

# TETRA PRODUCT INFORMATION



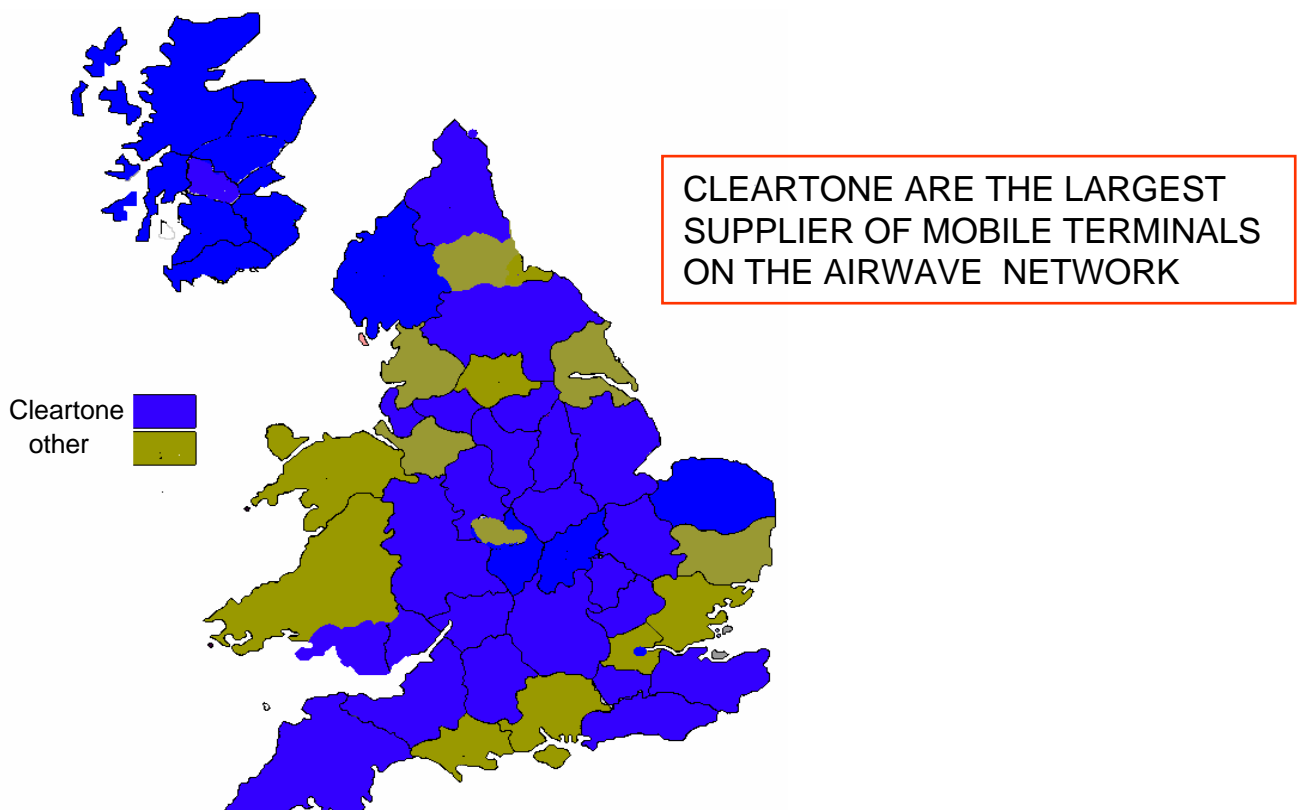
*Standard control unit*



*Integrated mobile data terminal*

- CM9000 TETRA MOBILE with GATEWAY/ REPEATER and VHF- UHF DUAL MODE OPTION.
- CD300 MOBILE DATA TERMINAL.

- ❑ The mobile includes as standard DMO Gateway and Repeater operation.
- ❑ The transceiver can provide up to 10 watts of RF output power, maximising the equipment operational area within the Tetra network and also in direct mode for communications between mobile terminals.
- ❑ Dual mode Tetra / VHF- UHF operation re-using existing analogue mobiles combined into a single control head provides in-vehicle space savings, and offers flexibility for operations of mixed digital / analogue systems.
- ❑ A range of specially designed mobile data terminals provide control of all functions of the Tetra mobile and offer a complete range of programme and system options that include;
  - Automatic Number Plate Recognition System (ANPR)
  - WAP browser.
  - Automatic Destination Navigation,
  - Light bar and siren control,
  - Digital and analogue video systems.
  
