EXTENDED DISPLAY LINK

UP TO 100 METER LONG-DISTANCE RELATIONSHIP

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RAFI

EXTENDED DISPLAY AT A GLANCE

The trend towards the central computer unit continues to increase. In addition, it is becoming more and more common that no CPU is installed in the HMI display panel for space reasons. In this case, the HMI panel is controlled from the single central CPU. However, the distance between the CPU and the HMI display is usually longer than 10 meters and standard connections and interfaces do not support these large distances. For this reason, RAFI has created the EXTENDED DISPLAY LINK platform and offers various technologies to bridge medium and long distances of up to 100 meters. In this connection, audio and video signals, Internet and network protocols, user inputs an USB, as well as the power supply for

For many years, leading companies in various industries have been counting on **RAFI**.

HMI for metalworking machine

Mobile HMI for industrial robots

HMI for snow plow

HMI for breathing apparatus

LINK

the HMI panel can be transported over long distances without any loss of quality. RAFI has developed a standard HDBaseT module for bridging long distances. This enables cost-effective integration into individual, customer-specific applications.

YOUR ADVANTAGES

- Extremely flat and slim HMI design
- Easy realization of standard HMI for various machines and systems
- Cost savings due to less CPUs
- Use of simple cables
- Use of various cost-optimized technologies
- Less development and maintenance effort
- Reduced software effort

EXTENDED DISPLAY LINK FULL RANGE

- Ethernet interface
- Ethernet cable
- Up to 100 meters length without quality loss
- Full functionality
- Technologies: BROADR-REACH, HDBT

EXTENDED DISPLAY LINK MID RANGE

- Industrial and customer specific interfaces
- Simple cables (twisted-pair)
- Up to 15 meters length
- Signal diversity (Ethernet, touch, audio...)
- Technologies: FPD LINK, APIX, GMSL

EXTENDED DISPLAY LINK SHORT RANGE

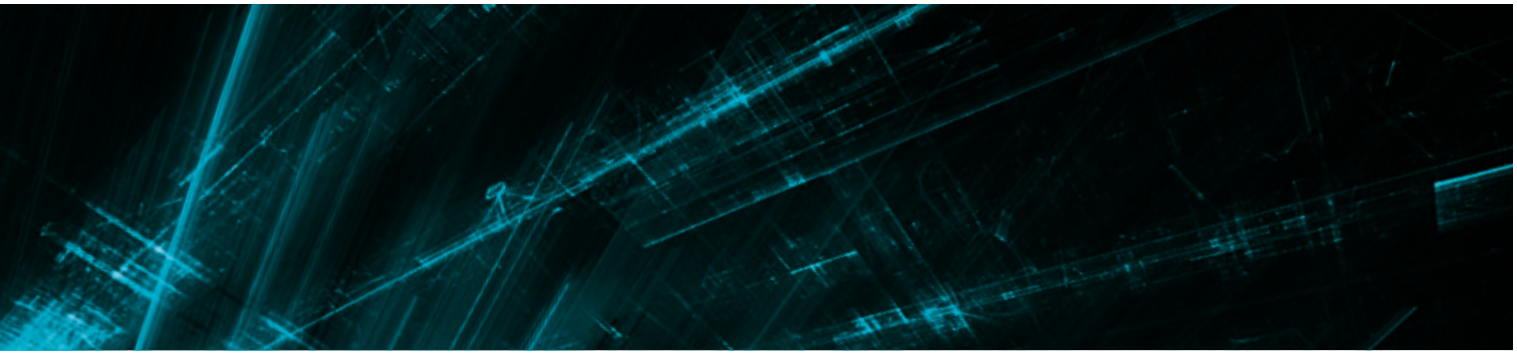
- Standard interfaces
- Standard cable
- Maximum length of 5-10 meters
- Few signals (display, audio)
- HDMI, DISPLAY PORT, USB

THE TECHNOLOGIES AT A GLANCE

MID RANGE

	FPD LINK III Flat Panel Display Link	**APIX 2** Automotive Pixel
HDMI / LVDS / RGB	● / ● / ●	● / ● / ●
Touch Interface	✓	✓
USB / Ethernet	- / -	- / ●
UART / SPI / I2C	- / ● / ●	- / ● / ●
Resolution	1920 x 1080	1920 x 720
Color depht	24 bit	24 bit
Data rate	up to 3 Gbps	up to 3 Gbps
Range	15 meter	15 meter
Cable	Coax, Shielded Twisted Pair	Coax, Shielded Twisted Pair

* BroadR-Reach requires a computer unit (ECU) with Ethernet support in the HMI panel



