



External Devices & Accessories

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LIST OF ABBREVIATIONS

DMR	Digital Mobile Radio
E2EE	End-To-End Encryption
EMC	Enterprise Management and Control
GPS	Global Positioning System
GPRS	General Packet Radio Service
GUI	Graphical User Interface
IP	Internet Protocol
LAN	Local Area Network
LPS	Local Positioning System
LTE	Long Term Evolution - a telephone and mobile broadband communication standard
LWP	Lone Worker Protection
MPT	MPT 1327 - industry standard for trunked radio communications networks
NFC	Near Field Communication
iOS	iPhone OS developed and distributed by Apple Inc.
OS	Operating System
PMR	Professional Mobile Radio
PTT	Push-To-Talk
TCP	Transmission Control Protocol
TETRA	Trans-European Trunked Radio
UDP	User Datagram Protocol
VoIP	Voice over IP
WLAN	Wireless Local Area Network

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1 **TASSTA AT A GLANCE**

TASSTA is an IP-based technology with a sub-second performance which offers fast and reliable communication all over the world. TASSTA is a series of integrated technologies to offer a single solution: to enable a more effective communication through well-known features like Push-to-Talk, Messaging, Data Service and GPS location tracking.

TASSTA includes over 13 years of engineering, experience in design, construction, and maintenance of PMR networks like MPT, TETRA, DMR. TASSTA is designed to meet any potential customer demands since it allows you to create a business environment right away, using its data services. Depending on the customer requirements, it can easily turn the mobile devices into a cost-effective, portable communication terminal, with an unlimited coverage area which includes a GPS tracking function ability and much more.

TASSTA solution is based on mobile clients (Android, iOS), desktop client (Windows OS) and TASSTA server applications with a great number of features and services. Furthermore, all TASSTA components are designed in a modular approach which can be easily integrated with other PMR and communication networks or data services.

The application range of TASSTA is quite varied. It can be used in public security services, logistics, traffic control systems, public transportation services, construction projects, public or special events and others.

2 **INTRODUCTION**

T.Flex is a TASSTA application running on Windows OS (T.Flex Desktop)* and touchscreen mobile devices powered by two of the most popular mobile operating systems – Android and iOS (T.Flex Mobile). It works over LAN, WiFi or/and any mobile network (e.g. 3G, LTE) while allowing users a maximum connectivity at the lowest price. VoIP technology implemented in the T.Flex ensures that users can connect and communicate with each other from every corner of the world. Besides LAN, WiFi and 3G, the T.Flex is designed for communicating under poor conditions and thus is able to keep significant communication quality on Dial-Up, GPRS and/or EDGE (2G) networks.

T.Flex Mobile contains all the basic features like the group and individual calls, messaging and history, map and GPS positioning. The combination with T.Rodon (TASSTA Command and Control Center solution) extends T.Flex with a set of additional tools for organizing and managing your business. These are issue management system (EMC), GPS and Indoor Tracking, Geofencing, Alarming, etc.

T.Flex Mobile has a friendly graphical user interface (GUI) and is flexible in operation. In other words, the T.Flex Mobile GUI is specially designed for compact mobile touch screen devices and grants users maximum flexibility to deal with the application.

T.Flex uses TCP flow for signaling and data transfer while UDP is used for voice data transfer. In a case of any limitation on UDP flow (e.g. limited by the network provider), the T.Flex clients can also work through TCP**.

(*) - T.Flex Desktop application is T.Rodon (Command and Control Center) with its basic functionality.

(**) - T.Flex clients can work through TCP. For that you have to activate "Force TCP for the client" in T.Commander.

3

EXTERNAL WIRELESS DEVICES

Many applications require you to talk while moving. If you are driving the car you need the PTT in your hand. This option provides a great PTT device connected to T.Flex client over Bluetooth or cable. The operation by external PTT devices brings the TASSTA Android Client on the highest professional level of operation and provides great flexibility because it makes communication more comfortable and easier.

T.Flex supports working with different wired external devices, Bluetooth devices, hardware devices, buttons and different accessories:

- CODAWheel
- ECOM devices
- Delking devices
- Savox devices
- AINA devices

and many others.



The mic is active on the smartphone when PTT is pressed. The DelKing PTT does not translate voice from mic. This issue is related to PREFERRED BLUETOOTH DEVICE activation in settings.

3.1

T.FLEX ANDROID
T.FLEX IOS

COVERT NECK-LOOP/MICROPHONE SYSTEM



VENDOR / MODEL

- SAVOX
- CLARITY

KEY BENEFITS

- Interference-free
- Interception-free
- Savox Shield™ interception-free neck loop
- SavoxGuard™ wireless key fob PTT
- Interference-free RCR7
- In-line PTT fall back solution
- Covert microphone
- Savox Triplex™ communication platform (patent pending) providing full-duplex, half-duplex, and non-verbal tone communication capabilities for mobile phones
- Available for two-way radios and mobile phones

TECHNICAL DATA

- Weight: 140 g
- Cable length connector to transition module: radio specific
- Cable length transition module to neckloop Mic/ind: 300 mm
- Cable length Mic/inductor Circumference: 740 mm
- Connector: radio specific
- Colour: Beige only

The Savox Clarity provides advanced security and immunity through a unique three point system consisting of a combination of encryption, field manipulation and modulation scheme. In addition to the interference-free features offered in the industry, the Clarity neck-loop also offers Savox interception-free communication patterns.

The Clarity comes with a wireless PTT in form of a key fob with Savox's unique proprietary and most secured wireless signaling non-verbal tone communication. Used with a mobile phone, (pending) providing full-duplex, half-duplex, and non-verbal tone communication capabilities.

3.2 NECKLOOP MICROPHONE

T.FLEX ANDROID
T.FLEX IOS



The Savox SEP-110 combines a neck-loop, a microphone and a barrel PTT button. The loop transmits incoming communication to a Savox RCR earpiece. Through a wire the SEP-110 can be either connected to a radio or mobile phone. Connected to a radio the SEP-110 offers half-duplex PTT communication. Connected to a mobile phone it offers toggle mode half-duplex communication and full-duplex call answering capabilities.

