

## **"TCA"** POWER MODULE INPUT CONNECTOR







MEMBER OF



Following on the heals of the ATCA standard which was developed by the PICMG® subcommittee, the MicroTCA version defines a specification for small, low-cost systems which over time are expected to find their way into a whole range of new applications.

# QUALITY IN CONNECTION POWER INPUT CONNECTORS FOR MICROTCA

An inherent part of a MicroTCA system is at least one power module. Power input connectors are located on the front of a power module. A cable is installed between the connectors and the external power source.

The MicroTCA specification defines the interface which should be applied.

#### **SPECIFICATION FOR POWER INPUT CONNECTORS**

The 7W2 combination D-SUB connector was selected for power supplies with -48 V and -60 V inputs. For coding purposes, the 9W4 was chosen for +24V inputs.

The connector has two high-current contacts and two signal contacts in a conventional D-SUB housing. The signal contacts act as control contacts used for hot swapping, and the specification states that they should be shunted at the cable connector end

At the maximum rated current of 24A per power pin for the 7W2 version and 49A for the 9W4 type, the temperature rise at the contact must not exceed  $30^{\circ}$  C.

Furthermore the specification claims, that the connector should be designed for 200 mating cycles and additional EMI filtering options should be available.



## Power Modules\_



For many years, CONEC has been one of the leading suppliers of reliable, high-precision connectors for telecommunications and industrial electronics. These high-quality combination connectors have a proven track record worldwide in a whole range of applications.

The high standards led to the development of a MicroTCA power input connector which exceeds MicroTCA specifications. The power contacts used by CONEC are precision screw machined parts. Due to the material selection and workmanship, the connectors meet and exceed the mechanical and electrical standards and offer significant power and performance reserves.

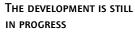
A special diecasting process is used to produce the rugged mounting brackets which provide an extremely stable attachment to the PCB.

In addition to the connectors specified in the MicroTCA standard, CONEC offers several variants as single-port versions, SMT types and connectors with a standard combination D-SUB connector footprint.

Applicable socket connectors and cable housings, which allow a concurrent occupation of both ports, complete the product range.

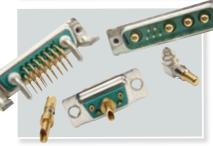
#### FILTER TECHNOLOGY

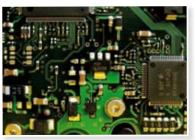
The MicroTCA standard types and several versions were alternatively offered as filtered connectors. The application of filtered connectors saves space on the PCB and reduces assembly costs. Filter connectors require the same PCB layout as the standard versions. CONEC offers the MicroTCA power module input connectors with a standard low pass filter with a capacitance of 10 nF and 54 nF per power pin. Other versions are available on request.

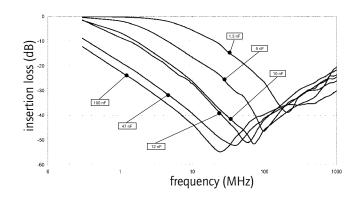


Special requests by customers and our collaboration in the PICMG® subcommittee show: the efforts for standardization are still in progress but simultaneously the demand for special solutions is still growing. If you don't find your connector in this overview: Just inquire!

#### www.conec.com







## MICROTCA POWER MODULE INPUT CONNECTOR IN ACC. TO MICROTCA.O SPECIFICATIONS

#### Technical Data

Technical Data		
	Material	Finish
Insulator	PBT (UL 94-VO)	
Power contacts	Copper alloy, screw machined contacts	Mating area Au over Ni
		Termination area Sn over Ni
Signal contacts	Copper alloy, screw machined contacts	Mating area Au over Ni
		Termination area Au over Ni
Shell	Steel	Tin plated
Mounting brackets	Zinc diecast	Tin plated
Thread insert UNC 4-40	Copper alloy	Tin plated
Hexagonal bolts with	Steel	Nickel plated
UNC 4-40 thread and washers		
Boardlock for 1,6 mm PCB	Copper alloy	Tin plated
Electrical Characteristics		
Current rating	Power contacts	24 A @ max. 30°C temperature rise
	Signal contacts	7,5 A nominal
Creepage and clearance distances	Power contacts	1,5 mm min.
	Signal contacts	0,4 mm min.
	Signal and power contacts	1,5 mm min.
	Power contacts and shell	1,5 mm min.
	Signal contacts and shell	1,5 mm min.
Insulation withstanding between	Power contacts	5000 MOhm min.
	Signal contacts	5000 MOhm min.
	Signal and power contacts	5000 MOhm min.
	Power contacts and shell	5000 MOhm min.
	Signal contacts and shell	5000 MOhm min.
Voltage proof	1000 V r.m.s.	
Mechanical Characteristics		Directive 2002 95 EC "ROHS" Compliant
Mechanical operations	250 Cycles	Compinant

