



# Intel® Core™ i7-13700E Processor

## 30M Cache, up to 5.10 GHz

Ordering Code

CM8071505103704

Spec Code

SRMG3

|                                                              |                                            |
|--------------------------------------------------------------|--------------------------------------------|
| Intel® Core™ i7-13700E Processor (30M Cache- up to 5.10 GHz) |                                            |
|                                                              |                                            |
| Essentials                                                   |                                            |
| Product Collection                                           | 13th Generation Intel® Core™ i7 Processors |
| Code Name                                                    | Products formerly Raptor Lake              |
| Vertical Segment                                             | Embedded                                   |
| Processor Number                                             | i7-13700E                                  |
| Lithography                                                  | Intel 7                                    |
| Recommended Customer Price                                   | \$390.00                                   |
| Use Conditions                                               | Embedded Broad Market<br>Commercial Temp   |
|                                                              |                                            |
| CPU Specifications                                           |                                            |
| Total Cores                                                  | 16                                         |
| # of Performance-cores                                       | 8                                          |
| # of Efficient-cores                                         | 8                                          |
| Total Threads                                                | 24                                         |
| Max Turbo Frequency                                          | 5.10 GHz                                   |
| Performance-core Max Turbo Frequency                         | 5.10 GHz                                   |
| Efficient-core Max Turbo Frequency                           | 3.90 GHz                                   |
| Performance-core Base Frequency                              | 1.90 GHz                                   |
| Efficient-core Base Frequency                                | 1.30 GHz                                   |
| Processor Base Frequency                                     | 1.90 GHz                                   |
| Cache                                                        | 30 MB Intel® Smart Cache                   |
| Total L2 Cache                                               | 24 MB                                      |
| Processor Base Power                                         | 65 W                                       |
| TDP                                                          | 65 W                                       |

|                                               |                                           |
|-----------------------------------------------|-------------------------------------------|
|                                               |                                           |
| Supplemental Information                      |                                           |
| Marketing Status                              | Launched                                  |
| Launch Date                                   | Q1'23                                     |
| Embedded Options Available                    | Yes                                       |
|                                               |                                           |
| Memory Specifications                         |                                           |
| Max Memory Size (dependent on memory type)    | 128 GB                                    |
| Memory Types                                  | Up to DDR5 5600 MT/s Up to DDR4 3200 MT/s |
| Max # of Memory Channels                      | 2                                         |
| Max Memory Bandwidth                          | 89.6 GB/s                                 |
| ECC Memory Supported ⓘ                        | Yes                                       |
|                                               |                                           |
| Processor Graphics                            |                                           |
| Processor Graphics ⓘ                          | Intel® UHD Graphics 770                   |
| Graphics Base Frequency                       | 300 MHz                                   |
| Graphics Max Dynamic Frequency                | 1.60 GHz                                  |
| Graphics Output                               | eDP 1.4b   DP 1.4a   HDMI 2.1             |
| Execution Units                               | 32                                        |
| Max Resolution (HDMI)ⓘ                        | 4096 x 2160 @ 60Hz                        |
| Max Resolution (DP)ⓘ                          | 7680 x 4320 @ 60Hz                        |
| Max Resolution (eDP - Integrated Flat Panel)ⓘ | 5120 x 3200 @ 120Hz                       |
| DirectX* Support                              | 12                                        |
| OpenGL* Support                               | 4.5                                       |
| OpenCL* Support                               | 3                                         |
| Multi-Format Codec Engines                    | 2                                         |
| Intel® Quick Sync Video                       | Yes                                       |
| Intel® Clear Video HD Technology              | Yes                                       |
| # of Displays Supported ⓘ                     | 4                                         |
| Device ID                                     | 0xA780                                    |
|                                               |                                           |
| Expansion Options                             |                                           |
| Direct Media Interface (DMI) Revision         | 4                                         |
| Max # of DMI Lanes                            | 8                                         |

|                                                 |                                             |
|-------------------------------------------------|---------------------------------------------|
| Scalability                                     | 1S Only                                     |
| PCI Express Revision                            | 5.0 and 4.0                                 |
| PCI Express Configurations ⚡                    | Up to 1x16+4   2x8+4                        |
| Max # of PCI Express Lanes                      | 20                                          |
|                                                 |                                             |
| Package Specifications                          |                                             |
| Sockets Supported                               | FCLGA1700                                   |
| Max CPU Configuration                           | 1                                           |
| Thermal Solution Specification                  | PCG 2020C                                   |
| TJUNCTION                                       | 100°C                                       |
| Package Size                                    | 45.0 mm x 37.5 mm                           |
|                                                 |                                             |
| Advanced Technologies                           |                                             |
| Intel® Time Coordinated Computing (Intel® TCC)⚡ | Yes                                         |
| Intel® Gaussian & Neural Accelerator            | 3                                           |
| Intel® Thread Director                          | Yes                                         |
| Intel® Deep Learning Boost (Intel® DL Boost)    | Yes                                         |
| Intel® Speed Shift Technology                   | Yes                                         |
| Intel® Turbo Boost Max Technology 3.0 ⚡         | No                                          |
| Intel® Turbo Boost Technology ⚡                 | 2                                           |
| Intel® Hyper-Threading Technology ⚡             | Yes                                         |
| Intel® 64 ⚡                                     | Yes                                         |
| Instruction Set                                 | 64-bit                                      |
| Instruction Set Extensions                      | Intel® SSE4.1   Intel® SSE4.2   Intel® AVX2 |
| Idle States                                     | Yes                                         |
| Enhanced Intel SpeedStep® Technology            | Yes                                         |
| Thermal Monitoring Technologies                 | Yes                                         |
| Intel® Volume Management Device (VMD)           | Yes                                         |
|                                                 |                                             |
| Security & Reliability                          |                                             |
| Intel® Standard Manageability (ISM) ⚡           | Yes                                         |
| Intel® Control-Flow Enforcement Technology      | Yes                                         |
| Intel® AES New Instructions                     | Yes                                         |

|                                                               |     |
|---------------------------------------------------------------|-----|
| Secure Key                                                    | Yes |
| Intel® OS Guard                                               | Yes |
| Intel® Trusted Execution Technology ⓘ                         | Yes |
| Execute Disable Bit ⓘ                                         | Yes |
| Intel® Boot Guard                                             | Yes |
| Mode-based Execute Control (MBEC)                             | Yes |
| Intel® Virtualization Technology (VT-x) ⓘ                     | Yes |
| Intel® Virtualization Technology for<br>Directed I/O (VT-d) ⓘ | Yes |
| Intel® VT-x with Extended Page Tables (EPT)<br>ⓘ              | Yes |

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