- ❑ Cleartone equipment is currently being exported to over 30 countries and in the UK, as the map below shows, the majority of UK Police Forces have selected Cleartone as their prime Tetra mobile supplier .





## TETRA – CM9000 mobile

- High RF output power
- Large display screen
- Dual / triple mode  
Tetra- VHF/UHF option
- DMO Gateway and Repeater operation
- Compact control head option for covert use
- Dual control options
- Traffic routing option
- Data terminal option
- Internal GPS option

The CM9000 TETRA mobile has been developed to meet the demanding requirements of the emergency services.

The transceiver provides up to 10 watts of RF output power, maximizing the equipment operational area within the Tetra network and in direct mode between mobile terminals.

DMO Gateway and Repeater is fitted as standard and activated as and when required by entering a PIN code via the keyboard.

The display software, whilst packed with sophisticated features, is simple to use with easy to follow menus and shortcut keys to allow quick and easy access to all features.

The CM9000 supports all of the voice and data services of the TETRA networks including TEA1, TEA2 and TEA3.

The control head software has the option to allow for dual mode operation between TETRA and existing VHF or UHF networks which is useful for existing radio systems that might need TETRA access to their private networks.

Dual control head working option is available together with transportable and motorcycle versions.

The CD300 data terminal uses the latest touch screen technology and has full control of the Tetra mobile as well as offering options such as WAP, destination navigation system, video recording systems and bespoke windows programmes.



*Data terminal option*

## LYNX CM9000 TETRA MOBILE INFORMATION

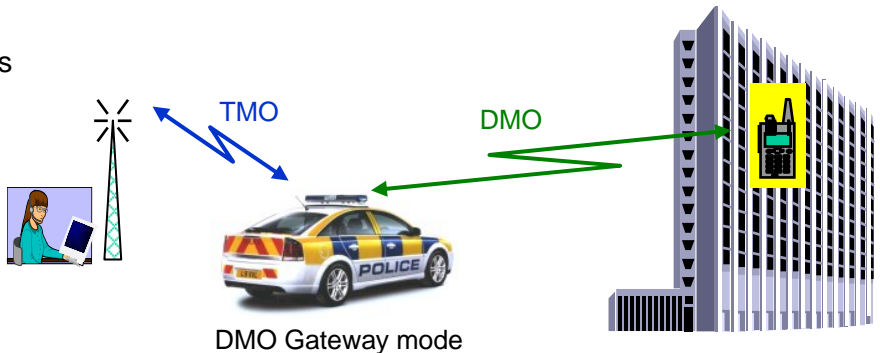
<b>Frequency Bands:</b>	380 - 400 MHz / 406 - 430 MHz / 450 - 470 MHz / 806 - 870 MHz
<b>Operation Mode:</b>	Trunked and direct mode operation. DMO Gateway and Repeater operation. Dual / Triple mode operation with VHF / UHF using a single control head
<b>RF Power:</b>	Software controlled up to 10 watts (Class 2), in specific bands
<b>Size and weight:</b>	Radio Unit: 45 mm (h) x 170 mm (w) x 220 mm (d) 1640 grms Control Head: 60 mm (h) x 180 mm (w) x 51 mm (d) 418 grms
<b>Encryption:</b>	TETRA Air Interface Encryption using either TEA1 / TEA2 / TEA3 algorithms
<b>Approvals:</b>	ETSI Type Approved for radio / EMC, MoU Inter-operability approved



### DIRECT MODE GATEWAY OPERATION

Portable performance operating trunked mode from inside buildings to the level demanded by emergency services can be a problem as currently experienced by many system users.

Using mobile Gateways option ensures 'at scene' coverage anywhere within the tetra trunked coverage area.



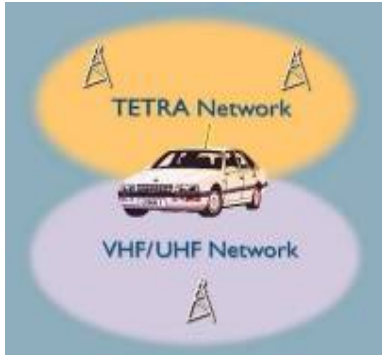
### DIRECT MODE (DMO) REPEATER OPERATION

DMO Repeaters operate outside the Tetra trunked network and need no infrastructure support.