100 N max.

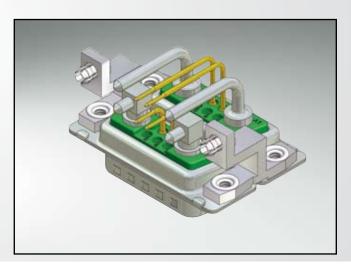
65 N max.

Insertion force

**Extraction force** 

## MICROTCA POWER MODULE INPUT CONNECTOR

#### Standard Version

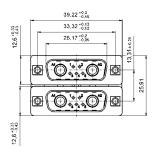


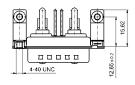
#### PRODUCT FEATURES\_

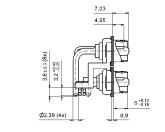
Standard dual port version of 7W2 type for -48V/-60 V power input modules. Two power contacts with 24 A current rating and two signal contacts in acc. to MicroTCA specifications. Solid zinc diecast mounting brackets for secure mount on the printed circuit board.

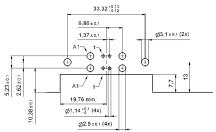
- Standard version in acc. to MTCA.O-specification
- 7W2 type for -48/-60V power modules
- 9W4 type for +24 V power modules on request
- Filtered versions with 54 nF or 10 nF

#### CONNECTOR DIMENSIONS AND PCB-HOLEPATTERN







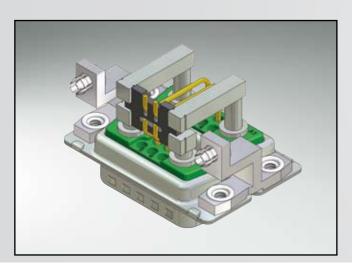


Mounting options shell	Filter Options	Part numbers	
with UNC 4-40 thread and hexagonal bolts UNC 4-40*	-	13-000011	
with UNC 4-40 thread w/o bolts	-	13-000021	
with UNC 4-40 thread and hexagonal bolts UNC 4-40*	54 nF filter	24-000031	
with UNC 4-40 thread w/o bolts	54 nF filter	24-000011	
vith UNC 4-40 thread and hexagonal bolts UNC 4-40*	10 nF filter	24-000041	
vith UNC 4-40 thread w/o bolts	10 nF filter	24-000051	

<sup>\*</sup>design of hexagonal bolts and additional accessories see page 15

## MICROTCA POWER MODULE INPUT CONNECTOR

#### **SMD** Version

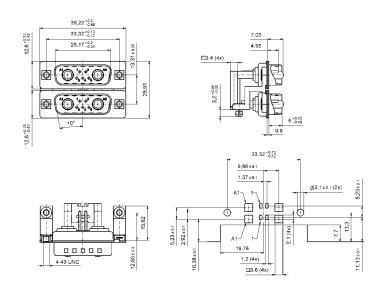


#### PRODUCT FEATURES\_

Surface mount type of the specified MicroTCA standard connector. For reliable surface mount processing the contacts are prepositioned by a special fixing plate. The power pins are rated for up to 35 A per contact.

- SMD version
- 7W2 type for -48/-60V power modules
- 9W4 type for +24 V power modules on request

#### CONNECTOR DIMENSIONS AND PCB-HOLEPATTERN

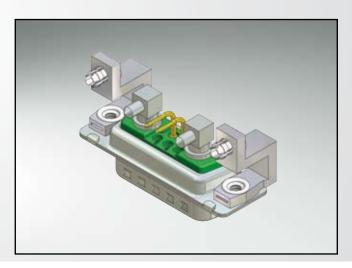


Mounting options shell	Part numbers
with UNC 4-40 thread and hexagonal bolts UNC	13-000031
with UNC 4-40 thread w/o bolts	13-000041

<sup>\*</sup>design of hexagonal bolts and additional accessories see page 15

## Power Module Input Connector

## MicroTCA PCB Layout - Single Port



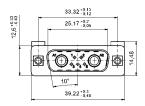
#### PRODUCT FEATURES\_

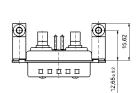
7W2 type single port version for the design of "compact size" power modules with one power supply input. Two power contacts rated up to 24 A and two signal contacts in acc. to MicroTCA specifications.