VENDOR / MODEL

- SAVOX
- SEP-110

KEY BENEFITS

- Concealed communication
- Covert Rx through interference-free neck loop
- Wide selection of Savox RCR earpieces
- Barrel PTT
- Covert microphone
- Available for radios and mobile phones
- Half-duplex and full-duplex capable

TECHNICAL DATA

- Weight: 98 g
- Cable length loop - circumference: 740 mm
- Cable length splitter - loop: 300 mm straight
- Cable length splitter - PTT: 1020 mm straight
- Connector: radio specific
- Colour: beige only
- Loop impedance: 45 Ohms
- Mic impedance: 2.2 K Ohm
- Mic sensitivity: -33 dB ref 1 Volt / Pascal

3.3

COVERT RADIO VEST

T.FLEX ANDROID
T.FLEX IOS



VENDOR / MODEL

- SAVOX
- UCH-100

KEY BENEFITS

- Full covert vest
- Houses radio, accessory wiring and dipole antenna
- Available in sizes medium, large, extra large and double extra large
- Available in black and white

A covert surveillance vest in breathable material that houses radio and covert radio accessory cables. Designed for use by covert surveillance operatives.

3.4 BLUETOOTH HEADSET

T.FLEX ANDROID
T.FLEX IOS



1

1. PTT button

The Savox Promate BTH-101 Bluetooth Headset is designed to operate hands-free within range of compatible Bluetooth radios and mobile phones. It is light, ergonomic, robust (to IP55) and comfortable to wear over long periods of time. It can be worn with goggles and glasses, and the function buttons have been designed so it can be operated with protective gloves.

This PTT Bluetooth Headset is ideal for the professional user who needs a Push-to-Talk over cellular headset on a daily basis in varying professional surroundings – for example in industry, maintenance and transportation.

This headset offers both full duplex communication capability (for normal phone calls), and Push-to-Talk capability.

VENDOR / MODEL

- SAVOX
- BTH 101

KEY BENEFITS

- Robust design to IP55 standard
- Push-to-talk over cellular functionality in a lightweight headset
- Large buttons for use with gloves
- Can be used with goggles and glasses
- Extremely comfortable for wearing over long periods of time
- Can be worn on the right or left ear
- Supports standard full duplex phone calls

TECHNICAL DATA

- Weight: 20 g
- Sizes: 62 x 32 x 16 mm
- Talk time: up to 8 hours
- Standby time: up to 200 hours
- Charge time: up to 2 hours
- Ingress protection IP 55
- Drop test tolerance: to 2.0 M
- Battery: Lithium ion polymer rechargeable
- Charger connector: Micro USB
- Earpiece type: Semi in ear
- Microphone: Dual mic, built-in
- Speaker: Built-In
- Bluetooth version: 3.0, class II
- Supported bluetooth profiles: Handsfree (HFP) 1.5, headset (HSP) 1.2, serial port (SPP) 1.1
- Operating temperature: -20°C ... +60°C
- Storage temperature: -40°C ... +85°C

3.5

T.FLEX ANDROID
T.FLEX IOS

BLUETOOTH REMOTE SPEAKER MICROPHONE



1. Microphone
2. PTT button

3. Volume Up/Down
4. Speaker

The Savox BTR-155 Bluetooth RSM is the perfect accessory for your professional radio, mobile phone or PoC unit, adapting quickly to your needs in varying professional surroundings. The extremely rugged design of this Remote Speaker Microphone provides the ultimate platform for all the different end-users. It is light, robust, (to IP55) and the function buttons have been designed so it can be operated with protective gloves.

The BTR-155 offers both full duplex communication (phone calls), and one-to-many push-to-talk capability. The wide variety of additional accessory headsets broaden the use of the Savox Promate BTR-155 remote speaker microphone.

VENDOR / MODEL

- SAVOX
- BTH 155

KEY BENEFITS

- Superior audio clarity and volume output
- Push-to-talk over Bluetooth
- Superior audio quality, up to 100 dB
- Dust & water resistant (IP55)
- Full duplex call functionality
- Volume control
- Ergonomic & ruggedized
- Large buttons for use with gloves
- Rotating belt clip
- Compatible with all leading PTT applications
- Additional earphones and car mounting clip available
- Up to 30 hours talk time

TECHNICAL DATA

- Weight: 105g
- Size: 88 x 67 x 26 mm
- Talk time: Up to 30 hours
- Standby time: Up to 240 hours
- Charge time: Up to 2 hours
- Ingress protection: IP 55
- Drop test tolerance: To 1.5 M
- Battery: Lithium-ion polymer rechargeable
- Charger connector: Micro
- Attachment method: Clips to clothes via Industry tested metal / plastic clip
- Audio connector: 3.5mm audio jack. Savox specific pin configuration for mic and PTT button
- Microphone sensitivity: -44+/-3dB
- Speaker: Built-In
- Connectivity: Bluetooth 3.0, Class II
- Supported bluetooth profiles: (HFP) 1.5, (HSP) 1.2, (SPP) 1.1
- Operation temperature: -20°C... +60°C
- Storage temperature: -20°C... +60°C

3.6

T.FLEX ANDROID
T.FLEX IOS

PTT SPEAKER/MIC



1. PTT button

2. SOS button

A «Zello Certified» Headset Accessory.

Certified push-to-talk hardware created specifically for Zello that enables you to:

- use a dedicated hardware button for push-to-talk;
- listen clearly in noisy environments through a headset or more powerful speaker;
- keep your phone locked and safe in your pocket while talk and listen or using other apps.