Mobile Repeaters stabilise and expand the direct mode coverage area.

Portables can only communicate with each other via the mobile Repeater.





Dual mode operation of Tetra and the existing analogue mobiles provide the user with seamless communications during and after migration to Tetra.

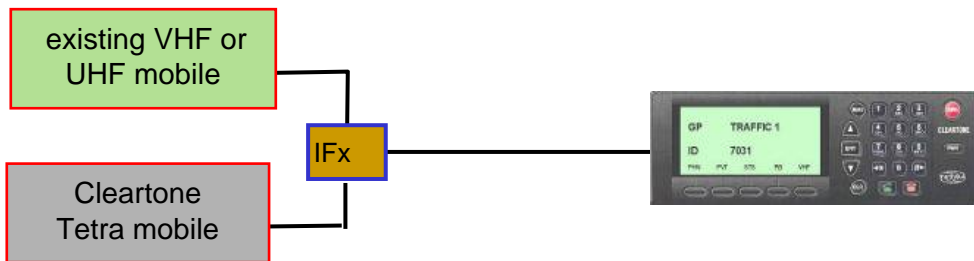
- Re-uses customer's existing analogue mobiles.
- Provides saving of space in - vehicle.
- One control head for analogue and Tetra mobiles.
- Analogue / Tetra Gateway repeater mode option.

Example



Dual mode allows communication between Tetra and analogue VHF or UHF systems

DUAL / TRIPLE MODE ADAPTOR LIST



IF 9 series.....used with Cleartone VHF / UHF mobiles

IF 5 series..... used with Bosch /Ascom VHF /UHF mobiles

IF 4 series.....used with AEG VHF /UHF mobiles.

IF 3 series.....used with Motorola VHF /UHF mobiles.\*

IF 2 series..... used with Philips VHF / UHF mobiles

IF 1 series.....used with Icom 1010 / Tait mobiles

Other mobile product adaptors available

\* includes Motorola Smartzone



## CD300 Mobile data terminal

- Compact display unit
- Touch screen display
- Windows 'XP' system
- Migration path from standard control head
- Bespoke template design options
- Automatic destination navigation option
- WAP access
- Video system option
- Vehicle number plate reading option



CD300 computer unit

The CD300 mobile data unit provides a simple upgrade path for existing users of Cleartone Tetra mobiles to full Windows based mobile data system.

A compact touch screen unit provides full control of the Tetra mobile functions and Windows programmes to allow files to be created in the data base for transmission of relevant data over the Tetra network. Options are available to use other bearers such as GPRS.

The data terminal is available as a stand alone unit or can be interfaced with the existing Cleartone Tetra mobile system by replacing the existing control unit and will display all the standard Tetra function and features. Screen based fast access entry bars provide direct access to PNC, data and other key functions .

Screen formats and document displays can be designed to meet customer requirements such as record / reference items.

Vehicle Automatic Number Plate Recognition (ANPR) and video system upgrades are available and specific product data sheets provide relevant information.

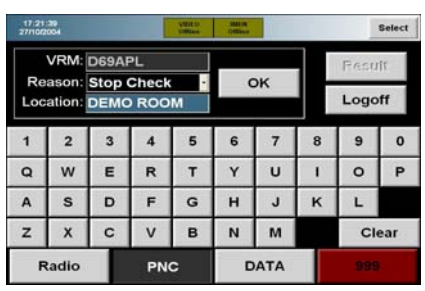
Automatic and manual destination navigation software option is available that will automatically downloads to the screen route details against specific jobs and provide visual and audio route directions.

The CD300 mobile data terminal provides a valuable upgrade path to data systems from a standard Cleartone Tetra mobile.