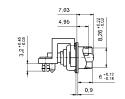
Solid zinc diecast mounting brackets for secure mount on the printed circuit board.

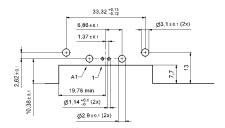
- Single port version for MicroTCA PCB Layout
- 7W2 type for -48/-60V power modules
- 9W4 type for +24 V power modules on request
- filtered versions with 54 nF or 10 nF

#### CONNECTOR DIMENSIONS AND PCB-HOLEPATTERN







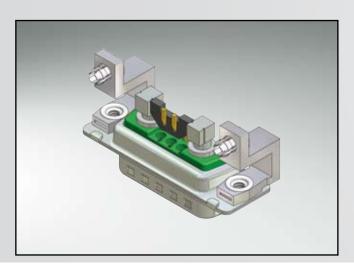


Mounting options shell	Filter options	Part numbers	
with UNC 4-40 thread and hexagonal bolts UNC 4-40*	-	13-000051	
with UNC 4-40 thread w/O bolts	-	13-000061	
with UNC 4-40 thread and hexagonal bolts UNC 4-40*	54 nF filter	24-000061	
with UNC 4-40 thread w/O bolts	54 nF filter	24-000071	
with UNC 4-40 thread and hexagonal bolts UNC 4-40*	10 nF filter	24-000081	
with UNC 4-40 thread w/O bolts	10 nF filter	24-000091	

<sup>\*</sup>design of hexagonal bolts and additional accessories see page 15

## Power Module Input Connector

## MicroTCA PCB Layout - Single Port SMD Version



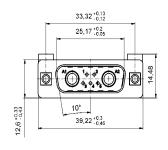
#### PRODUCT FEATURES.

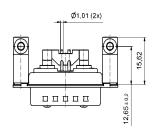
7W2 type single port version. SMD type for surface mount technology. For secure surface mount processing the contacts are prepositioned by a special fixing plate.

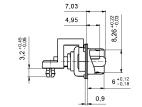
The power pins are rated for up to 35 A per contact.

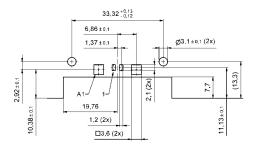
- SMD version
- 7W2 type for -48/-60V power modules
- 9W4 type for +24 V power modules on request

#### CONNECTOR DIMENSIONS AND PCB-HOLEPATTERN







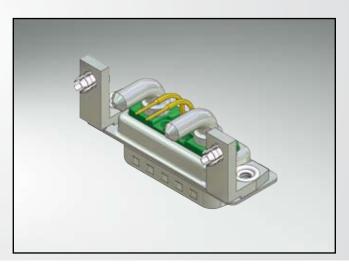


Mounting options shell	Part numbers
with UNC 4-40 thread and hexagonal bolts UNC 4-40*	13-000071
with UNC 4-40 thread w/o bolts	13-000081

<sup>\*</sup>design of hexagonal bolts and additional accessories see page 15

## **POWER INPUT CONNECTOR**

## Single Port - Standard PCB Layout

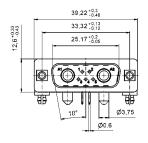


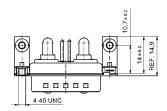
#### PRODUCT FEATURES.

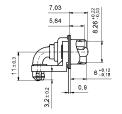
7W2 single port connector from the CONEC combination D-SUB programm with power contacts. Designed for industry typical PCB layout with standard footprint and mounting brackets. Power contacts rated up to 40 A per pin. Two signal contacts in acc. to MicroTCA specifications assembled.