VENDOR / MODEL

- Delking
- H2

KEY BENEFITS

- Push-to-talk mode
- Micro USB compatible charger
- Clothing clip
- External earpiece jack
- Polycarbonate housing
- Sends call alerts to Android users with SOS button

TECHNICAL DATA

- BT3.0 AGHSP, AGHFP profiles supported
- Connect with mobile phone for calls handling and stereo music
- Switch to mono and stereo
- PTT button support
- Connect with various radio Bluetooth adapter
- Support 3.5 mm headset connector
- Dsp noise suppression, crystal voice quality
- Compatibility with various phone
- Working time: 8 hs
- Standby time: 100 hs
- Long life lithium battery (750 ma/ 3.7 v)
- Bluetooth Chip: CSR BC5 MM
- Bluetooth RF Spec: Class 2
- RF Power: 4dB
- Operation Range: 10 Meters
- RF Frequency: 2.4~2.4835GHz
- Average Standby Current:2mA

3.7

T.FLEX ANDROID
T.FLEX IOS

WIRELESS MULTIFUNCTION BUTTON



VENDOR / MODEL

- bCODA
- CODAWheel

KEY BENEFITS

- Push-to-talk mode
- Works with any headset
- Replaceable battery lasts one to two years
- Hard button to carry in pockets
- Includes double sided tape and velcro fastener
- Coda app allows control for pictures, media, and Siri
- Bluetooth LE only

TECHNICAL DATA

- Bluetooth 4.0
- Dimensions: 35.85(W) x 35.85 (H) x 8.15 (D) mm
- Weight: 9.0 g
- Range: up to 50 meters(depends on phone)

The CODAWheel is a one-buttoned, smart remote which is designed to help you control your smartphone without touching it while driving. Now, you can drive safely with your eyes set on the road while managing all of your tasks at the click of a finger.

CODAWheel - is a wireless multi-function button, which can be mounted inside the vehicle, allowing the use of smartphone functions without being distracted from the road.

In the case of T.FLEX, it allows the wheel to perform an emergency call.

For correct operation of CODAWheel, you need to install the app to pair CODAWheel with your smartphone and select CODAWheel in T.Flex settings as the desired device.



Install the app to pair CODAWheel with your smartphone and select CODAWheel in T.FLEX settings as the desired device.

3.8

T.FLEX ANDROID
T.FLEX IOS

WIRELESS MULTIFUNCTION BUTTON



VENDOR / MODEL

- bCODA
- CODAClick

TECHNICAL DATA

- Requires: iOS 7 with Siri, Android 4.3 (latest Jelly Bean) or later
- Bluetooth 4.0
- Dimensions: 35.9 (W) x 39.25 (H) x 8.9 (D) mm
- Weight: 9.0 g
- Range: up to 50 meters(depends on phone)

CODAClick is a wireless multi-function button, which can be attached to clothing or mounted inside the vehicle, allowing the use of smartphone functions without being distracted from your business.

In the case of T.Flex, it allows the wheel to perform emergency calls.



Install the app to pair CODAClick with your smartphone and select CODAClick in T.FLEX settings as the desired device.

3.9

T.FLEX ANDROID
T.FLEX IOS

WIRELESS SPEAKER MICROPHONE



1. PTT button

2. Volume Up/Down

VENDOR / MODEL

- Rexon
- BT-28HC

KEY BENEFITS

- Supports T.FLEX mobile app
- Durable and water-resistant (IP56)
- Dual PTT
- Micro USB charging
- Wireless handsfree for smart phones
- 360 degrees switchable belt clip
- Volume up/down

TECHNICAL DATA

- Dimensions: 87 x 55 x 28 mm
- Weight: 110 g
- Battery: 540 mhz
- Charge connector: Micro USB
- Earphone jack: Motorola M12 compatible
- Microphone: Built-in
- Speaker: Built-in
- Bluetooth version: 3.0, Class II
- Supported bluetooth profiles: Handsfree (HFP) 1.5, Headset (HSP) 1.1, Serial port (SPP) 1.1

Rexon BT-28HC wireless speaker microphone is able to connected with Android cell phone via Bluetooth.



3.10 PTT VOICE RESPONDER

T.FLEX ANDROID
T.FLEX IOS



1. Emergency button
2. PTT button

3. Keep Alive Button
4. Channels changing

The AINA PTT Voice Responder is a wireless communication device that utilizes Bluetooth technology. The PTT Voice Responder incorporates a speaker, a microphone with push-to-talk, an emergency button and auxiliary buttons. In addition, support for an audio headset is provided by a 4 pin audio jack (iPhone compatible), which, when in use, mutes the device's speaker. The internal battery is charged using an industry standard micro-USB connector. The rear of the PTT Voice Responder includes a clip for attachment to a lapel or belt.

The PTT Voice Responder also supports Covert mode. When this is activated, LED indications are suppressed and audio annunciations are selectively muted.

The PTT Voice Responder supports Android, iOS and Windows devices running a push-to-talk (PTT) application. Depending on the chosen PTT application, buttons may have different functionalities assigned to them by the PTT app developer.

VENDOR / MODEL

- AINA
- AINA PTT Voice Responder

KEY BENEFITS

- can be paired automatically by NFC scan
- Push-to-talk mode
- Micro USB compatible charger
- A2DP technology and wide band audio for high quality music
- Covert mode option (all LEDs and speaker muted)
- 3.5 mm standard audio headset jack
- Sound Pressure Level: 105 dB@10cm
- Wind noise Reduction
- Noise cancellation
- Bluetooth range 250 m line of sight range
- Unique friendly name on back cover for simple pairing

TECHNICAL DATA

- Ingress Protection 65 (dust proof and water resistant)
- 100+ dB
- Battery life: 24 hours
- 3.5mm standard audio headset jack
- Micro-USB connection (for charging)
- Real-time PTT: short latency
- IP 65: dust tight and water resistant
- Rugged: 2m drop test
- Lightweight: 125 g
- Passed environmental mil std 810g tests: Test Method 500.5 Low Pressure (Altitude), Test Method 501.5 High Temperature, Test Method 502.5 Low Temperature, Test Method 503.5 Temperature Shock, Test Method 504.1 Contamination by Fluids, Test Method 507.5 Humidity, Test Method 509.5 Salt Fog, Test Method 514.6 Vibration, Test Method 516.6 Shock
- Regulatory test passed: CE, FCC & IC