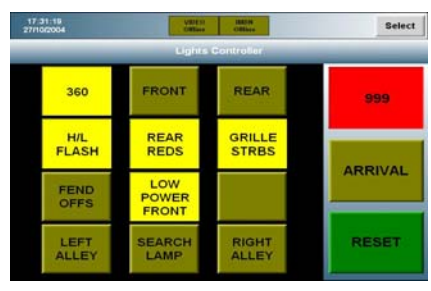
# CD300 MOBILE DATA TERMINAL



*SDS data messaging*



*PNC access*



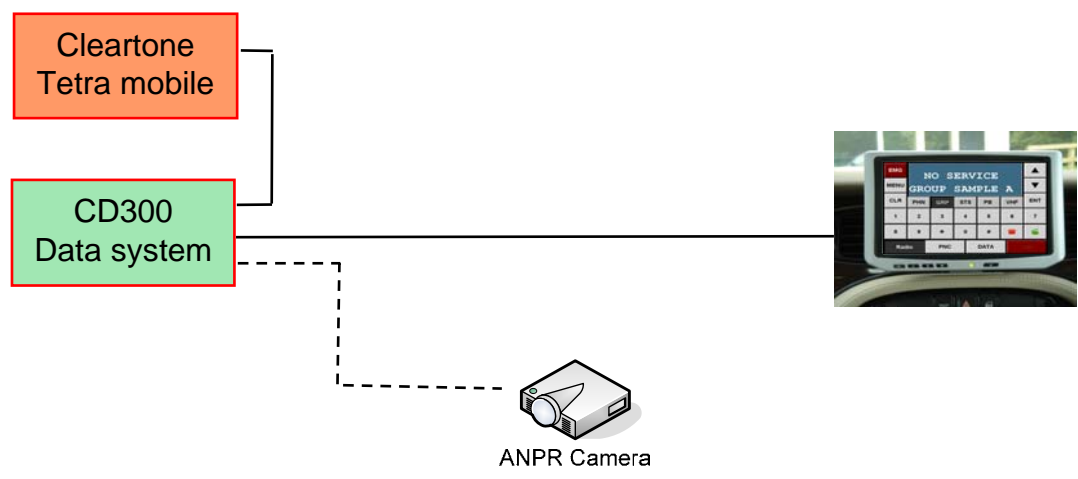
*Lights and sirens*

The CD300 system can be used as a stand alone unit or work with existing Cleartone Tetra mobiles providing central control from a touch screen display unit.

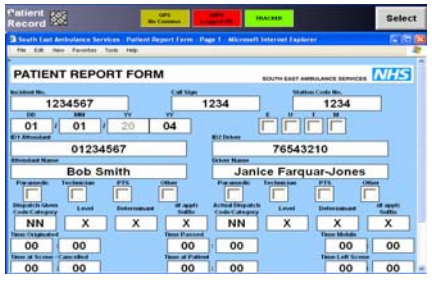
When used with existing Cleartone Tetra mobile the standard Tetra control head can either be blanked off or left operational for dual control use.

The Tetra system always remains operational as protection against any computer failure and the dual control operation will allow full Tetra systems operation.

## TYPICAL INSTALLATION



*WAP browser*



*Bespoke forms*



*Destination navigation*



## Tetra compact control unit

- **Ideal for use in private / leased cars, simple fit, no fascia drilling**
- **Cars with no DIN slot, limited space**
- **Microphone with integral keyboard controls all Tetra functions**
- **Compact display unit can be mounted anywhere in vehicle**
- **Displays 2 / 4 lines of text information**
- **Interchangeable with standard unit**



*Velcro installation option*

The compact control system has been designed for installation of mobiles into private / leased or covert vehicles that do not have either a DIN mounting slot or suitable mounting area for installation of the standard control head.

The unit provides control of the Tetra mobile functions and facilities that are available with the standard head.

The Cleartone compact system consists of a lightweight, compact remote mount display unit that has a large display screen that can be secured to the required location within the vehicle using either the supplied mounting bracket or velcro pads.

A fist microphone, which has an integral illuminated keyboard, provides operational control of the mobile functions and features.

The benefits of using a separate display is that can be mounted in any visible and safe location within the vehicle so that the user can easily read the display.

The system is available in special format for installation on motorcycles or vehicles and a range of options and accessories complement the compact system.



## Tetra motorcycle mobile

- **Weatherproof control head options.**
- **Remote display option**
- **Handlebar control unit option**
- **DMO Gateway 'away' from bike comms.**
- **DMO Repeater option.**
- **UK Police approved for BMW / Honda fits.**



*Standard control unit*

The MB9000 TETRA motorcycle equipment follows on from the highly successful analogue dual band radio system currently the standard motorcycle fit for the UK Police.

