

A photograph of a control room. Three large monitors are mounted on a white wall. The left and right monitors display a blue screen with a white 'B' in the top left corner and a central graphic. The middle monitor is turned off. Below the monitors is a white desk with two black office chairs. On the desk, there are various electronic devices, including a central processing unit and several power outlets. The room is lit by fluorescent lights on the ceiling.

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

Amphenol
Turkey&MiddleEast

Mission Critical communication

without interference



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

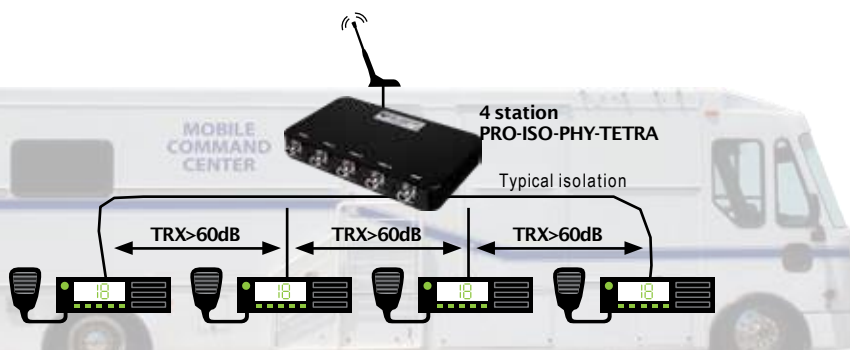
has to be reliable



The TETRA combiner

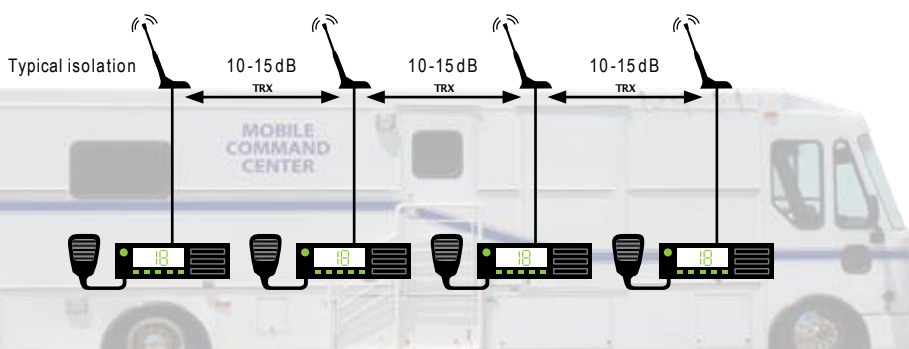
gives maximum isolation in parallel operation of multiple devices

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 \leftrightarrow TRX)

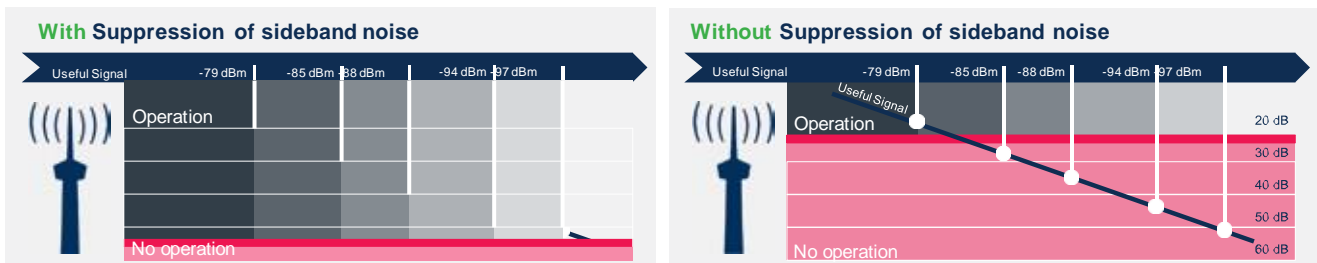
Communication **WITHOUT** the mobile **TETRA combiner** - **NOT RECOMMENDED**