3.11 PTT SMART BUTTON

T.FLEX ANDROID
T.FLEX IOS



1. Emergency button
2. PTT button

3. PTT button
4. NFC tag Location

VENDOR / MODEL

- AINA
- AINA PTT Smart Button

KEY BENEFITS

- Multiple uses and users can be connected to an in-vehicle Bluetooth system or smartphone
- Has been made for professionals in the transportation, hospitality, healthcare, and security industry
- Main push-to-talk button.
- Additional multifunction button
- Emergency button
- Enhanced grip
- Bluetooth Low Energy
- NFC Touch Pairing

TECHNICAL DATA

- Bluetooth low energy
- iOS and Android compatible
- Long lasting battery
- Size - 73 x 38 x 14 mm
- Ingress protection 65
- Attachment

AINA's PTT Smart Button is a Bluetooth key that remotely controls the smartphone's Push-to-Talk and other IoT applications. It features a PTT button, a multifunction button, and an emergency button. It also supports Near Field Communication (NFC) touch pairing.

Simply, pair the PTT Smart Button, open the T.Flex app, and connect your headphones to the phone to start communicating.

4 USB DEVICES

4.1 USB DESKTOP MICROPHONE

T.RODON WINDOWS
T.FLEX WINDOWS



The TM3 is a table microphone with a high class premium loudspeaker included and is equipped with a USB connector for best usability and nearly all applications.

The flexible goose neck allows a easy adjustment to the need of every person at the desks of i.e. voice communication systems or control rooms at the air traffic control and others. The high structural stability brings a perfect ease of use in every situation. The push-to-talk button can easily be adapted to any system without the need to do big changes.

VENDOR / MODEL

- Imtradex
- TM3

KEY BENEFITS

- USB table microphone integrated high-performing speaker
- high stability
- flexible gooseneck microphone
- thanks to the Plug & Play function it doesn't require any special driver installation
- ability to connect an external speaker and an external PTT
- can be used with both Windows and Linux-based systems
- unique serial number for device identification
- high performance 24 bit audio resolution
- HID-Interface for Push-to-Talk processing
- no external sound card or driver needed

TECHNICAL DATA

- Frequency range: 60 Hz – 12 kHz
- Impedance: 8 Ohm (at 1W, 1 kHz)
- Sound pressure level: 84 dB (@ 1W/ 1m)
- Impedance: 1100 Ohm
- Sensivity: -44 dB V / Pa, 1 kHz
- Frequency range: 100 Hz - 8 kHz
- Pattern: electret
- Directional: non-directional
- Length USB-connecting cable: 3m (not to be extended)
- Power supply: over the USB-connection
- Bitrate / Samplingrate: 24 bit / 16 kHz
- Life cycle PTT: min. 500.000 cycles
- Dimensions (LxWxH): Underpart: 170 mm x 115 mm x 60 mm
- Length gooseneck: 32 cm
- Operating system: Windows XP,7,8,1,10, Linux Kernel 2.6, or later
- Processor: from Pentium 4 or similarly
- USB-connection: USB 2.0
- Temperature range: 0°C to +55°C
- 500 g

4.2 HAND HELD MICROPHONE

T.RODON WINDOWS
T.FLEX WINDOWS



1. PTT button

Aurelis USB is a hand held microphone for connection to computer-based communication systems, especially for control centers. The USB option allows a easy to use device. Plug in and use the device right along. There is no need for further driver installation for the PTT button. The PTT button will also be available with HID profile and can be used with voice communication systems.

VENDOR / MODEL

- Imtradex
- Aurelis USB

KEY BENEFITS

- Plug and Play function
- rugged, splash proof housing
- spare button for special functions ex. emergency button
- three-step volume control
- available with car holder clip or option with rotating cloth clip

TECHNICAL DATA

- Sound pressure level: 88 dB at 1 mW / 1 kHz
- Frequency range: 50 Hz – 16 kHz
- Pattern: dynamic
- Impedance: 8 Ohm at 1 mW / 1 kHz
- Impedance: 1200 Ohm
- Sensivity: -38 dB V / Pa, 1 kHz
- Frequency range: 50 Hz – 16 kHz
- Pattern: electret
- Directional: omni-directional
- System requirement: USB 2.0 or later, Microsoft Windows XP, 7 or later, Linux 2.4
- Life cycle PTT: min. 250,000 cycles
- Protection class: IP 54 to IP 67
- Temperature range: -20 °C to +60 °C
- Weight: aprox 180 g (incl. cable)

4.3

USB DESKTOP MICROPHONE

T.RODON WINDOWS
T.FLEX WINDOWS



VENDOR / MODEL

- Plantronics
- SSP 2753-01

TECHNICAL DATA

- Product Type: Microphone
- Type: Telescopic pole
- Connectivity: Technology Wired
- Remote control
- Commands Conversation: Push Button
- Connector: Type USB
- Cables Included: Microphone cable

Desktop Microphone USB - PTT (Push-To-Talk). Provides USB audio and digital PTT signal.

4.4

T.RODON WINDOWS
T.FLEX WINDOWS

USB DESKTOP DYNAMIC MICROPHONE



Desktop microphone with dynamic microphone and USB connection.

