



Reliable
communication
No interference

Tetra Combiner

for mobile communication command, first responders,
police- & fire brigade stations and control rooms.
Also suitable for DMR(UHF) applications

Mission Critical communication

without interference

MOBILE
COMMAND
CENTER

100% reliability

in parallel operation of multiple radio devices

To ensure the highest possible isolation between up to eight TETRA radios, Procom has developed five new combiners. This is the best technology to ensure reliability in environment with parallel operation of multiple radio devices.

The two-, three-, four-, six- and eight-channel TETRA-combiners give a trouble-free connection

of up to eight TETRA radios into a single TETRA-running antenna! The unique isolation of more than 62 dB between the radios is higher than what the ETSI-standard is demanding. Impossible to achieve this value with the plurality of individual antennas mounted on a vehicle roof. A balance between losses in TX- and RX-branch gives a secure two-way connection.





Mission Critical communication

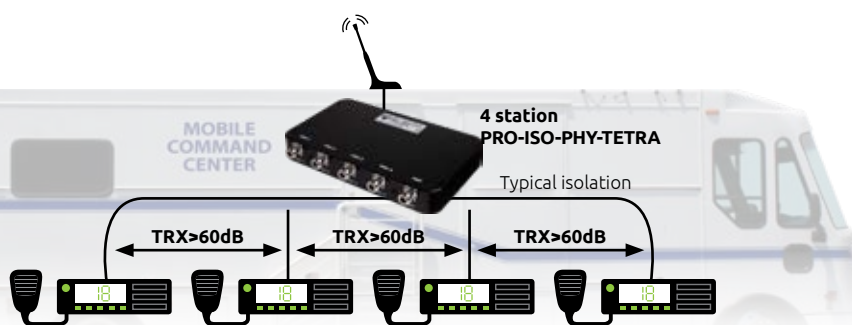
has to be reliable



The TETRA combiner

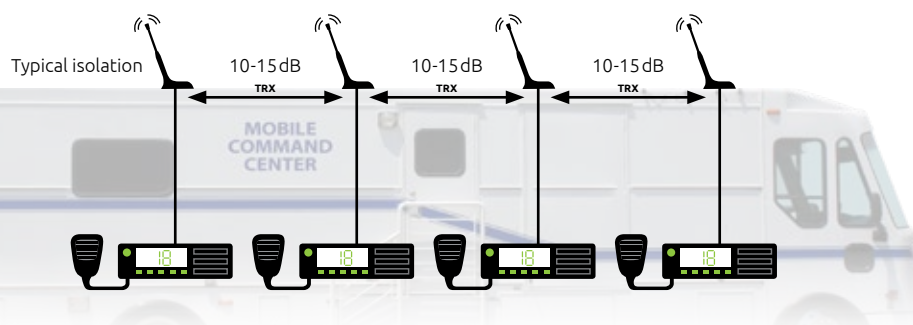
gives maximum isolation in parallel operation of multiple devices

Communication **WITH** the mobile **TETRA combiner - RECOMMENDED**



We recommend this communication solution because the maximum isolation **with** the mobile TETRA combiner PRO-ISO-PHY-TETRA-S **exceeds 62 dB** (TRX ↔ TRX)

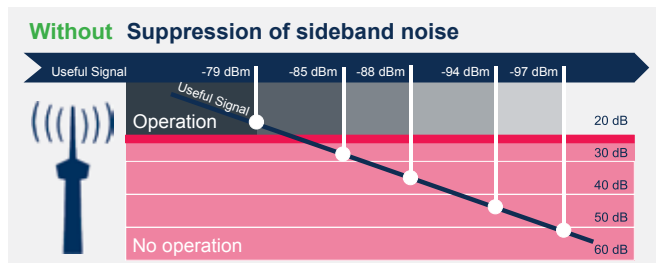
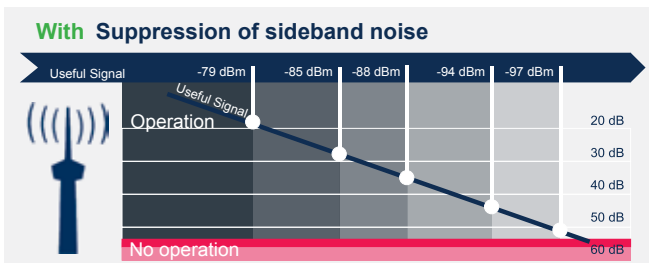
Communication **WITHOUT** the mobile **TETRA combiner - NOT RECOMMENDED**



