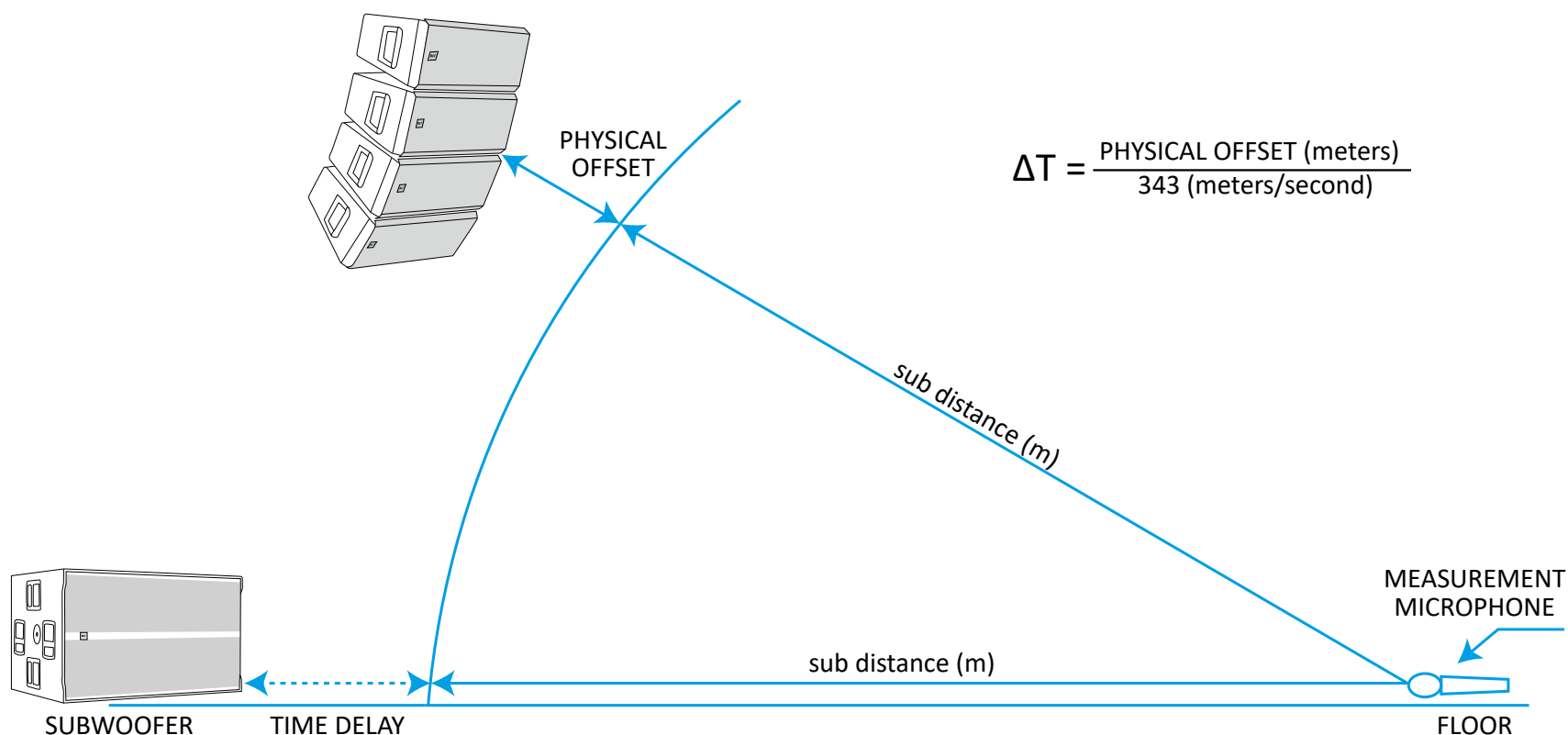


All RCF active speakers feature FIRPHASE processing for a 0° linear-phase response. This means that a perfect phase alignment with other RCF speakers and subwoofers only requires a simple time delay. Time delay is already available onboard RCF HDL and TT+ speakers. Systems without internal delay require an external capable device.

