

# DATA MODUL integrates radar-based presence sensor into monitors

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DATA MODUL, the Munich-based full-service display specialist, is now offering its industrial customers specific monitor applications with radar-based sensor solutions.

Radar systems usually use electromagnetic waves in the frequency range of radio or microwaves to recognise objects and determine their distance. Depending on the application, the sensors required for this are now very compact in design and (depending on the version) contain both the transmitter and receiver units as well as the corresponding antennas on a single chip.

The currently available DATA MODUL solution is available for monitors with eMotion UHD-II scaler boards. In the standard use case, the display brightness is adjusted accordingly depending on whether people are in the vicinity of the monitor. In general, the display could even be switched off completely if necessary. Reducing the brightness or switching off the display as required significantly reduces the operating costs of the monitor and also considerably increases its service life.

Apart from the aforementioned purpose, the data from the radar sensor can also be used to 'trigger' different events. Example: If a person approaches a monitor equipped with a radar sensor (e.g. at the POS), the content shown on the display could change from a full-screen advertising film to a table with information. This allows a targeted and precise customer approach to be realised.

The parameters of the sensor function, such as sensitivity or range, can be adjusted via OSD (On Screen Display); for example, the detection range can be adjusted between 2 metres and >10 metres. The DATA MODUL radar sensor module has an I2C interface. This means that other eMotion boards and embedded platforms can be combined with the sensor if required. For special applications, an API could also be implemented on the DATA MODUL platforms to allow customers remote access to the sensor data (e.g. via RS232 or DDC/CI).

For implementation in its system solutions, DATA MODUL uses a highly integrated 60GHz radar sensor chip with a size of just 6.5mm x 5.0mm x 0.9mm (including antennas), a detection range of up to 15 metres and a detection angle > 160°; the operating temperature range of the sensor is between -20°C and +70°C. The radar sensor is mounted on a circuit board in the front frame of the monitor, on which two light sensors are also mounted: One of these is used for the ALC (Ambient Light Control) function, which can optionally control the backlight depending on the ambient brightness. The second light sensor is used for the DPM (Display Performance Monitoring) function, which monitors the status and brightness of the display. The sensor board also has status LEDs and an IR receiver for remote control applications.

For typical presence detection even under difficult environmental conditions, radar technology offers many advantages over other sensor technologies. Depending on the design and operating frequency of the sensor, very long ranges and detection angles can be achieved. In addition, a radar sensor is insensitive to ambient light (e.g. high IR radiation), resistant to dirt and vandalism and therefore also ideal for outdoor applications. The sensor – typically mounted behind a plastic cover – can be easily integrated into the front panel of a monitor.

Further information can be found at [www.data-modul.com](http://www.data-modul.com)

### About DATA MODUL

As a passionate enabler, DATA MODUL AG does everything in its power to turn customers' visions into reality. With a comprehensive understanding of hardware, software and services as a harmonious unit, the focus is on developing customised display solutions that precisely meet the specific needs and objectives of the customer. The outstanding core competence of DATA MODUL AG lies in customising, whereby the company not only provides products, but rather tailor-made solutions with a clear market focus. With over 50 years of experience, DATA MODUL AG represents financial stability, innovative strength and international growth. Its presence at more than 20 locations worldwide and a total area of around 40,000 square metres for production, logistics and administration enables the company to respond flexibly to global challenges.

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