VENDOR / MODEL

- Pei Tel
- PS12 USB

KEY BENEFITS

- Dynamic unidirectional high noise canceling gooseneck microphone
- Device recognized as external sound card by the computer
- Buttons and LEDs recognized as HID (Human Interface Device)
- Compatible with Microsoft® Windows® Vista, Windows® 7 and Windows® 8

TECHNICAL DATA

- Microphone head: Brass, sand blasted chrome (matte)
- Gooseneck: Metal, matte silver coated
- Housing: Metal, matte silver coated
- Dimensions:
 1. Microphone head: Length 80 mm, Ø 24 mm
 2. Gooseneck: Length 200 mm, Ø 11 mm
 3. Housing: Height 32 mm, Width 105 mm, Depth 160 mm
- Weight: 770 g (27.1 oz)
- Connection: 2 m cable with USB-A plug
- Operating and 1 Button, black
- display elements: 1 LED, blue
- Storage temperature: -30 °C to +70 °C (-22 °F to +158 °F)
- Operation temperature: -10 °C to +55 °C (-14 °F to +131 °F)

5

WIRED EXTERNAL DEVICES

5.1

REMOTE SPEAKER MICROPHONE

T.FLEX ANDROID
T.FLEX IOS



1. Microphone
2. PTT button

3. Volume Up/Down
4. Speaker

Designed for smartphones and tablets, the Savox Promate RSM30 is a rugged remote speaker microphone with push-to-talk and full duplex call capability. The ergonomic design allows easy option even when wearing gloves. Light weight and robust design (IP55) as well as a variety of optional earpieces allow a quick adaptation to any work environment.

VENDOR / MODEL

- SAVOX
- PROMATE RSM-30

KEY BENEFITS

- Superior audio clarity and volume output
- 3.5 mm headset connector
- Superior audio quality, up to 100 dB
- Dust & water resistant (IP55)
- Full duplex call functionality
- Volume control
- Ergonomic & ruggedized
- Large buttons for use with gloves
- Rotating belt clip
- Compatible with all leading PTT applications
- Additional earphones and car mounting clip available
- Up to 80 hours talk time

TECHNICAL DATA

- Weight: 180 g with connector cable
- Size: 100 x 67 x 28 mm
- Cable: Coiled length, 630 mm, diameter 4mm, tension strength 50N
- Microphone: Omni directional, sensitivity -39 dB ± 2 dB
- Connectors: 3,5 mm connector for mono earpiece and headset with or without microphone
- Operating temperature: -20°C... +60°C
- Storage temperature: -40°C... +85°C
- Ingress protection: IP55
- ESD, EMI immunity: EN 300 394-1, EN 301 489-1 and EN 301 489-18, EN 61000-4-3, ESD, EN 61000-4-2, FCC

6 HARDWARE DEVICE BUTTONS

T.FLEX supports a various specialized smartphones with PTT, Emergency and Channel change buttons.

6.1 SMARTPHONE ECOM

T.FLEX ANDROID



1. Side PTT button
2. Keep Alive button

3. Emergency button

An ultra-rugged, unlocked, LTE / WiFi / Android™ smartphone. Smart-ex01 works with T.Flex for PTT and emergency buttons.

The Smart-Ex® 01M is a stand-alone device with an own mining certification. Therefore and because of certification reasons a yellow leather case is required in underground mining locations.

VENDOR / MODEL

- ECOM
- Smart-ex 01

KEY BENEFITS

- Such as a touch screen that can be viewed in direct sunlight and easily used with dirty or wet work gloves
- An extremely loud speaker, noise cancellation, a powerful battery, water and drop resistance are just some features of the Smart-Ex® 01 that provide peace of mind to enterprises and workers alike
- Access to productivity applications and worker safety as well as a full suite of industrial-grade
- Unlocked and SIM free – allowing connection to any network worldwide

TECHNICAL DATA

- 4G / LTE -standard (SIM unlocked and free)
- Android™ 4.4, KitKat operating system
- 4.0" capacitive multi-touch screen made of extreme shock and scratch resistant Gorilla® Glass 2
- Glove Touch Screen
- High Visibility Display in Direct Sunlight
- NFC functionality
- 3600 mAh Li-Ion battery pack
- Bluetooth® 4.0 incl. BLE (Bluetooth® Low Energy) BLE (30 times faster, 1/100th of power)
- WIFI 802.11 a/b/g/n
- (Optional) 8 MP rear camera with auto focus and LED flash with torchlight function and 1 MP front camera
- 5-pins water-proof magnetic USB 2.0 High Speed connector
- IP68 - Dust proof, water proof
- Push-to-talk (App solution)
- Dedicated Hardware buttons for PTT, LWP functions
- (Optional) Lone Worker Protection (App solution)
- (Optional) Service Level Agreement (SLA)

6.2 SMARTPHONE SONIM

T.FLEX ANDROID



1. Side PTT button
2. Volume Up / Down

3. Yellow Key
4. Alarm Key

Serving, protecting and providing for others demands a smart device you can rely on. Sonim XP8 is the world's most reliable ultra-rugged smartphone. Built to provide those who serve with the smart communication they need, regardless of situation or environment.

Military-rated design ensures reliable smart communication, and management applications improve business efficiency. Enjoy easy fumble-free keys – large, tactile and intuitive PTT, SOS and volume buttons and controls make communication easy and error-free.

VENDOR / MODEL

- Sonim
- XP8

KEY BENEFITS

- Industry-Leading Rugged Performance Standards, MIL-STD-810G and Non-Incendive Class I, II & III, Div 2 ratings
- Programmable buttons and applications in any condition with Gloved hand/Wet finger operation
- Extremely Loud & Clear Audio
- Connect instantly, reliably, every single time with Push-To-Talk
- Multi-shift Battery Life
- Handset Powered Audio Accessories connected through Sonim's SecureAudio Connector

