MCONN 7

CONNECTED DISPLAY – 7"

The **MConn 7** is our new generation of Connected Displays with a powerful 32-bit multi-core ARM Cortex-A9 processor, 2D, 3D, and Vector Graphics hardware acceleration. Featuring a multi-touch 7" PCAP touchscreen, operators can take advantage of many gestures found on tablets today, including pinch-to-zoom, rotation, flick, and many more.

The display comes packed with a rich set of wired interfaces, including CAN (2x), LIN, Digital INs (12x), Digital OUTs (4x), Analog Ins (6x) Ethernet, USB (2x), Audio, and Camera inputs (4x, optional). Numerous radio interfaces are available as option upon consultation - 4G/LTE, GPS, Wi-Fi, Bluetooth and AM/FM.

All MConn7 device are running on Embedded Linux OS.

SPECIFICATION

PROCESSOR

MAIN PROCESSOR	NXP i.MX6, 32-bit Cortex-A9 ARM processor Single core (800 MHz) or Quad core (1 GHz)
CO-PROCESSOR	Watchdog, analog inputs, and CAN functions.
RAM	512 MB or 1 GB
GPU	2D, 3D, Vector Graphics Hardware Acceleration
VIDEO	1080p, 30fps, encoding and decoding
STORAGE	4 GB eMMC for OS and user application. Up to 512 GB available on micro-SD card for additional applications or logging
BOOT TIME	< 8 second boot possible, 2 seconds to splash screen CAN ready in < 0.5s on coprocessor

DISPLAY

SCREEN SIZE	7" WVGA IPS
RESOLUTION	1024 x 600 pixels
BRIGHTNESS	800 cd/m^2
COLOR DEPTH	24 bit
CONTRAST RATIO	800:1
VIEWING ANGLE	$\theta L = 85°$ $\theta R = 85°$ $\theta T = 85°$ $\theta B = 85°$
BACKLIGHT	User programmable, 0-100%
TOUCHSCREEN	PCAP, 5-point multi-touch

ENCLOSURE

MATERIAL	ABS Plastic, with Gore membrane
MOUNTING	VESA 50, optional mounting bracket
CONNECTORS	1x TE 1-776231-1 1x TE 776261-1 1x Gigabit Ethernet connector 2x USB connector (optional dust cap) 2x SMA (optional; GPS, GSM, AM/FM)
IP CLASS	IP54 IP65 (optional)
EMC/EMI	ISO 10605, CISPR 25
IMMUNITY	ISO 7637-2, ISO 16750-2
SHOCK	ISO 16750-3, 20G
VIBRATION	ISO 16750-3, Test VII
TEMPERATURE RANGE	Operating: -20°C to +70°C Storage: -30°C to +80°C
SIZE	200.6mm x 139.1mm x 35mm

OTHER

BUZZER	85 dB, PWM Capable
Real Time Clock	Onboard battery to keep track of time while unit is powered off

SOFTWARE

OPERATING SYSTEM	Linux
SOFTWARE IDE	Qt5
SOFTWARE UPDATES	USB, Ethernet, CAN Wi-Fi (optional)

INTERFACES

|	
CAN	2x CAN, 20 kbps – 1Mbps
LIN	1x LIN, 1 kbps – 20 kbps
ETHERNET	Gigabit Ethernet, 10/100/1000 Base-T Available for digital cameras
USB	2x USB 2.0 (with optional dust cap)
CAMERA *	4x Analog video inputs NTSC or PAL, Single-Ended or Differential
AUDIO	Stereo out, Mic in
INPUTS	12 digital inputs (2 inputs for frequency measurement) 6 analog inputs
OUTPUTS	4 digital outputs (high side drivers, 2A each)
POWER SUPPLY	9-32 VDC. CPU operational down to 7 VDC
IGNITION	Ignition input for CPU
CELLULAR *	4G/LTE
GNSS *	NMEA data, dedicated GPS antenna connection
Wi-Fi *	802.11 bgn, +20 dBm TX, -97 dBm RX
BLUETOOTH *	Bluetooth 4.0, +20 dBm TX, -94 dBm RX
RADIO TUNER *	AM/FM/WX Tuner with RDS decoder

*Available upon request. Subject to consultation between customer and supplier.

I/O INTERFACE
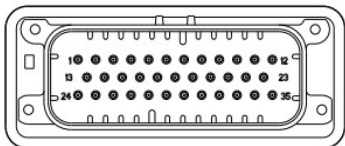
Mating Connector: AMPSEAL 776164-1

Pin	Function	Pin	Function	Pin	Function	Pin	Function	Pin	Function	Pin	Function
1	Digital In	7	Digital Out	13	VCC_LIN	19	Analog In	25	Digital In	31	Digital In
2	Digital In (freq. meas.)	8	Digital In	14	LIN	20	Analog In	26	CAN1_L	32	CAN2_L
3	Digital Out	9	Analog In	15	GND	21	GND	27	CAN1_H	33	CAN2_H
4	Digital Out	10	Analog In	16	VCC	22	Analog In	28	Digital In	34	Digital In
5	Digital In (freq. meas.)	11	Digital In	17	Analog In	23	VCC	29	Digital In	35	Digital In
6	Digital Out	12	Digital In	18	GND	24	GND	30	Ignition		
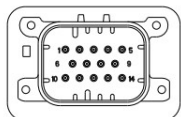
Mating Connector: AMPSEAL 776273-1

