## ACE MUSTANG W650R BUYING GUIDE WITH UPGRADES

### SYSTEM CPU UPGRADE

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>M.2 SSD (Slot 1) UPGRADE</th>
<th>HARD DISK DRIVE UPGRADE</th>
</tr>
</thead>
<tbody>
<tr>
<td>CORE i5-9600K 3.7 GHz Standard</td>
<td>WD Blue M.2 1TB $97.00</td>
<td>w/o HDD Standard</td>
</tr>
<tr>
<td>CORE i7-9700K 3.6 GHz $185.00</td>
<td>WD Blue M.2 2TB $227.00</td>
<td>1TB (7200rpm) $78.00</td>
</tr>
<tr>
<td>CORE i9-9900K 3.6 GHz $255.00</td>
<td>Samsung 860EVO M.2 1TB $123.00</td>
<td>1TB (FireCuda SSHD) $87.00</td>
</tr>
</tbody>
</table>

### SYSTEM MEMORY UPGRADE

<table>
<thead>
<tr>
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<th>M.2 SSD (Slot 1) UPGRADE</th>
<th>HARD DISK DRIVE UPGRADE</th>
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<tbody>
<tr>
<td>16GB DDR4 2400 (1x16GB) Standard</td>
<td>WD Black SN500 NVMe 500GB $186.00</td>
<td>WD Blue SSD 2TB $303.00</td>
</tr>
<tr>
<td>16GB DDR4 2400 (2x8GB) $29.00</td>
<td>WD Black SN750 NVMe 250GB $9.00</td>
<td>WD Blue SSD 250GB $65.00</td>
</tr>
<tr>
<td>32GB DDR4 2400 (2x16GB) $123.00</td>
<td>WD Black SN750 NVMe 500GB $69.00</td>
<td>WD Blue SSD 1TB $164.00</td>
</tr>
<tr>
<td>64GB DDR4 2400 (4x16GB) $330.00</td>
<td>Samsung 970Evo Plus NVMe 500GB $29.00</td>
<td>Samsung 860 Evo SSD 4TB $727.00</td>
</tr>
<tr>
<td>16GB DDR4 3000 (1x16GB) $65.00</td>
<td>Samsung 970Evo Plus NVMe 500GB $78.00</td>
<td>Samsung 860 Pro SSD 1TB $339.00</td>
</tr>
<tr>
<td>32GB DDR4 3000 (2x16GB) $173.00</td>
<td>Samsung 970Evo Plus NVMe 1TB $218.00</td>
<td>Samsung 860 Pro SSD 2TB $591.00</td>
</tr>
<tr>
<td>64GB DDR4 3000 (4x16GB) $616.00</td>
<td>Samsung 970Evo Plus NVMe 2TB $533.00</td>
<td>Samsung 860 Pro SSD 4TB $1,100.00</td>
</tr>
<tr>
<td>128GB DDR4 2666 (4 x 32GB) $745.00</td>
<td>Samsung 970Pro NVMe 512GB $129.00</td>
<td></td>
</tr>
</tbody>
</table>

### OS UPGRADE OPTIONS

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>GSA/SEWP V</th>
<th>Cases</th>
<th>Screen Upgrades</th>
<th>GSA/SEWP V</th>
<th>RETAIL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Win 10 Home* Standard</td>
<td>Messenger Type Bag</td>
<td>Standard</td>
<td>30 Days No Dead Pixel</td>
<td>$45.00</td>
<td></td>
</tr>
<tr>
<td>Win 10 Pro* $50.00</td>
<td>Backpack style</td>
<td>$30.00</td>
<td>Screen Calibration (OS Req)</td>
<td>$45.00</td>
<td></td>
</tr>
<tr>
<td>Win 10 USB Recovery $30.00</td>
<td>Rolling Style</td>
<td>$79.00</td>
<td>90 Days no dead pixel</td>
<td>$85.00</td>
<td></td>
</tr>
</tbody>
</table>

* listed prices are in ADDITION to the system price. These are not stand alone prices.

* 4 HDD capable (coexisting of 2x M.2 SSD (2x PCIe (Gen3 X4) or SATA3 & 2x 9.5mm 2.5" SSD/HDD))

* RAID: RAID 0/1 capability with matching SATA or NVMe, RAID Capable drives only, (WD Black Drives is not RAID Capable).

* No Recovery Media included for windows 10.