This communication solution is NOT recommended because the maximum isolation **without** one of Procom's mobile TX combiners PRO-ISO-PHY-TETRA-S is: 10-15 dB



Sideband noise **with and without** suppression - **THE DIFFERENCE**



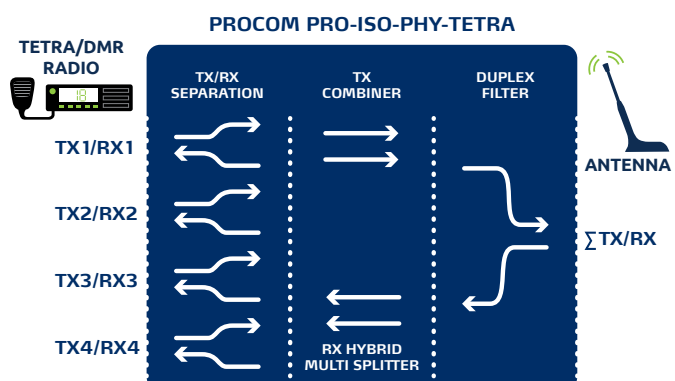
Many TETRA transmitters generate broadband TX sideband noise. The sideband noise is generated in the power amplifier. The sideband noise from one radio transmitter seriously degrades the sensitivity of a nearby positioned radio receiver. Depend-

ing on the strength of sideband noise the receiver desensitization can cause the receiver to become practically inoperable. The **PRO-ISO-PHY-TETRA-S** combiner provides more than 62 dB isolation between the radios and en-

suring minimal degradation of the receivers' sensitivity. With the use of the combiner the **suppression of the sideband noise will increase from 25 to 62 dB.**

PRO-ISO-PHY-TETRA - how it works

- The TETRA Combiner utilizes circulators to separate the (TX) signal and the (RX) signal in two and sends the TX signal to an isolator.
- The TX-signal is fed through a low-pass filter into a hybrid. The hybrid combines the TX carriers to a helical duplex filter.
- The RX-signals run from the antenna through the duplex filter to the hybrid RX-splitter and are sent via the RX isolators to the RX/TX circulator



Combiners for up to eight Mobile TETRA Radios

Supports TMO & DMO



Amphenol Procom TETRA combiners

To ensure the highest possible isolation between several TETRA- radios, Amphenol Procom has developed three mobile combiners

Tetra combiners effectively prevent interference and noise in the transceiver units, ensuring reliable communication using multiple radios.

- The five products have more than 62 dB isolation between the ports.
- The smallest and most compact design on the market.
- Suitable for both stationary and mobile use.
- Also available in tray for 19" rack mounting.
- Superior to the ETSI standards.



Useful for:

- First Responders
- Police & Fire Brigade
- Control rooms
- Mobile command controls
- Also suitable for DMR (UHF) applications

PRO-ISO-PHY-TETRA-S2

- Two-channel TETRA-station combiner
- The PRO-ISO-PHY-TETRA-2 combiner provides the possibility of connecting up to two TETRA radios into one common antenna
- The PRO-ISO-PHY-TETRA-S2 models are available in the frequency range 380 - 470 MHz
- ETSI compliant connection of two digital radios
- The smallest and most compact design on the market
- Also available in tray for 19" rack mounting



PRO-ISO-PHY-TETRA-S3

- Three-channel TETRA-Station Combiner
- The PRO-ISO-PHY-TETRA-S3 combiner provides the possibility of connecting up to three TETRA radios into one common antenna
- ETSI compliant connection of three digital radios
- The PRO-ISO-PHY-TETRA-S3 has improved isolation between the ports - more than 62 dB - and lower insertion loss
- The use of high-quality system components such as highly selective helical duplex filters and high-performance isolators provides high isolation and secure communication
- The smallest and most compact design on the market
- Suitable for both stationary and mobile use
- Also available in tray for 19" rack mounting