TECHNICAL DATA

- Operating System: Android N
- Chipset: Snapdragon 630 OctaCore @ 2.2GHz 64bit
- Band: LTE: B1/B2/B3/B4/B5/B7/B8/B12/B13/B14/B20/B25/B26/B27/B28/B29/B30/B38/B39/B40/B41/B66
UMTS: B1/B2/B4/B5/B8
CDMA/EVDO1: BC0/BC1/BC10
GSM: 850/900/1800/1900MHz
- Antenna MIMO antenna for LTE
- Wi-Fi IEEE802.11 a/b/g/n/ac/r 2.4/5GHz Miracast™ - WiFi direct
- Memory: 4GB RAM/64GB ROM, 45GB available user memory, Supports up to 128GB MicroSD external memory
- Bluetooth: BT5.0 with BLE
- GPS: GPS, GLONASS, BeiDou
- Sensors: Video Calling, OMA CPM Advanced Messaging
- NFC: Yes
- Battery: Capacity 4900mAh Li-Ion, Removable; Charging Quick Charge 4.0 via USB-C
- Size: 152 mm x 79.5 mm x 18 mm
- Weight: 335g
- Dedicated Keys: PTT Key, Programmable Key, Volume Keys, SOS Red Alert, Power On/Off; Home, Back, & Recent
- Ports: XPand Interface, USB-C, Sonim SecureAudio Connector, Charging Pins, Dual Nano SIM Card Slots
- Lanyard Loop: Yes
- Rugged Certifications: Non-Incendive Class I, Div 2, Groups A, B, C, D; Class II & III, Div 2, Group
- Display Size/Type 5.0" Gorilla Glass 3, Resolution FHD 1080x1920, Colors 16.7M
- Audio: Microphone 3 mic solution with noise cancellation, Speaker Dual front-facing loud speakers; output 100dB+, HAC M4/T4 Hearing Aid Compatible

6.3 SMARTPHONE SONIM

T.FLEX ANDROID



1. Side PTT button
2. Keep Alive button

3. Emergency button

The Sonim XP7 is the cornerstone of Sonim's Mission Critical Solution. An ultra- rugged, LTE/WiFi/Android smartphone, the XP7 is outfitted with unrivaled features such as a touch screen that can be viewed in direct sunlight and easily used with dirty or wet work gloves.

An extra loud speaker, noise cancellation, powerful battery, resistance to drops and water and a 3-Year comprehensive warranty are just some features of the XP7 that provide peace of mind to enterprises and workers alike.

Access to vertical enterprise worker safety and productivity applications as well as a full suite of industrial-grade accessories completes the solution.

Sonim XP7 works with T.Flex for PTT and emergency buttons.

VENDOR / MODEL

- Sonim
- XP7 (XP7700)

KEY BENEFITS

- Glove touch screen
- High visibility display in direct sunlight
- LTE
- Android™ 4.4 Kit Kat®
- Push-to-Talk
- WiFi 802.11 a/b/g/n/r with hotspot feature

TECHNICAL DATA

- Operating System: Android 4.4 Kit Kat®
- Chipset: MSM8926 1.2 GHz Quad core
- BandFDD-LTE B2/B4/B5/B7 B1/B8/B12/B17 UMTS 850/900/1900/2100 MHz GSM 850/900/1800/1900 MHz
- Antenna: MIMO antenna for LTE
- WiFi802.11 a/b/g/n/r with hotspot
- Memory: 16 GB Internal storage/1 GB RAM User memory: 12 GB
- Applications: Google Play, Push-to-talk
- Bluetooth4.0/BLE (Low Energy)
- GPS NFCGPS, GLONASS, NFC
- Battery Capacity: Embedded 4800 mAh
- Battery LifeStandby: 1000 h; Talk: 40 h
- Sizes:137 mm x 72.1 mm x 20.8 mm
- Weight: 290 g
- Certifications: FCC, PTCRB, IEEE1725, CEC, Bluetooth SIG, WFA, IC
- Dedicated Keys: PTT key, Alarm key, Power key
- Ports: 3.5 mm audio connector/ magnetic USB connector/12 pin connector
- Display Type: 4.0"
- Resolution: WVGA (480 x 800)
- Outdoor Visibility :Yes
- Microphone: Dual mic solution with noise cancellation
- Speaker: 19 mm loud speaker with Gore® protective vents, output up to 103 dB
- Video Formats: Support AVI, MP4, 3GPP
- LED Torch Light: Yes

6.4 SMARTPHONE SONIM

T.FLEX ANDROID

1



1. Side PTT button

The Sonim XP5 is an ultra-rugged LTE, Push-to-Talk phone with WiFi capabilities, powerful audio and long lasting battery, allowing field workers to communicate with their teams more efficiently.

Dual, front-facing loud speakers ensure clear communication no matter how noisy the environment while the powerful battery will last through back-to-back shifts.

Built for those heavy Push-to-Talk (PTT) users who work in extreme environments in industries such as construction, transportation, manufacturing and hospitality, the Sonim XP5 is fully water and dust proof, resistant to drops onto concrete from over 2M and comes with a large PTT button for ease of use with gloves.

Sonim XP5 works with T.Flex for PTT.

VENDOR / MODEL

- Sonim
- XP5

KEY BENEFITS

- Ultra-Rugged Design
- Corning® Gorilla® GlassDisplay
- LTE
- Push-to-Talk
- WiFi 802.11 a/b/g/n/r 2.4/5GHz mobile hotspot

TECHNICAL DATA

- Operating System: Proprietary OS
- Chipset: MSM8926 1.2GHz
- Band: FDD-LTE: B2/B4/B5/B7/B17
- UMTS: B1/B2/B5
- GSM: 850/900/1800/1900MHz
- Antenna: MIMO antenna for LTE
- WiFi: WiFi 802.11 a/b/g/n/r 2.4/5GHz mobile hotspot
- Memory: 4GB Internal storage/1GB RAM
- User memory: 1GB
- Applications: Push-to-Talk
- Connectivity: Bluetooth BT 4.0/BLE (Low Energy)
- GPS: GPS, GLONASS
- Battery Capacity: 3180mAh Li-Ion
- Battery Life: Talk: 25h, Standby: 25 days
- Sizes: 137.8mm x 60.8mm x 23.4mm
- Weight: 235g
- Certifications: FCC, PTCRB, IEEE1725, CEC, Bluetooth SIG
- Dedicated Keys: PTT key, Speaker phone key, Volume keys
- Ports: 3.5mm audio connector, magnetic USB connector, 5 pin connector
- Display Size: 2.4"
- Type: Corning® Gorilla® Glass 3 display
- Resolution: QVGA (320x240)
- Audio Microphone Dual mic solution with noise cancellation
- Speaker Dual, front-facing loud speakers with Gore® protective vents, output up to 104dB
- Camera: 5MP fixed focus
- LED Torch Light: Yes

6.5 SMARTPHONE BOXCHIP

T.FLEX ANDROID



1. Multi-function Knob
2. DMR/PoC Switch

3. Side PTT Button
4. Volume Up / Down

Boxchip S700A is an advanced professional handheld 4GLTE radio, the integration of safe and reliable DMR communication and new value-added services. All-round means of communication, realtime control for the industry customers to bring a strong business ability, stable and reliable real time communication response, and more excellent integration experience is the best communications partners for industry customers.