### Power Accessories - Can be ordered as spare parts or with a system

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
<th>GSA/SEWP</th>
<th>RETAIL</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACA-9176</td>
<td>NP9176 330W AC ADAPTER WITH POWER CORD</td>
<td>$155.00</td>
<td>$195.00</td>
</tr>
<tr>
<td>BAT-9176</td>
<td>NP9176 SMART Lithium-Ion BATTERY PACK (8 CELLS 82 WH)</td>
<td>$129.00</td>
<td>$175.00</td>
</tr>
</tbody>
</table>

** ALL PRICES SUBJECT TO CHANGE WITHOUT NOTICE **
ACE MUSTANG W650R DETAILED SPECIFICATIONS

Special Feature(s):
World's first 15.6-inch Coffee Lake LGA1151 CPU- and MXM 3.1 GPU-upgradeable laptop based on Intel Z370 Chipset

Main Chipset:
Intel Z370 (Coffee Lake)

Processor:
Socket LGA 1151
Coffee Lake-S CPUs
up to i9-9900K / 8700K

Video / GPU:
Modular MXM 3.1: 100x124mm; up to 190W
NVIDIA GeForce: GTX 1080, 1070, 1060
NVIDIA GeForce: RTX 2080, 2070, 2060

Built-in PC Camera:
Built-in 2M FHD

LCD Size:
15.6in / 39.6cm

LCD Specifications:
FHD (1920x1080); 60Hz/120Hz/144Hz
UHD 4K (3840x2160); 60Hz
up to 4 active displays; up to 4K @ 60Hz
G-Sync optional

Memory:
Four 260-pin 1.2V SODIMM sockets;
DDR4-2133/2400/2666/3000; up to 128GB; non-ECC

Total Storage:
up to 4 physical drives:
- 2x M.2 2280 SSD PCIe 2x4 NVMe or SATA
- 2x 2.5" 9.5mm/7mm HDD/SSD/SHDD
- RAID 0/1
- supports Intel Optane technology

Optical Drive:
External; USB based DVD-RW or Blu Ray-RW

Card Reader:
6-in-1 Push-Push Card Reader
MMC/RSMMC SD/mini SD/SDHC/SDXC
UHS-II

Audio Architecture:
High Definition Audio; Realtek ALC892
S/PDIF Digital Output
Built-in microphone
Built in two 2W speakers
7.1CH output (headphone, mic, line-in and S/PDIF)
ESS Sabre ES9018K2M HiFi Audio DAC (headphone)
Sound Blaster X Pro-Gaming 360°

LAN/WLAN/Bluetooth:
- 1Gb Ethernet LAN on-board; Killer E2500
- WLAN / Bluetooth; M.2 2230 slot supports 1Gbit WLAN
- prewired for 3G/4G/LTE (built-in antenna and SIM socket)

Security:
Kensington Lock
Fingerprint
TPM 2.0 on-board (Infineon SLB9665-TCG)

Internal cards / # of slots/Type:
Four M.2 slots
-1st: WLAN M.2 2230 Card with PCIe x2
-2nd for SSD M.2 2280 Card with SATA / PCIe x2x4 NVMe / Optane
-3rd for SSD M.2 2280 Card with SATA / PCIe x2x4 NVMe
-4th M.2 3042 for LTE or UMTS/HSPA

I/O Ports:
1 x Thunderbolt3 (USB 3.1C)
1 x USB 3.1C
3 x USB 3.1 (1x powered, AC/DC)
1 x USB 2.0
2 x mini DisplayPort 1.3
1 x HDMI 2.0 output
1 x 2-in-1 Audio Jack (Headphone / S/PDIF)
1 x Microphone-in
1 x Line-out
1 x Line-in
1 x RJ-45 LAN
1 x DC-in

Internal Keyboard:
Backlit (7-colours) full size keyboard with numeric pad

TouchPad with multi-gesture and scrolling
W/AS/D Gaming key

AC Adapter:
330W 100-240V 50-60Hz Auto-switching

Battery:
8cells Smart Li-Ion; 82WH

up to 130 minutes

Weight:
3.4kg / 7.48 lbs

Dimensions WxDxH:
386x262x38mm; 15.44x10.48x1.52-inch

Thickness:
1.52in / 38mm

Shipping / Packaging L xWx H / N.W. / G.W.:
547x112x319mm / 21.88x4.48x12.76 inch
5.48kg / 12lbs