PRO-ISO-PHY-TETRA-S4

- Four-channel TETRA-Station Combiner
- The PRO-ISO-PHY-TETRA-S4 combiner provides the possibility of connecting up to four TETRA radios into one common antenna
- PRO-ISO-PHY-TETRA-S4 consist of high quality components such as highly selective helical duplex filters and high-performance isolators which provides more than 62 dB isolation between the ports
- ETSI compliant connection of four digital radios
- The use of high-quality system components such as highly selective helical duplex filters and high-performance isolators provides high isolation and secure communication
- The smallest and most compact design on the market
- Suitable for both stationary and mobile use
- Also available in tray for 19" rack mounting



PRO-ISO-PHY-TETRA-S6

- Six-channel TETRA station combiner
- The PRO-ISO-PHY-TETRA-S6 combiner provides the possibility of connecting up to six TETRA radios into one common antenna
- PRO-ISO-PHY-TETRA-S6 consist of high quality components such as highly selective helical duplex filters and high-performance isolators which provides more than 62 dB isolation between the ports
- ETSI compliant connection of six digital radios
- The smallest and most compact design on the market
- Suitable for both stationary and mobile use
- Also available in tray for 19" rack mounting



PRO-ISO-PHY-TETRA-S8

- Eight-channel TETRA-station combiner
- The PRO-ISO-PHY-TETRA-S8 combiner provides the possibility of connecting up to eight TETRA radios into one common antenna
- The use of high-quality system components such as highly selective helical duplex filters and high-performance isolators provides high isolation and secure communication
- The PRO-ISO-PHY-TETRA-S8 models are available in the frequency range 380 - 425 MHz
- ETSI compliant connection of eight digital radios
- The smallest and most compact design on the market
- Also available in tray for 19" rack mounting

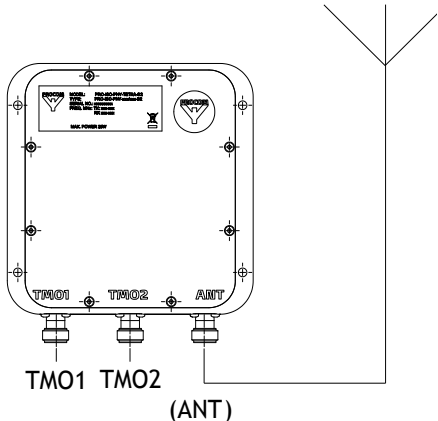
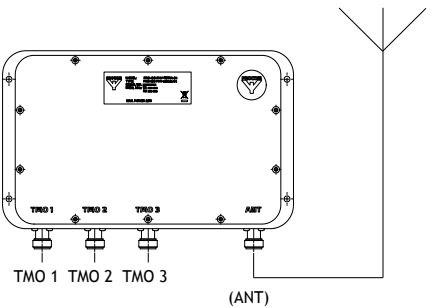
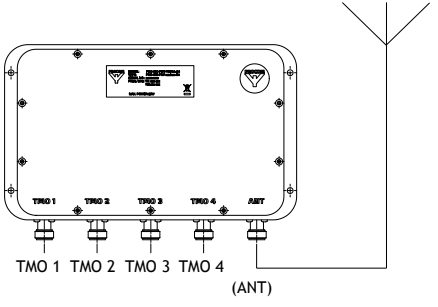


