Radio Gateways

Radio Gateway DGT RGW is a crucial element of DGT-MCS. Radio Gateway DGT RGW allows you to attach to DGT MCS various types of radio technologies, such as TETRA, EDACS, DMR, analog radio etc. DGT RGW can also support IP telephony and voice recording software which allows to build a small DGT-MCS system arround one DGT RGW device.

DGT RGW is offered in three versions: Military (DGT RGWv1M), Rugged (DGT RGWv1R) and Commercial (DGT RGWv1C). It allows for flexible adaptation to user needs.

- **Military** – enhanced hardware, transportable, designed for operating and storage in extreme conditions (IP 65, work temperature from -40°C to +70°C)

- **Rugged** - reinforced equipment, transportable, designed for outdoor operating and storage (IP 53, work temperature from -40°C to +70°C)

- **Commercial** - device designed for use in server rooms and/or offices.

	RGWv1M	RGWv1R	RGWv1C
Reduced operating temperature	Work: - 20˚C, Max: - 40˚C	Work: - 20˚C, Max: - 40˚C	Work: + 5˚C, Max: - 10˚C
Increased operating temperature	Work: +55˚C, Max: +70˚C	Work: +55˚C, Max: +70˚C	Work: +40˚C, Max: +60˚C
Protection level	IP65	IP53	IP22
Platform leveling vibration	Yes	Yes	No
Rack-mounting rack 19 inches	Yes (Height 2U)	Yes (Height 2U)	Yes (Height 1U)
Power	12-24V	12-24V	12-24V
Power consumption (max)	20W	20W	20W
Width	363mm	363mm	482mm
Depth	210mm	210mm	160mm
Height	132mm*)	132mm*)	44,5mm
Weight	4,0kg (6,6kg*))	4,1kg (7,0kg*))	1,6kg
Procesor	CPU Marvell Armada 2 Core 1GHz ARMv7	CPU Marvell Armada 2 Core 1GHz ARMv7	CPU Marvell Armada 2 Core 1GHz ARMv7
Memory RAM	DDR3 2GB	DDR3 2GB	DDR3 2GB
Primary hard disc	mSata 32GB	mSata 32GB	mSata 32GB
Secondary hard disc	mSata 128GB	mSata 128GB	mSata 128GB
RS 232 port	4 +1(console)	4 +1(console)	4 + 1(console)
USB port	2	2	4
ETH port	1	1	1
Switch ETH	4 ports	4 ports	4 ports
Audio In/Out ports	2	2	2
WiFi	1 module	1 module	1 module
Alarm inputs ports	-	-	8 ports

System scalability and integration / expansion capabilities

Based on DGT-MCS system it is possible to deploy both - small systems comprising of few dispatch consoles, radios and telephony lines as well as nationwide systems that contains hundreds of dispatch consoles, radio gateways and telephony trunks.

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DGT-MCS

Integrated Dispatch Communication System

The optimal solution for dispatch communication systems in public services

Radio systems (TETRA, DMR, EDACS, UHF / VHF) and telephone (PSTN / GSM / UMTS / LTE VoIP) integration

25 years of experience in designing and implementing dispatch systems and over 15 years of experience in integration of radio resources communications

Hundreds of implementations of dispatch systems on domestic and foreign market

DGT-MCS is a solution designed and developed by DGT company. This is a VCS class system (Voice Communication System) used for integration of different communication means – radio communication systems (TETRA, DMR, VHF/UHF) and telephony (PSTN/ISDN, VoIP, GSM/UMTS).

DGT-MCS enables the systems' operators to handle from a single application installed on a dedicated dispatcher console or a univeral PC computer audio traffic and signalling in between above mentioned systems.

Key system functionality

- integration of various radio communication systems – UHF/VHF, DMR, NXDN, dPMR, TETRA, EDACS, CDMA GoTa,
- integration of telephony systems (analog and digital) - FXS/FXO, E&M, IP/VOIP (SIP,H323), ISDN – DSS1, PSTN-SS7, GSM/UMTS, CDMA,
- radio – telephony patching,
- call/contact centers functions,
- vehicle / mobile unit GPS tracking - map module,
- integration with command and control systems via API,
- dispatcher communication recording (telephony and radio),
- high scalability and redundancy (e.g. polish nationwide emergency 112 call handling system comprise 17 DGT-MCS servers and over 600 dispatch cobsoles).

Selected radio functions – UHF/VHF and DMR / NXDN / dPMR systems

(support of a given function depends on the radio and system capabilities)*

- priority based sharing of radio resources between dispatchers,
- radio channel / transmit power / squelch setting selection,
- PTT operations on single radio,
- PTT broadcasting to group of radios,
- individual / group / emergency radio calls,
- SDS / status text messaging,
- BSS (Best Signal Selection) – automatic selection of the best radio transmitter based on the received signal analysis,
- CROSSBAND – different radio systems PATCHING,
- radio / telephony PATCHING,
- voice recording of radio / dispatcher communications,
- CTCSS and SelectV signaling support,
- remote radio stun, kill or revive operations,
- simultaneous radio control by operator consoles and manipulator,
- GPS based radios locaation,
- ambience listening,
- ... and other radio system specific functions.