Insert the following pre-alignment values into your RCF speaker's back panel, RDNet manager or external delay device to provide perfect time alignment when paired with RCF subwoofers. For suspended speakers, add (or subtract) delay-values measuring the PHYSICAL OFFSET between the SPEAKER and the SUBWOOFER as in the following scheme:



HDL 20-A

Subwoofer 60Hz

| Loudspeaker type | HDL 20-A | | SUB 9004-AS | | SUB 9006-AS | | SUB 9006-AS | | SUB 9007-AS | | SUB 9007-AS | | TTS 15-A | | TTS 18-A II | | TTS 36-A | | TTS 56-A | |
|-----------------------|------------|-------|----------------|-------|----------------|-------|----------------|-------|----------------|-------|----------------|-------|----------------|-------|----------------|-------|-------------|-------|-------------|-------|
| Pre-set | Full Range | | 30 - 60Hz (L2) | | 20 - 60Hz (S2) | | 30 - 60Hz (L2) | | 20 - 60Hz (S2) | | 30 - 60Hz (L2) | | 30 - 60Hz (L2) | | 30 - 60Hz (L2) | | 30 - 60Hz | | 30 - 60Hz | |
| Polarity | [+] / 0° | | [+] / 0° | | [+] / 0° | | [+] / 0° | | [-] / 180° | | [-] / 180° | | [+] / 0° | | [+] / 0° | | [+] / 0° | | [+] / 0° | |
| Link or X-Over Output | | | Link Output | | Link Output | | Link Output | | Link Output | | Link Output | | Link Output | | Link Output | | Link Output | | Link Output | |
| Pre-alignment delay | 1.0 ms | 0.3 m | 0.0 ms | 0.0 m | | | | | | | | | | | | | | | | |
| | 2.5 ms | 0.9 m | | | 0.0 ms | 0.0 m | | | | | | | | | | | | | | |
| | 1.8 ms | 0.6 m | | | | | 0.0 ms | 0.0 m | | | | | | | | | | | | |
| | 0.0 ms | 0.0 m | | | | | | | 3.0 ms | 1.0 m | | | | | | | | | | |
| | 0.0 ms | 0.0 m | | | | | | | | | 3.0 ms | 1.0 m | | | | | | | | |
| | 4.0 ms | 1.4 m | | | | | | | | | | | 0.0 ms | 0.0 m | | | | | | |
| | 1.5 ms | 0.5 m | | | | | | | | | | | | | 0.0 ms | 0.0 m | | | | |
| | 0.0 ms | 0.0 m | | | | | | | | | | | | | | | 0.0 ms | 0.0 m | | |
| | 1.9 ms | 0.7 m | | | | | | | | | | | | | | | | | 0.0 ms | 0.0 m |

HDL 20-A

Subwoofer 70Hz

| Loudspeaker type | HDL 20-A | | SUB 9004-AS | | SUB 9006-AS | | SUB 9007-AS | | TTS 15-A | | TTS 18-A II | |
|-----------------------|------------|-------|--------------|-------|--------------|-------|--------------|-------|--------------|-------|--------------|-------|
| Pre-set | Full Range | | 30 - 70 (L3) | | 30 - 70 (L3) | | 30 - 70 (L3) | | 30 - 70 (L3) | | 30 - 70 (L3) | |
| Polarity | [+] / 0° | | [+] / 0° | | [+] / 0° | | [-] / 180° | | [+] / 0° | | [+] / 0° | |
| Link or X-Over Output | | | Link Output | | Link Output | | Link Output | | Link Output | | Link Output | |
| Pre-alignment delay | 0.0 ms | 0.0 m | 0.0 ms | 0.0 m | | | | | | | | |
| | 1.0 ms | 0.3 m | | | 0.0 ms | 0.0 m | | | | | | |
| | 0.0 ms | 0.0 m | | | | | 3.2 ms | 1.1 m | | | | |
| | 3.5 ms | 1.2 m | | | | | | | 0.0 ms | 0.0 m | | |
| | 1.0 ms | 0.3 m | | | | | | | | | 0.0 ms | 0.0 m |
| | | | | | | | | | | | 0.0 ms | 0.0 m |