VENDOR / MODEL

- Boxchip
- S700A

KEY BENEFITS

- Traverse networks, moving from LTE to DMR and back seamlessly to ensure you always remain connected
- Mobile Device Management (MDM) client can track device activity, DMR programming over the air
- Dual Bluetooth, Bluetooth V4.1 delivers an enhanced data rate with low energy consumption through a secure connection for wireless connectivity
- Optimise with high capacity power and charger options

TECHNICAL DATA

PoC

- Processor: Octa Core 1.5GHz
- Android: Android 6.0+
- Memory: 2GB /16GB
- LCD touch: Gorilla® Glass 3
- Lcd touch feature: Web touch/ Golve touch/ Solar visibility
- LCD Size: 4.0inch,800*480 Pixels
- Camera: 8MP+ 5MP camera; Optional 13MP+8MP
- Flash light: Highlight flash LED
- SIM Card: Support Dual Micro Sim
- GSM/GPRS/EDGE: 850/900/1800/1900MHz
- GSM: B2 B3 B5 B8
- WCDMA: B1 B2 B5 B8
- TD-SCDMA: B34 B39
- FDD-LTE: B1 B2 B3 B4 B5 B7 B8 B28AB/B20 B17
- TDD-LTE: B38 B39 B40 B41
- Bluetooth: Bluetooth 4.1
- NFC: Support or Optional
- Battery capacity: 4500 mAh
- Wi-Fi (WLAN): 2.4G IEEE802.11n (1T1R); 5.8G IEEE802.11ac (1T1R)
- GPS navigation: GPS/AGPS/GLONASS
- Sensor: Acceleration,Proximity Sensor,Light Sensor,Gyro Sensor,Compass Sensor
- External Port: Motorola M6
- Operating Temperature: -15°C ~ 60°C
- Humidity (20 ~ 90%): 20 ~ 90%
- USB type: USB2.0, Type C USB Port
- External Accessories: Support Remote micro speaker, Earbud, Body camera
- Dimension: 69mmx143mmx26mm
- Terminal weight: 375G

6.6

T.FLEX ANDROID

SMARTPHONE K-MOBILE



1. PTT button
2. Channels changing

3. SOS button

K-Mobile R887 is a specialized smartphone with support for PTT, emergency calls and change channels.

VENDOR / MODEL

- K-MOBILE
- R887

TECHNICAL DATA

- OS: Android 5.1
- LCD: 2.4QVGA, 240*32mm
- TP: TFT screen
- Resolution: QVGA
- Platform: MT6735
- Band:
- WCDMA: B1/B8/B19
- LTE: B1/B3/B5/B7/B8/B19
- Network: supports GSM/GPRS/EDGE,
- TD-SCDMA, WCDMA, TDD-LTE, FDD-LTE
- Memory: DDR3, 1 + 8G
- SD: card p to 32GB
- Camera:
- Front: 2.0MP
- Rear: 8.0MP
- Flashlight: supported
- P-sensor: supported
- Light: sensor supported
- 3D: sensor supported
- GPS: +Beidou supported
- Wi-Fi: supported
- SIM: one micro
- IO: micro 5 pins
- Earphone: supports 3.5mm earphones
- USB: supported
- Video: supports MP4 player, 3GP, AVI
- Audio: supports MP3, MID, AMR
- FM: supports FM radio and network FM
- Online: TV supported
- Battery: 3600mAh
- Waterproof IP67 Level
- Anti-drop

6.7 SMARTPHONE RUGGEAR

T.FLEX ANDROID



1. PTT button

2. SOS button

This smart Android device is perfect for the user who requires Push to talk (walkie talkie) as the handset has a dedicated PTT button. The handset also has the option to extend the battery like with an extendable handset. This handset is waterproof and dustproof and also is dual sim so you can run 2 sim cards at the same time if needed.

The RG500 survives a drop from a height of 2 m, as well as large amounts of dust and temperature fluctuations.

All this cannot influence the technical possibilities. Equipped with an amplifier loudspeaker, a 5 megapixels camera and a powerful LED flashlight – the RG500 will make the activities much easier.

RugGear RG 500 works with T.Flex for PTT and emergency buttons.

VENDOR / MODEL

- RUGGEAR
- RG500

KEY BENEFITS

- IP-68 certified
- NFC connected
- Temperature resistant
- Torch
- Military spec
- Compass
- Rugdisplay-glass
- GPS
- Loud speaker

TECHNICAL DATA

- OS: Android™ 4.2.2 Jelly Bean
- Bluetooth: 4.0
- Performance: 3G (UMTS/HSPA), processor MT6572 (Dual Core 1.2 GHz), internal memory 4 GB ROM and 512 MB RAM
- External memory microSD: up to 32 GB
- 2 cameras: 5 MP rear camera
- 0.3 MP front camera
- video recording with autofocus
- NFC: Near Field Communication
- Frequencies: Quad band GSM/GPRS/EDGE 850/900/1800/1900 MHz WCDMA/HSPA 900/2100 MHz
- Battery: 3000 mAh battery, standby 300 hrs.
- Talktime 2G/3G: 468 min./210 min.
- Wi-Fi: IEEE 802.11 b/g/n
- Dual SIM
- Solutions: can be used with a push-to-talk, loneworker or NFC solution.
- IP68: 30 min. up to 2 m, impervious to dust and microparticles
- Operation range: from -20°C to 60°C
- MIL-STD 810G: special protection against falls, vibration, humidity, air pressure and temperature variations
- Display: 3.2" (8.13 cm) RugDisplay-Glass, rugged TFT-touchscreen with a resolution of 320 x 480 pixel
- GPS: localization and navigation, G-Sensor, compass, altimeter
- 206 g

6.8 SMARTPHONE KYOCERA

T.FLEX ANDROID



1. Side PTT button

It's ultra-durable with Military Standard 810G protection against dust, shock, vibration, temperature extremes, blowing rain, low pressure, solar radiation, salt fog, humidity, and water immersion making it an ideal sidekick for just about any adventure.