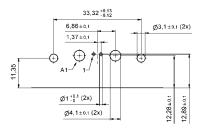
- Combination D-SUB design and PCB layout
- 40 A power contacts
- filtered versions with 54 nF or 10 nF
- 9W4 type for +24 V power modules on request

#### CONNECTOR DIMENSIONS AND PCB-HOLEPATTERN









#### ORDERING OPTIONS

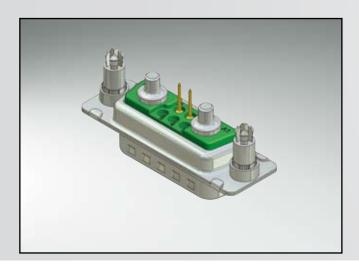
Mounting option shell	Filter options	Part numbers	
with UNC 4-40 thread and hexagonal bolts UNC 4-40*	-	13-000091	
with UNC 4-40 thread w/o bolts	-	13-000101	
with UNC 4-40 thread and hexagonal bolts UNC 4-40*	54 nF filter	24-000101	
with UNC 4-40 thread w/o bolts	54 nF filter	24-000111	
with UNC 4-40 thread and hexagonal bolts UNC 4-40*	10 nF filter	24-000121	
with UNC 4-40 thread w/o bolts	10 nF filter	24-000131	

<sup>\*</sup>design of hexagonal bolts and additional accessories see page 15

Detailed data sheeds for the mentioned part numbers are available under www.conec.com

## **POWER INPUT CONNECTOR**

## Single Port – Straight Version



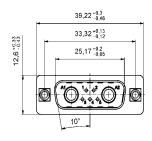
#### PRODUCT FEATURES.

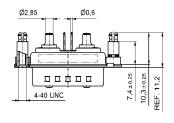
Straight contacts with threaded spacer clips for vertical assembly on the PCB.

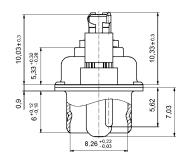
24 A rated power contacts. Signal contacts assembled on position 1 and 2 in acc. to MicroTCA specifications.

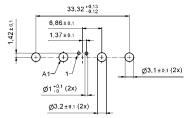
- Straight contacts
- 24 A power contacts
- filtered versions with 54 nF or 10 nF
- 9W4 type for +24 V power modules on request

#### CONNECTOR DIMENSIONS AND PCB-HOLEPATTERN





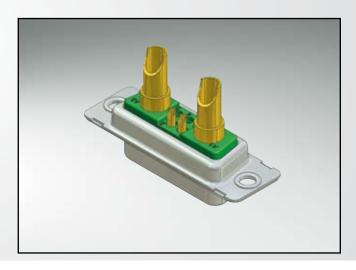




Mounting options shell	Filter options	Part numbers	
with UNC 4-40 thread and hexagonal bolts UNC 4-40*	-	13-000111	
with UNC 4-40 thread w/o bolts	-	13-000121	
with UNC 4-40 thread and hexagonal bolts UNC 4-40*	54 nF filter	24-000141	
with UNC 4-40 thread w/o bolts	54 nF filter	24-000151	
with UNC 4-40 thread and hexagonal bolts UNC 4-40*	10 nF filter	24-000161	
with UNC 4-40 thread w/o bolts	10 nF filter	24-000171	

 $<sup>\</sup>star$ design of hexagonal bolts and additional accessories see page 15

## Solder Cup Version



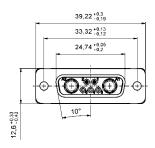
#### PRODUCT FEATURES\_

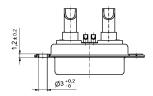
Applicable D-SUB socket for the cable side of MicroTCAs power supply as solder cup version.

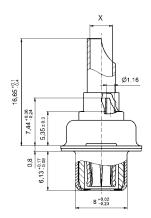
Power contacts available in three sizes for different cable diameters and current ratings. Signal contacts only on position 1 and 2 in acc. to MicroTCA specifications.