Technical data

Product & Diagram	Radios	Specifications*
<p>PRO-ISO-PHY-TETRA-S6</p> <p>The diagram shows two identical radio units stacked vertically. Each unit has three TRX ports on the left side and one ANT port on the right side. The top unit is labeled RX-A and TX-A, and the bottom unit is labeled RX-B and TX-B. A Yagi antenna is connected to the ANT port of the top unit.</p>	6	<p>ELECTRICAL</p> <p>MODEL PRO-ISO-PHY-TETRA-S6 TYPE TETRA combiner TX/RX FREQUENCY TX: 380 – 385 MHz RX: 390 – 395 MHz or TX: 410 – 415 MHz RX: 420 – 425 MHz Other frequencies available in request</p> <p>INSERTION LOSS TX-ANT. Typ. < 13 dB INSERTION LOSS RX-ANT. Typ. < 13 dB ISOLATION TX-TX: > 62 dB (380-385 MHz & 410-415 MHz) RX - RX: > 62 dB (390 – 395 MHz & 420-425 MHz) TX - RX / RX - TX: > 62 dB</p> <p>SWR..... < 1.5 MAX. POWER..... 25 W/station GROUP DELAY VARIATION TX-ANT. < 120 nsec. RX-ANT. < 150 nsec.</p> <p>MECHANICAL</p> <p>CONNECTOR TYPE..... N-female COLOUR..... Black DIMENSIONS (L x W x H) 150 (excl. conn.) x 250 x 35 mm / 5.91 (excl. conn.) x 9.84 x 1.8 in. WEIGHT 4,8 kg / 10.58 lb.</p> <p>ENVIRONMENTAL</p> <p>IP-RAITING..... IP-62</p>
<p>PRO-ISO-PHY-TETRA-S8</p> <p>The diagram shows two identical radio units stacked vertically. Each unit has four TRX ports on the left side and one ANT port on the right side. The top unit is labeled RX-A and TX-A, and the bottom unit is labeled RX-B and TX-B. A Yagi antenna is connected to the ANT port of the top unit.</p>	8	<p>ELECTRICAL</p> <p>MODEL PRO-ISO-PHY-TETRA-S8 TYPE TETRA combiner TX/RX FREQUENCY TX: 380 – 385 MHz RX: 390 – 395 MHz or TX: 410 – 415 MHz RX: 420 – 425 MHz</p> <p>INSERTION LOSS TX-ANT. < 13 dB INSERTION LOSS RX-ANT. < 13 dB ISOLATION TX-TX: > 62 dB (380-385 MHz & 410-415 MHz) RX - RX: > 62 dB (390 – 395 MHz & 420-425 MHz) TX - RX / RX - TX: > 62 dB</p> <p>SWR..... < 1.5 MAX. POWER..... 25 W/station GROUP DELAY VARIATION TX-ANT. < 120 nsec. RX-ANT. < 150 nsec.</p> <p>MECHANICAL</p> <p>CONNECTOR TYPE..... N-female COLOUR..... Black DIMENSIONS (L x W x H) 483 (excl. conn.) x 176 x 240 mm 7.02 (excl. conn.) x 6.93 x 9.45 in. WEIGHT 4.8 kg / 10.58 lb.</p> <p>ENVIRONMENTAL</p> <p>IP-RAITING..... IP-62</p>

*Tested in accordance with:
 Random test: EN 60068-2-64, test specification: EN 300 019-2-5 V3.0.0.
 Shock test: EN 60068-2-27, test specification: EN 300 019-2-5 V3.0.0.
 Bump test: EN 60068-2-29, test specification: EN 300 019-2-5 V3.0.0.