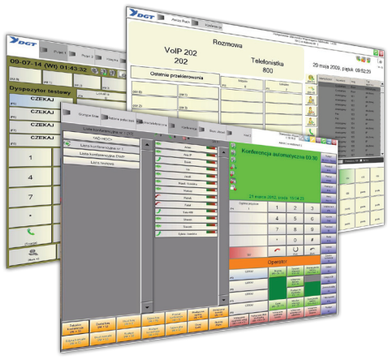
Selected radio functions – TETRA

(integration dependning on the TETRA solution based on API or direct radio control)*

- individual calls (duplex / simplex),
- group calls,
- broadcast calls,
- emergency / priority calls,
- radio ambience listening,
- talk group patching and multiselecting,
- status monitoring of radios (registered, available, off), groups and applications,
- monitoring of active calls,
- DGNA management support,
- SDS / status messages,
- call and SDS messages history,
- voice / text recording,
- active call volume control,
- remote radio stun, kill or revive operations support.

Telephony – dispatching communication

- call queuing – unlimited number of queues support, dynamic sharing queues between dispatchers,
- subscriber and / or line status monitoring (busy, idle, ringing, unavailable, etc.) with speed dials,
- conference calls (predefined / dynamic),



- dispatcher intercom communication,
- short text (sms) communication between dispatchers / operators,
- supplementary services support – e.g. call transfer (CT), call intrusion (CI), call hold (CH) and others,
- ACD – configurable and redundant automatic call distribution suitable for emergency calls handling,
- IVR - interactive voice response system,
- and many other telephony systems specific functions.

Call recording

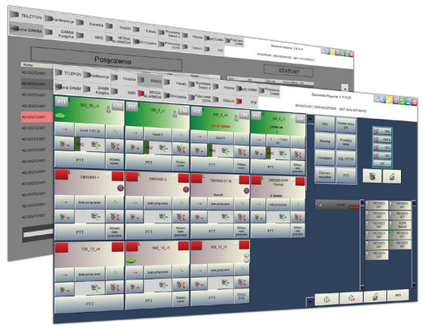
- voice recording of radio and telephony,
- recording of all dispatcher communication,
- independent recording of radio, IP and TDM communications technologies,
- recording of the associated telephony signaling protocols (SIP, H.323, SCCP, DSS1, SS7 etc) information,
- recording of the associated radio transmission parameters (channel, ID Select5, CTCSS),
- assigning system events to recordings (events ID),
- centralized and distributed call recordings databases support.

Automatic emergency and alert notification

- automatic alert trasmission, announcements and other information to the recipients, using various communication channels (voice / telephony, SMS / MMS, email, fax),
- feedback receipts and detailed notification reports,
- public recipients registering support (via Internet "guest" accounts) – with ability to assign to public notifications scenarios,
- voice messages – recorded with the phone, generated from the text (embedded TTS synthesizer) or imported from audio files,
- text messages – insert directly from the keyboard or imported from the text file,
- notification scenarios start – through the webpage, over the phone or simply using the dedicated alarm button.

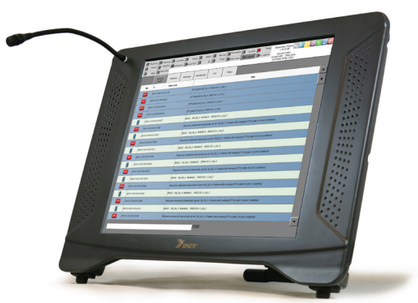
Dispatch console application

- full support of DGT-MCS radio / telephony dispatch services and functions,
- multi domain support,
- recorded voice calls playback,
- configuration and customization flexibility:
  - multiple working panels / screens,
  - independent configuration of each screen for each operator,
  - configurable size, colors, fonts of any controls, buttons and function panels,
  - assigning audio streams from different sources (radio, telephone, recordings playback) to the console available audio devices (e.g. different speakers, handset, headset),



- installation on dedicated dispatcher console DGT 5810, DGT 3794 or any PC, non-proprietary computer (in such case possible functional limitations depending on the configuration of the equipment and attached peripherals),
- customized keyboard shortcuts (when using a keyboard in addition to / or instead of the touch screen).

Dispatch Console DGT 5810



- 19" touch screen,
- dedicated DGT hardware solution, based on the PC module and specialized audio support modules, silent and reliable construction - no moving parts, fanless, SSD disk,
- gooseneck microphone,
- 6 independent speakers with volume control,
- handset and headset interface, support for selected wireless Plantronics headsets,
- possibility to connect additional PTT footswitches,
- 2 x LAN, 3 x USB, headset and handset interface.

Dispatch Console DGT 3794 TIPRO

- based on TIPRO company hardware - 10" or 15" touchscreen, fanless PC module - silent and reliable - no moving parts, industrial grade components,
- goose-neck microphone with illuminated PTT key,
- stereo loudspeakers (Left and Right, 2 x 2W) with two separate volume control encoder, central low-frequency loudspeaker (1 x 1W) with programmable equalizer,
- 2 x LAN, 6 x USB, 1 x COM, 1 x VGA, 2 x digital input

DGT-MCS system architecture

DGT-MCS is a modular solution that consists of the following hardware and / or software elements:

- Telephony Server – DGT SSW,
- Radio Server – DGT Radio Server,
- Voice Recording Server – DGT NetCRR2,
- Radio Gateway – DGT RGW v1C, DGT RGW v1R,
- Emergency and alert notification server – DGT OSA (optional, Windows software),
- Dispatcher Console (DGT 5810, 3794) with Dispatcher Application DGT KSW or DGT DCA.

DGT-MCS system architecture