Both the control head and transceiver units have been built to fit into existing motorcycle radio brackets, and the optional BK100 cable adaptors allow the re-use of existing control cables, thereby greatly simplifying installation.

The special fully illuminated and weatherproof control head has been specifically designed for day or night operation and fits into the standard side panel on the motorcycle.

An optional remote mount display screen (BRD10) for handlebar or front fascia mounting is available for those applications where a second display is required.

Additional option is a separate handlebar mounting interface unit (HB5) for changing volume levels, talk-groups together with an emergency button.

The DMO Gateway functionality is available and will provide away from the bike communications. The motorcycle unit is also capable of DMO Repeater function when programmed.

The MB900 interfaces with most helmet control sets and is supplied as standard with a fist microphone.



## Tetra fixed / Transportable units

- Compact desktop unit
- Transportable version
- Rack mount options.
- Outdoor units.
- DMO Gateway option.
- DMO Repeater option.
- Dual mode Tetra / VHF or UHF options.
- Supply interruption recovery option.
- Recording interface option

The CM9000F Tetra fixed station range of products offers the user a comprehensive range of products to meet operational requirements ranging from a simple desktop unit through to transportable, rack and external mount equipment.

Applications include remote site operation such as 'fallback' operation where the base station can be radio or landline controlled using the relevant options.

Also, 19" rack mount versions of the Tetra / VHF or UHF repeater are available and each system can be bespoke manufactured to customer specific requirements.

Included in the transportable range of products is a special unit that has been developed for 'scene of incident' use which allows simultaneous Gateway and Repeater operation.

A recording interface option (AB) is available providing in / out audio for external recording of all transmitted and received voice traffic from the base station.

For remote site operation the MRM7 system status recovery option automatically restarts the mobile system to its original operating condition, ie DMO Gateway or Repeater mode or dual mode VHF/UHF in event of a mains supply failure to the equipment eliminating the need to attend remote sites.



*Transportable unit*



## Tetra mobile internal GPS and DM2 alarm / monitoring unit

- **Internal GPS module**
- **Low cost**
- **Software controlled by the mobile**
- **Programmable updates based on time and speed**
- **7 day GPS location storage option**
- **Alarm contact option with recorded history**
- **Removable data**
- **Works with any OEM control room system**



*DM2 alarm / monitoring unit*

The Cleartone global positioning system (GPS) module fits inside the mobile which saves installation time and vehicle space compared to external add on units.

All of the functions of the GPS module are controlled by the mobile's software which includes a facility to programme specific time and speed updates that you want to apply for sending information to the control network.

The DM2 option is a microprocessor module that provides GPS data storage and alarm recording of vehicle movements.

The ability to record and store all the locations of where the vehicle has been together with any of the pre-programmed alarm conditions that have been activated is also provided within the DM2 software.

Up to 10 alarm inputs can be connected to the unit such as 'blue lights on' or 'gun box open' etc, the condition of which will be stored in the module and /or transmitted over the tetra network to the control centre.

Revolving 7 days continuous recording of location and alarm events are automatically stored within the module which can be downloaded via the comm's port for subsequent review.

Options are available to use either the Tetra internal GPS module and aerial or a separate system to provide the bearer details for location recording.



## Tetraguard alarm systems

- **Compact unit**
- **High RF output power**
- **Programmable only via computer**
- **Tamper detection**
- **Batteries / mains.**
- **Speech mode.**
- **Password protected**
- **Remote listening**
- **GPS option**

The Cleartone ZA800 Tetra alarm unit incorporates a host of functions and features that make the product one of the most flexible units available on the market.

With the capability to operate at 10 watts RF output power the unit is ideal for use in rural and difficult coverage areas.

For total security all of the functions and features are laptop programmable, and when activated, there are no external controls available for misuse on the alarm unit

Additionally the alarm unit incorporates tamperproof / movement detection modes which will automatically send an alarm signal to the control station when activated.

Features include 'over-the-air' password protection, listening, arming and disarming, speech and remote zoning .

Self contained batteries with an integral re-charging system plus AC mains operation, means that the unit meets and exceeds all operational requirements

The Tetraguard 800 management system stores and displays via a computer all of the states of the remote alarms and also incorporates automatic remote polling and diagnostics checking using the signaling of the Tetra network.



*Management system*