effect, buying a TOD™ 5210 Supercomputer is not a purchase, it is an investment that can provide a large ROI. This return is obtainable because the purchase price is quickly recovered from operational cost savings, and/or from the sale of excess supercomputer processing capacity to third parties. In-fact, ownership of a TOD™ 5210



Please note - this is a limited time opportunity. The Program may close at any time without prior notice.

For customers with special needs, BCM is able to design and build customized TOD™ 5210 Supercomputers to meet customer specific applications, including ruggedized systems for mobile and military applications. These special applications can include direct TOD™ attachment to many types of active sensors with outputs that are in optical, audio, video, RF, inferred, thermal, sonic, and seismic data formats.

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### **Additional 70-30 Program Points and Features**

Under the terms of the 70-30 Program, the customer purchases, takes title to, and owns the acquired TOD™ 5120. BCM holds no title, or ownership interest, in the purchased TOD™ 5120, or any facilities or data centers associated with operations.

As a part of the purchase agreement, the customer enters into a ten-year access sharing arrangement, which grants BCM access rights to thirty percent of all available TOD™ 5120 processing time and the balance remains with the purchaser. BCM shall have no control over the usage or resale of the purchaser's share of access rights, nor any rights to any revenues earned by purchaser.

The customer, without restrictions, designates and provides the location and secure facilities to house and operate the TOD™ 5120 Supercomputer and is responsible for all operating costs and care of such facilities.

The purchase price includes delivery of the supercomputer anywhere, worldwide, and complete system setup. It excludes, sales, use, VAT, GST, and any other taxes and duties.

The first-year full service and warranty agreements are included in the purchase price. Thereafter, the full-service support and warranty services for the supercomputer are \$3.6 million annually, of which BCM will annually pay 30% of this fee.

The 70-30 Program is a limited time offer. Purchaser ordered customized features, or design changes from the standard TOD™ 5120 configuration may incur additional costs.

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### **Additional TOD™ 5210 Supercomputer Details**

The TOD™ 5120 internal neuron tissue structured network consists of more than 10,240 TC Cords. Each Cord is filled with live neurons that transfer, at near light speed, data, images, AI, AL, and AK between TC Disks and all the TC living neuron population.

The tissue processing structure includes 5,120 independently functioning, neuron populated, TC Disks. Each TC Disk reside in either a 16-Pac planer array. The complete processing structure of the TOD™ 5120, is configured in a 3D architecture designed to ensure maximum neuron processing and data transfer effectiveness.

TOD™ is designed to fully support the many potential sensor driven data processing applications, thus eliminating any need for conversion to a digital data format. The design supports immediate acceptance and flash processing of massive volumes of raw, direct sourced, sensor data in at least these formats: optical, audio, video, RF, inferred, thermal, sonic, and seismic. Others may be available upon request.

The user required care of a TC module, is similar to the care of a digital printer. When the TC feeder container cartridge requires replacement, the user is noticed and simply replaces the cartridge.

The TC module is a completely sealed, operationally self-contained box. This box maintains the required environment to support and provide extended life to millions of active neurons. Any operational fault or failure is immediately corrected with new a plug and play TC module replacement.

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