Technical data

Product & Diagram	Radios	Specifications*
<p>PRO-ISO-PHY-TETRA-S2</p>  <p>TMO1 TMO2 (ANT)</p>	2	<p>ELECTRICAL MODEL..... PRO-ISO-PHY-TETRA-S2 TYPE..... TETRA combiner TX/RX FREQUENCY..... TX: 380 – 385 MHz RX: 390 – 395 MHz or TX: 410 – 415 MHz RX: 420 – 425 MHz</p> <p>INSERTION LOSS TX-ANT.< 6.0 dB INSERTION LOSS RX-ANT.< 6.0 dB ISOLATION..... TX-TX: > 62 dB (380-385 MHz & 410-415 MHz) RX - RX: > 62 dB (390 – 395 MHz & 420-425 MHz) TX - RX / RX - TX: > 62 dB</p> <p>SWR.....< 1.5 MAX. POWER..... 25 W/station GROUP DELAY VARIATION..... TX-ANT. < 120 nsec. RX-ANT. < 150 nsec.</p> <p>MECHANICAL CONNECTOR TYPE..... N-female COLOUR..... Black DIMENSIONS (L x W x H)..... 150 (excl. conn.) x 150 x 35 mm / 5.91 (excl. conn.) x 5.91 x 1.38 in. WEIGHT..... Approx. 1820 g / 4.01 lb.</p> <p>ENVIRONMENTAL IP-RAITING..... IP-62</p>
<p>PRO-ISO-PHY-TETRA-S3</p>  <p>TMO 1 TMO 2 TMO 3 (ANT)</p>	3	<p>ELECTRICAL MODEL..... PRO-ISO-PHY-TETRA-S3 TYPE..... TETRA combiner TX/RX FREQUENCY..... TX: 380 – 385 MHz RX: 390 – 395 MHz or TX: 410 – 415 MHz RX: 420 – 425 MHz</p> <p>INSERTION LOSS TX-ANT.< 9.0 dB INSERTION LOSS RX-ANT.< 9.0 dB ISOLATION..... TX-TX: > 62 dB (380-385 MHz & 410-415 MHz) RX - RX: > 62 dB (390 – 395 MHz & 420-425 MHz) TX - RX / RX - TX: > 62 dB</p> <p>SWR.....< 1.5 MAX. POWER..... 25 W/station GROUP DELAY VARIATION..... TX-ANT. < 120 nsec. RX-ANT. < 150 nsec.</p> <p>MECHANICAL CONNECTOR TYPE..... N-female COLOUR..... Black DIMENSIONS (L x W x H)..... 150 (excl. conn.) x 250 x 35 mm / 5.91 (excl. conn.) x 9.84 x 1.38 in. WEIGHT..... Approx. 2400 g / 5.29 lb.</p> <p>ENVIRONMENTAL IP-RAITING..... IP-62</p>
<p>PRO-ISO-PHY-TETRA-S4</p>  <p>TMO 1 TMO 2 TMO 3 TMO 4 (ANT)</p>	4	<p>ELECTRICAL MODEL..... PRO-ISO-PHY-TETRA-S4 TYPE..... TETRA combiner TX/RX FREQUENCY..... TX: 380 – 385 MHz RX: 390 – 395 MHz or TX: 410 – 415 MHz RX: 420 – 425 MHz Other frequencies available in request</p> <p>INSERTION LOSS TX-ANT.< 9.0 dB INSERTION LOSS RX-ANT.< 9.0 dB ISOLATION..... TX-TX: > 62 dB (380-385 MHz & 410-415 MHz) RX - RX: > 62 dB (390 – 395 MHz & 420-425 MHz) TX - RX / RX - TX: > 62 dB</p> <p>SWR.....< 1.5 MAX. POWER..... 25 W/station GROUP DELAY VARIATION..... TX-ANT. < 120 nsec. RX-ANT. < 150 nsec.</p> <p>MECHANICAL CONNECTOR TYPE..... N-female COLOUR..... Black DIMENSIONS (L x W x H)..... 150 (excl. conn.) x 250 x 35 mm / 5.91 (excl. conn.) x 9.84 x 1.8 in. WEIGHT..... Approx. 2400 g / 5.29 lb.</p> <p>ENVIRONMENTAL IP-RAITING..... IP-62</p>

*Tested in accordance with:
 Random test: EN 60068-2-64, test specification: EN 300 019-2-5 V3.0.0.
 Shock test: EN 60068-2-27, test specification: EN 300 019-2-5 V3.0.0.
 Bump test: EN 60068-2-29, test specification: EN 300 019-2-5 V3.0.0.

About Amphenol Procom

At Amphenol Procom, we are committed to providing solutions that can be trusted no matter how extreme the environment, or how complex the complete networks solution might be. Our mission is simply to: *“deliver the world’s most trusted and flexible solutions for professional wireless communication where connectivity and dependability are critical”*

Your network relies on the quality of its components; if one goes down, it can take the rest with it. That’s why our products are built for quality and tested to the extreme - so that performance is not compromised under any circumstances. Amphenol Procom consists of the former Procom, Jaybeam and Skymast brands, that with manufacturing in Denmark and the UK serve a wide range of market segments such as Public Safety, Aviation, Telecom, Hazardous Environments, IOT, Transportation and Industry.

We have more than 7.000 products in our portfolio, mainly covering base station antennas, portable & mobile antennas, combiners, filters and DAS solutions.

Amphenol Procom is a division of the Amphenol Corporation, a \$7 billion-dollar organization that is one of the largest manufacturers of interconnect products in the world. The company designs, manufactures and markets electrical, electronic and fiber optic connectors, coaxial and flat-ribbon cable, and interconnect systems.



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