HDL 20-A

Subwoofer 80Hz

| Loudspeaker type | HDL 20-A | | SUB 9004-AS | | SUB 9006-AS | | SUB 9007-AS | | TTS 15-A | | TTS 18-A II | |
|-----------------------|------------|-------|--------------|-------|--------------|-------|--------------|-------|--------------|-------|--------------|-------|
| Pre-set | Full Range | | 30 - 80 (L4) | | 30 - 80 (L4) | | 30 - 80 (L4) | | 30 - 80 (L4) | | 30 - 80 (L4) | |
| Polarity | [+] / 0° | | [+] / 0° | | [+] / 0° | | [+] / 0° | | [+] / 0° | | [+] / 0° | |
| Link or X-Over Output | | | Link Output | | Link Output | | Link Output | | Link Output | | Link Output | |
| Pre-alignment delay | 0.0 ms | 0.0 m | 0.0 ms | 0.0 m | | | | | | | | |
| | 0.0 ms | 0.0 m | | | 0.0 ms | 0.0 m | | | | | | |
| | 0.8 ms | 0.3 m | | | | | 0.0 ms | 0.0 m | | | | |
| | 2.5 ms | 0.9 m | | | | | | | 0.0 ms | 0.0 m | | |
| | 0.5 ms | 0.2 m | | | | | | | | | 0.0 ms | 0.0 m |
| | | | | | | | | | | | 0.0 ms | 0.0 m |

ΔT (ms) = Physical Offset (m) / 0.343 (m/ms)

∅ - polarity reverse [+] = 0° Phase [-] = 180° Phase

To convert milliseconds (ms) values in meters, multiply them by 0.343

HDL 20-A

Subwoofer 90Hz

| Loudspeaker type | HDL 20-A | | SUB 8004-AS | | SUB 8006-AS | | SUB 9004-AS | | SUB 9006-AS | | SUB 9007-AS | | TTS 15-A | | TTS 18-A II | | TTS 36-A | | TTS 56-A | |
|-----------------------|------------|-------|--------------|-------|--------------|-------|--------------|-------|--------------|-------|--------------|-------|--------------|-------|--------------|-------|-------------|-------|-------------|-------|
| Preset | Full Range | | 90Hz | | 90Hz | | 30 - 90 (L5) | | 30 - 90 (L5) | | 30 - 90 (L5) | | 30 - 90 (L5) | | 30 - 90 (L5) | | 30 - 90Hz | | 30 - 90Hz | |
| Polarity | [+] / 0° | | [-] / 180° | | [-] / 180° | | [+] / 0° | | [+] / 0° | | [+] / 0° | | [+] / 0° | | [+] / 0° | | [+] / 0° | | [+] / 0° | |
| Link or X-Over Output | | | Link Output | | Link Output | | Link Output | | Link Output | | Link Output | | Link Output | | Link Output | | Link Output | | Link Output | |
| Pre-alignment delay | 0.0 ms | 0.0 m | 1.7 ms | 0.6 m | | | | | | | | | | | | | | | | |
| | 0.0 ms | 0.0 m | | | 1.7 ms | 0.6 m | | | | | | | | | | | | | | |
| | 0.0 ms | 0.0 m | | | | | 0.3 ms | 0.1 m | | | | | | | | | | | | |
| | 0.0 ms | 0.0 m | | | | | | | 0.0 ms | 0.0 m | | | | | | | | | | |
| | 0.5 ms | 0.2 m | | | | | | | | | 0.0 ms | 0.0 m | | | | | | | | |
| | 2.5 ms | 0.9 m | | | | | | | | | | | 0.0 ms | 0.0 m | | | | | | |
| | 0.0 ms | 0.0 m | | | | | | | | | | | | | 0.0 ms | 0.0 m | | | | |
| | 0.0 ms | 0.0 m | | | | | | | | | | | | | | | 1.0 ms | 0.3 m | | |
| | 3.0 ms | 1.0 m | | | | | | | | | | | | | | | | | 0.0 ms | 0.0 m |

HDL 20-A

Multiple Subwoofer VLF Extension

| Loudspeaker type | HDL 20-A | | SUB 9006-AS | | SUB 9007-AS | | TTS 36-A | | TTS 56-A | |
|-----------------------|------------|-------|--------------|-------|----------------|-------|-------------|-------|--------------|-------|
| Preset | Full Range | | 30 - 70 (L3) | | 20 - 50Hz (S1) | | 45 - 90Hz | | 30 - 60Hz | |
| Polarity | [+] / 0° | | [+] / 0° | | [-] / 180° | | [+] / 0° | | [-] / 180° | |
| Link or X-Over Output | | | Link Output | | Link Output | | Link Output | | Link Output | |
| Pre-alignment delay | 0.5 ms | 0.2 m | 0.0 ms | 0.0 m | 2.5 ms | 0.9 m | | | | |
| | 0.0 ms | 0.0 m | | | | | 1.4 ms | 0.5 m | 4.3 ms | 1.5 m |

ΔT (ms) = Physical Offset (m) / 0.343 (m/ms)

∅ - polarity reverse [+] = 0° Phase [-] = 180° Phase

To convert milliseconds (ms) values in meters, multiply them by 0.343