FULL RANGE

GMSL Gigabit Multimedia Serial Link	**BroadR-Reach**	**HDBaseT**
● / ● / ●	ECU dependent*	● / ● / -
✓	✓	✓
- / ●	- / ●	● / ●
● / - / -	- / - / -	● / ● / ●
1920 x 720	2048 x 1080 with codec	up to 4K
24 bit	-	24 bit
up to 3.12 Gbps	100 Mbps	up to 8 Gbps
15 meter	100 meter	100 meter
Coax, Shielded Twisted Pair	Twisted Pair	CAT5e

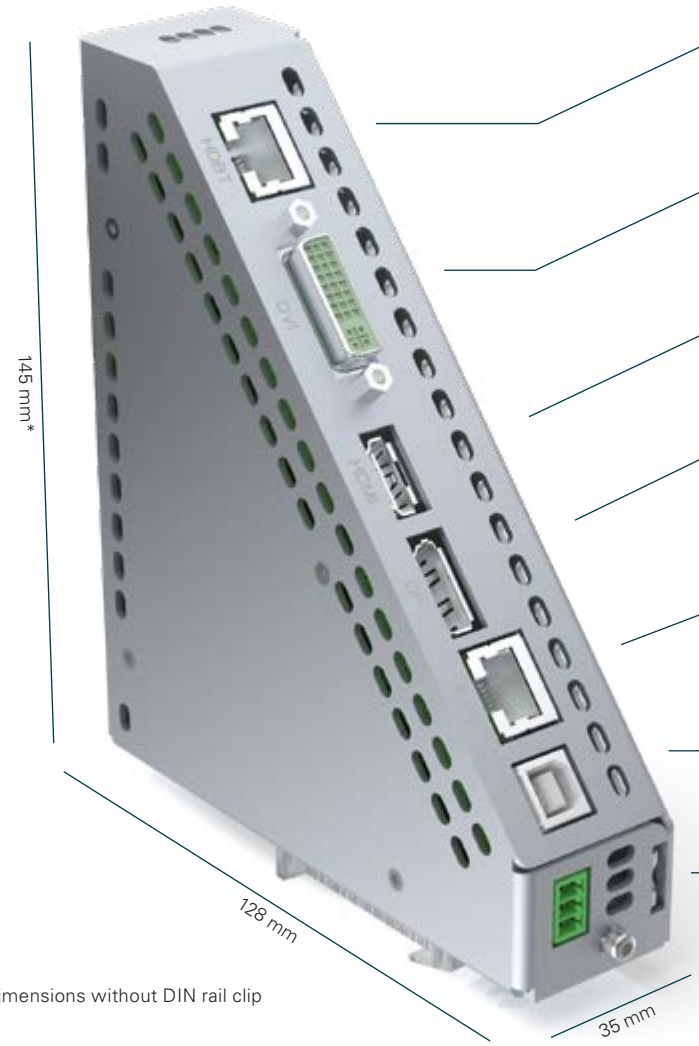
HDBT

UP TO 100 METER LONG-DISTANCE RELATIONSHIP

With HDBaseT technology, high-resolution multimedia signals can be transmitted uncompressed at up to 8 Gbps over 100 meters.

In addition, HDBaseT offers low-cost installation, easy cabling, and very low latency, among other benefits.

RAFI's **HDBaseT Hub** enables cost-effective embedding in the control of large systems.



*Dimensions without DIN rail clip

HDBT

Typ RJ45, V2.0, max 100 m

DVI

Typ DVI-I, single–link, up to 1920 x 1200 @ 60 Hz

HDMI

V2.0, up to 4k @ 60 Hz

DisplayPort

V1.2a, up to 1080p @ 30 Hz (only for LVDS signals)
Optional / on request

Ethernet

Typ RJ45, 10/100 Mbps Full Duplex

USB

Typ B, USB 2.0 High Speed (480 Mbps), Self-powered

Power Supply

18 V ... 30 V DC

Assembly
DIN rail TS35

Operating Temperature
0 °C … +40 °C

FLEXIBILITY

ONE STANDARD FOR DIFFERENT SYSTEMS

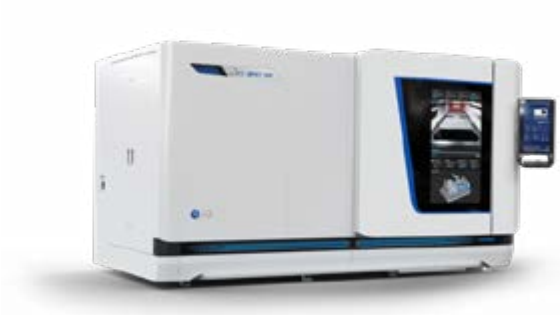
More and more frequently, our customers confront us with the desire for a standard HMI that can be used as a platform for all machines and systems in their product portfolio. A modern, slim and flat design for the HMI platform is essential. At the same time, the machines and systems have very different sizes and dimensions, so that quite different distances have to be covered between the HMI display panel and the central CPU.