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**



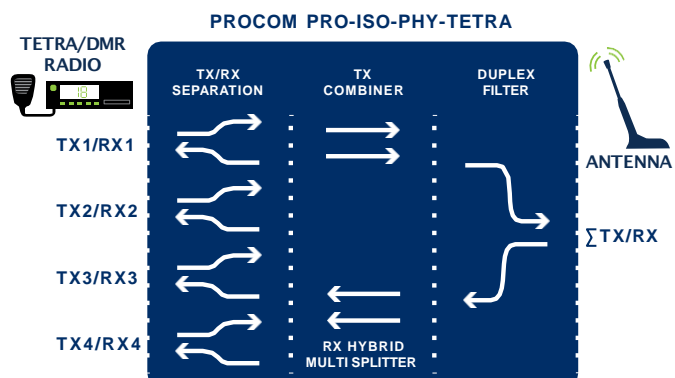
Many TETRA transmitters generate broadband TX sideband noise. The sideband noise is generated in the power amplifier. The sideband noise from one radio transmitter seriously degrade the sensitivity of a nearby positioned radio receiver. Depend-

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.

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

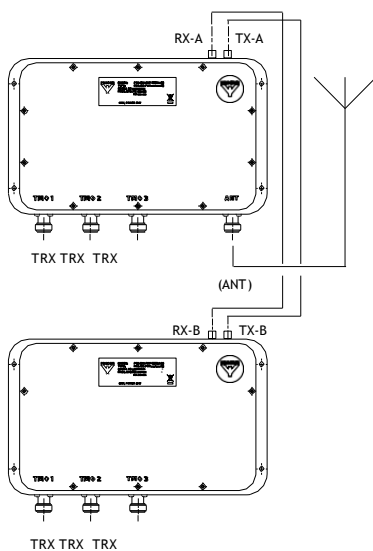
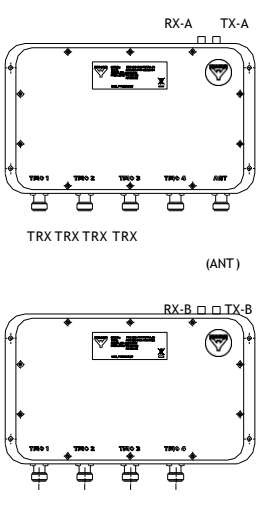


PRO-ISO-PHY-TETRA-S8

- 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>TRX TRX TRX</p> <p>(ANT)</p> <p>TRX TRX TRX TRX</p>	<p>6</p>	<p>ELECTRICAL</p> <p>MODEL..... PRO-ISO-PHY-TETRA-S6</p> <p>TYPE..... TETRAcombiner</p> <p>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>INSERTIONLOSS</p> <p>TX-ANT..... Typ. < 13 dB</p> <p>INSERTIONLOSS</p> <p>RX-ANT..... Typ. < 13 dB</p> <p>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</p> <p>MAX. POWER..... 25 W/station</p> <p>GROUP DELAY VARIATION..... TX-ANT. < 120 nsec. RX-ANT. < 150 nsec.</p> <p>MECHANICAL</p> <p>CONNECTOR TYPE..... N-female</p> <p>COLOUR..... Black</p> <p>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.</p> <p>WEIGHT..... 4,8 kg / 10.58 lb.</p> <p>ENVIRONMENTAL</p> <p>IP-RATING..... IP-62</p>
<p>PRO-ISO-PHY-TETRA-S8</p>  <p>TRX TRX TRX TRX</p> <p>(ANT)</p> <p>TRX TRX TRX TRX</p>	<p>8</p>	<p>ELECTRICAL</p> <p>MODEL..... PRO-ISO-PHY-TETRA-S8</p> <p>TYPE..... TETRAcombiner</p> <p>TX/RX FREQUENCY..... TX: 380 – 385 MHz RX: 390 – 395 MHz or TX: 410 – 415 MHz RX: 420 – 425 MHz</p> <p>INSERTIONLOSS</p> <p>TX-ANT..... < 13 dB</p> <p>INSERTIONLOSS</p> <p>RX-ANT..... < 13 dB</p> <p>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</p> <p>MAX. POWER..... 25 W/station</p> <p>GROUP DELAY VARIATION..... TX-ANT. < 120 nsec. RX-ANT. < 150 nsec.</p> <p>MECHANICAL</p> <p>CONNECTOR TYPE..... N-female</p> <p>COLOUR..... Black</p> <p>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.</p> <p>WEIGHT..... 4.8 kg / 10.58 lb.</p> <p>ENVIRONMENTAL</p> <p>IP-RATING..... 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.