KC-S701 works with T.Flex for PTT.

VENDOR / MODEL

- Kyocera
- Torque KC-s701

KEY BENEFITS

- Dustproof (IP6X)
- Shockproof
- Vibration
- Humidity: 95% humidity for 10 days straight
- Solar radiation: Solar radiation exposure of 1120W/m² for 24 hours
- Low pressure : at 57.11kPa/4572 meters for 2 hours
- Waterproof IPX8 / IPX5
- High/low temperature: Extreme temperatures of -30° to 60°C for a non-operating unit for 4 hours and -21° to 50°C for an operating unit for 3 hours
- Salt fog: Exposed to 5% salt fog for 24 hours followed by 24 hours drying time

TECHNICAL DATA

- Size: 136 x 68 x 13.5 Mm
- Weight: 182 g
- Talk time: UMTS: up to 27 hours / GSM: up to 17 hours
- Standby time: UMTS up to 1000 hours / GSM up to 950 hours / 4G LTE up to 810 hours
- Battery type: 3100 mAh Lithium ion (LI-ion), Non-removable, Wireless Charging (Qi-enabled)
- Display: SIZE: 4.5" HD (1280 x 720), Wet/Glove: Touch Functionality
- LED flash and auto-focus, 2MP front-facing camera for video calling
- Operating system: Android 4.4 (Kit Kat)
- Chipset: MSM8928, Qualcomm® Snapdragon™ 400 1.4GHz quad-core processor
- Modes: UMTS Band 1 (2100)/Band 2 (1900)/Band 5 (850)/Band 8 (900), 4G LTE Band 1/ Band 3/ Band 7/Band 20, GSM 850/900/1800/1900
- Connectivity: Wi-Fi a/b/g/n/ ac (2.4GHz/5GHz), Tethering, Bluetooth® 4.0, NFC
- Memory: (ROM/RAM): 16GB/2GB, microSDTM memory card slot (MAX 128GB)

6.9 SMARTPHONE PANASONIC

T.FLEX ANDROID



1. PTT button

The Toughpad FZ-N1 with Android™ 6.0 is one of the thinnest and most lightweight handheld tablets in the 4.7” category. The device offers numerous unique features, including an angled rear barcode reader which protects users from repetitive strain and enhances productivity, and an optional passive and active pen for precise handwriting and signature capture.

VENDOR / MODEL

- Panasonic
- Toughpad® FZ-N1

TECHNICAL DATA

- Hardware & Software: Android 5.1.1
- Qualcomm® MSM8974AB 2.3GHz Quad Core
- Durability: IP65 (high-pressure jet spray) and IP67 (submersible up to 3.3ft. for 30 minutes)
- Display: 4.7 inch high definition 1280 x 720 sunlight-viewable display; 10-point capacitive multi-touch with rain sensing and glove touch mode, optional stylus pen (Active or Passive)
- Power supply: Quick charging 3200 mAh Li-Ion standard battery pack, and optional 6200 mAh long life battery back; Warm Swap capability
- Interface & Expansion: Angled 1D/2D barcode reader, NFC, GPS, MicroSD, Dual SIM, USB 2.0 port(micro USB) x 1
- Wireless: Wi fi802.11 a/b/g/n/ac; 4G LTE, HSPA+, UMTS, EDGE, GPRS, CDMA 1x, EVDO Rev.A
- Weight: approx. 0.61 lbs.

6.10 SMARTPHONE BLACKVIEW

T.FLEX ANDROID



1. Volume Up/Down

2. PTT button

The Blackview 6000 smartphone is totally waterproof. It can be hold in a depth of 1,5 meters for 30 minutes without damages. Equipped with GPS and GLONASS dual-satellite-positioning it guarantees safety and security.

This rugged smartphone offers 3 GB disk space.

VENDOR / MODEL

- Blackview
- BV6000

KEY BENEFITS

- IP68 makes survivable in harsh enviroment
- Snapshot button
- Corning Gorilla Glass 3
- 8.0 MP HD Camera Lens
- Built-in NFC technology
- Long Lasting Battery
- 4G Network
- Dual-satellite Positioning System GPS+GLONASS
- Atmosphere Pressure Sensor
- Bi-material injection molding frame

TECHNICAL DATA

- Dimensions: 152.3 mm x 81 mm x 16.6 mm
- Battery: 4500mAh, Li-Polymer
- CPU: MT6737T ARM Cortex – A53 1.5GHz Quad-core
- GPU: Mali T720
- Memory: 2GB RAM + 16GB ROM (TF 32GB)
- Display: 4.7" HD 720*1280
- OS: Android 6.0
- Camera: OV Software 8.0MP Rear Camera, Software 2.0MP Front Camera
- Network: 2G: GSM 850 / 900 / 1800 / 1900, 3G: WCDMA 850 / 900 / 1900 / 2100, 4G: LTE 800 / 1800 / 2100 / 2600
- SIM Card Dual: SIM Card, Dual Standby, One Talk, Micro SIM Card, TF Card
- Sensors: Light Sensor, Proximity Sensor, Accelerometer Sensor
- Multi-media Video: MP4,3Gp,MOV,MKV,AVI,FLV,MPEG,
- Audio: FLAC, APE, AC, MKA, OGG, MIDI, M4A, AMR
- Image: JPEG, PNG, GIF, BMP
- Operating Environment: Working environment temperature-15°C-55°C, Relative humidity 95 %C
- Operational altitude - up to 5000 meter



TASSTA

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