For this requirement we have developed our HDBaseT standard module, which allows a cost-effective integration into individual, customer-specific applications and at the same time allows the flexibility to integrate a standard HMI into different machines and systems. We have already been able to successfully integrate our standard module into various customer applications and thus meet their demand for a slim and flat standard HMI.

HMI platform for surface and profile grinding machine

HMI platform for cylindrical grinding machine

HMI platform for laser



HMI platform for grinding center

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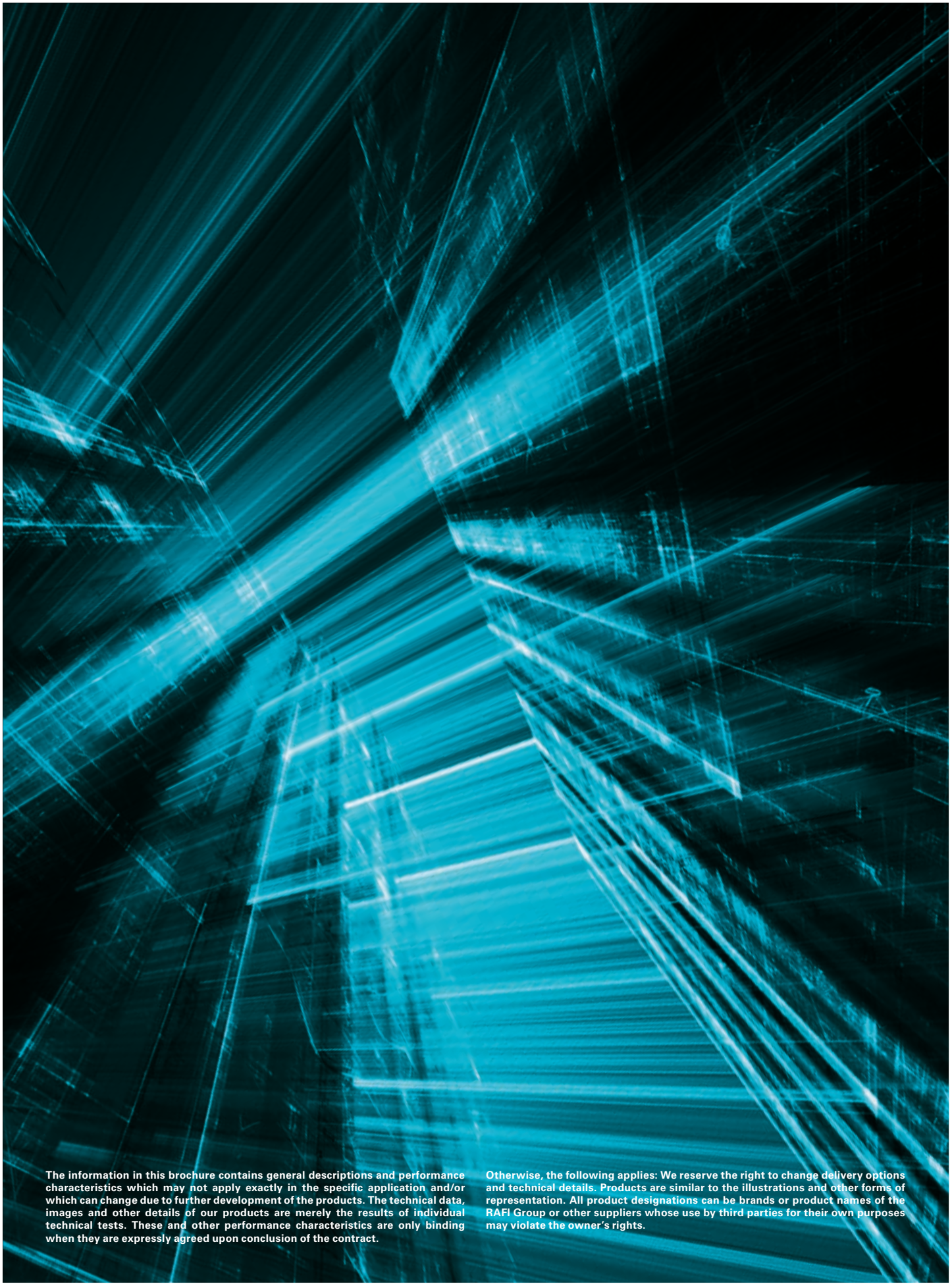

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