Pin	Function	Pin	Function	Pin	Function	Pin	Function	Pin	Function
1	NC	4	Audio L	7	NC	10	NC	13	Audio Mic
2	NC	5	Audio R	8	NC	11	NC	14	GND
3	NC	6	GND	9	GND	12	NC		

OPTIONS	
LCD SURFACE TREATMENT	Anti-Glare Anti-Reflection Optically Bonded or non-Optically Bonded (optional)
LCD BACKLIGHTING	IPS Backlight
MOUNTING	Bracket for panel mounting Bracket for pedestal mounting

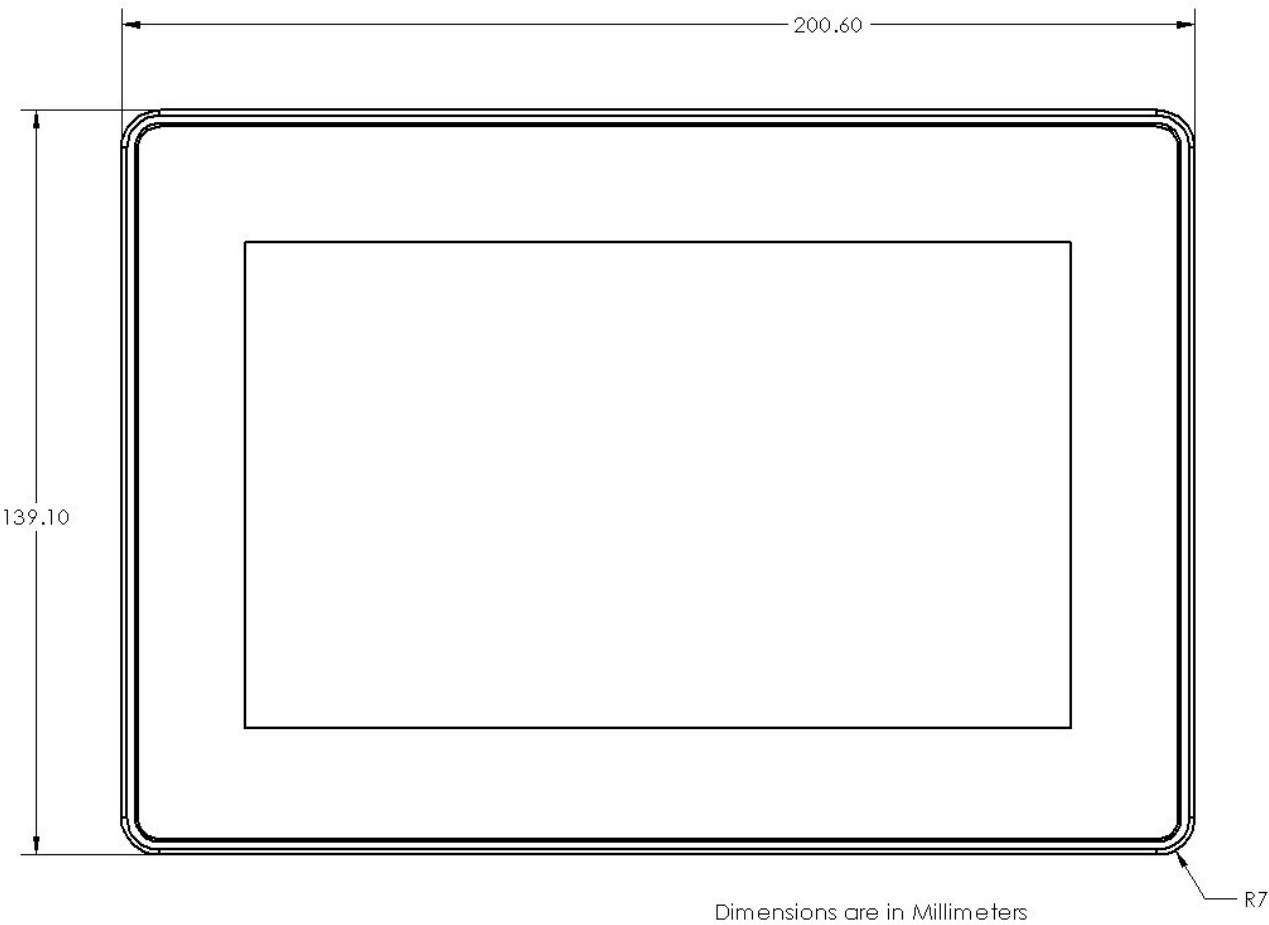|	BASIC	A-QUAD
CPU	Single Core	Quad Core
RAM	512 MB	1 GB
SD-STORAGE	64 GB (integrated)	
INGRESS PROTECTION	IP54	
2X CAN, LIN	✓	
DIGITAL IN	12 (2 inputs for frequency measurement)	
DIGITAL OUT	4	
ANALOG IN	6	
AUDIO IN / OUT	-	✓
USB 2.0	2	
ETHERNET	✓	
LINUX OS / QT	✓	
PART NUMBER	1.145.020.0181	1.145.323.0151

*Only available as prototypes. Subject to consultation between customer and supplier.

ACCESSORIES	
Programming cable	502247
Mating connector / AMPSEAL 776164-1, 35pin	501833
Mating connector / AMPSEAL 776273-1,14pin	501831
Crimp contact / AMPSEAL 770520-1	501834

DIMENSIONS

Front View

200.60

139.10

R7

Dimensions are in Millimeters

Top View

3.50

16.39

30.30

4.70

Dimensions are in Millimeters

MRS Group, 78628 Rottweil, Germany

Preliminary version. Subject to change without notice!

MConn 7
Connected Display – 7"