- power contacts for cable size AWG 10 to AWG 20
- two signal contacts in pos. 1 and 2
- 9W4 for +24 V power modules on request

#### **CONNECTOR DIMENSIONS**

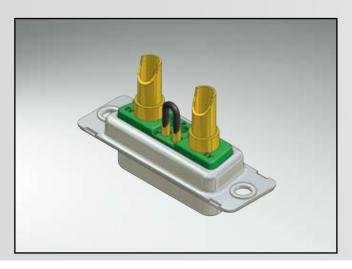






Applicable cable size	ØX (mm)	Part numbers	
AWG 10-12 for up to 30 A current rating	3,5	13-000131	
AWG 12-14 for up to 20 A current rating	2,7	13-000141	
AWG 16-20 for up to 10 A current rating	1,8	13-000151	

## Solder Cup Version – Bridged



#### PRODUCT FEATURES.

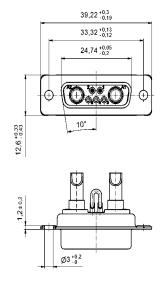
Applicable D-SUB socket for the cable side of MicroTCAs power supply as solder cup version.

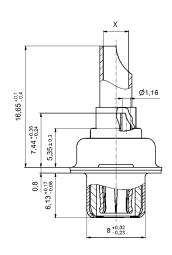
Power contacts available in three sizes for different cable diameters and current ratings.

Signal contacts in position 1 and 2 bridged as recommended in MicroTCA specifications.

- power contacts for cable size AWG 10 to AWG 20
- two signal contacts assembled and bridged
- 9W4 types for +24 V power modules on request

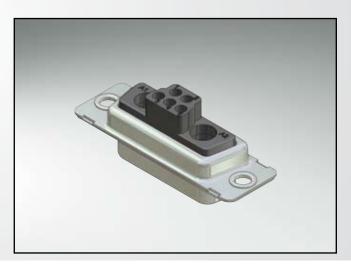
#### **CONNECTOR DIMENSIONS**





Applicable cable size	ØX (mm)	Part numbers	
AWG 10-12 for up to 30 A current rating	3,5	13-000161	
AWG 12-14 for up to 20 A current rating	2,7	13-000171	
AWG 16-20 for up to 10 A current rating	1,8	13-000181	

## **Crimp Version**



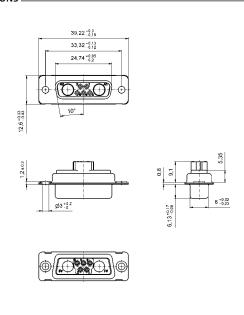
#### PRODUCT FEATURES\_

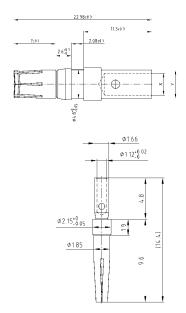
Applicable D-SUB socket for the cable side of MicroTCAs power supply as crimp version.

Power contacts available in three sizes for different cable diameters and current ratings.

- crimp version
- power contacts for cable size AWG 10 to AWG 20
- 9W4 for +24 V power modules on request

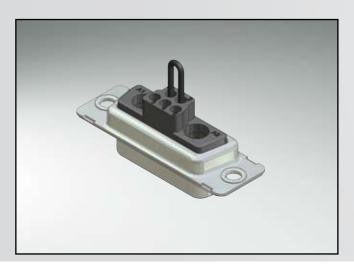
#### **CONNECTOR DIMENSIONS**





Description	X(mm)	Y(mm)	Part numbers	
D-SUB Crimp Housing 7W2	-	-	13-000190	
Power crimp contact AWG 10-12 for up to 30 A current rating	3,7	4,7	132C11039X	
Power crimp contact AWG 12-14 for up to 20 A current rating	2,6	3,6	132C11029X	
Power crimp contact AWG 16-20 for up to 10 A current rating	1,7	2,6	132C11019X	
Signal crimp contact AWG 20-24 for up to 7,5 A current rating	_	_	162C18709X	

## Crimp Version - Bridged

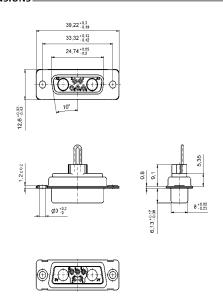


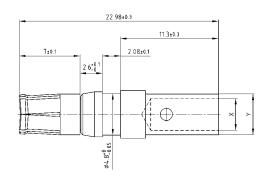
#### PRODUCT FEATURES\_

Applicable D-SUB socket for the cable side of MicroTCAs power supply as crimp version. Power contacts available in three sizes for different cable diameters and current ratings. Signal contacts in position 1 and 2 bridged as recommended in MicroTCA specifications.

- crimp version
- Power contacts for cable size AWG 10 to AWG 20
- two signal contacts assembled and bridged
- 9W4 types for +24 V power modules on request

#### **CONNECTOR DIMENSIONS**





Description	X(mm)	Y(mm)	Part numbers	
D-SUB Crimp Housing 7W2, bridged signal contacts	_	-	13-000201	
Power crimp contact AWG 10-12 for up to 30 A current rating	3,7	4,7	132C11039X	
Power crimp contact AWG 12-14 for up to 20 A current rating	2,6	3,6	132C11029X	
Power crimp contact AWG 16-20 for up to 10 A current rating	1,7	2,6	132C11019X	

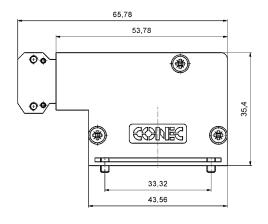
## HOOD FOR MICROTCA SOCKET CONNECTORS

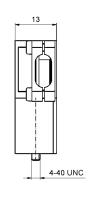


#### PRODUCT FEATURES\_

Special hood for 7W2 MicroTCA connectors. The flat design of the hood allows a parallel use of both ports of the dual port standard connector.

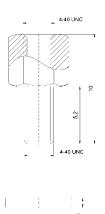
- flat type version
- side cable exit
- screw mounting on the power module
- strain relief





#### ORDERING OPTIONS \_

Description	Part number
MicroTCA hood 7W2	16-000010



- Set of two bolts UNC 4-40 and two washers

Description	Part number	
Set hexagonal bolts	16-000020	





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#### THE COMPANY

CONEC Elektronische Bauelemente GmbH was founded 1978 in Lippstadt, Germany. Currently more than 400 employees work at the company production sites. Precision connectors for high-end applications are produced at production plants in Lippstadt (Germany), Brampton (Canada), Garner (USA) and Loucka (Czech Republic).

#### THE COMPETENCE

CONEC is an ISO/TS 16949:2002 certified company and is a qualified vendor to many well-known telecommunications, automotive, avionics and industrial electronics manufacturers. The company maintains a very high degree of vertical integration to ensure that it can react quickly to customer expectations and changes in the market. In-house tool making capability gives CONEC ample flexibility to quickly build or modify tools to accommodate customer-specific solutions.

#### THE QUALITY

The company is one of the world market leaders in filter connectors, combination D-SUB connectors and water resistant connectors.

#### THE FLEXIBILITY

The company also produces standard D-SUB, DIN / EN, coax, fiber optics and RJ 45 connectors as well as PICMG-compliant connectors and M12 and M8 circular connectors. Besides the broad product range, customers also value the company's ability to provide customer-specific solutions.

www.conec.com



Компания «Океан Электроники» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

#### Наши преимущества:

- Поставка оригинальных импортных электронных компонентов напрямую с производств Америки, Европы и Азии, а так же с крупнейших складов мира;
- Широкая линейка поставок активных и пассивных импортных электронных компонентов (более 30 млн. наименований);
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Помощь Конструкторского Отдела и консультации квалифицированных инженеров;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Поставка электронных компонентов под контролем ВП;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- При необходимости вся продукция военного и аэрокосмического назначения проходит испытания и сертификацию в лаборатории (по согласованию с заказчиком);
- Поставка специализированных компонентов военного и аэрокосмического уровня качества (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Actel, Aeroflex, Peregrine, VPT, Syfer, Eurofarad, Texas Instruments, MS Kennedy, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Компания «Океан Электроники» является официальным дистрибьютором и эксклюзивным представителем в России одного из крупнейших производителей разъемов военного и аэрокосмического назначения «JONHON», а так же официальным дистрибьютором и эксклюзивным представителем в России производителя высокотехнологичных и надежных решений для передачи СВЧ сигналов «FORSTAR».



**«JONHON»** (основан в 1970 г.)

Разъемы специального, военного и аэрокосмического назначения:

(Применяются в военной, авиационной, аэрокосмической, морской, железнодорожной, горно- и нефтедобывающей отраслях промышленности)

«**FORSTAR**» (основан в 1998 г.)

ВЧ соединители, коаксиальные кабели, кабельные сборки и микроволновые компоненты:

(Применяются в телекоммуникациях гражданского и специального назначения, в средствах связи, РЛС, а так же военной, авиационной и аэрокосмической отраслях промышленности).



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