

Masterclock Firmware Update Procedure for GMR Series, NTP100 Series, NTDS Series, TCDS Series, MDN Series, MC-ECC, MC-EID, MC-EOD20, MC-ECC+, RC600/RC1000

Precautions for the Firmware Update

Please read the update instructions carefully before beginning. The firmware update may take up to 5 -10 minutes per unit. Once the update begins, do not turn off the power supply to the unit until it is time to restart it.

Please follow the procedures as instructed when you update. Note that the update may fail if you do any of the following:

• Interrupt the power supply to the unit

• Insert or remove the LAN cable from a device in your network when updating over a network.

• Insert or remove a USB cable when updating via USB.

https://www.masterclock.com/masterclock-firmware-updates.html https://www.masterclock.com/masterclock-software-products.html **1.** Download and extract the files from the .zip file containing the latest firmware update utility and firmware.

2. Run the update application named "UpdateUtilityUser.exe" located inside the "Masterclock_Firmware bin files" folder.

^	Name	Туре	Cc
)	Firmware+Update+Procedure	Firefox PDF Document	
	MfdBootloader_2.hex	HEX File	
	MfdBootloader_3.hex	HEX File	
	MfdBootloader_4.hex	HEX File	
	MfdBootloaderAnalog_2.hex	HEX File	
	MfdBootloaderAnalog_3.hex	HEX File	
	MfdPrimary_2.hex	HEX File	
	MfdPrimary_3.hex	HEX File	
	MfdPrimary_4.hex	HEX File	
	MfdPrimaryAnalog_2.hex	HEX File	
	MfdPrimaryAnalog_3.hex	HEX File	
	MfdTextSegment_4.hex	HEX File	
	UpdateUtilityUser	Application	
.	<		>

3. Click the "Setup" option from the menu bar.

Setup completed.						
	Version	IP address	MAC address	Status		
		Version	Version IP address	Version IP address MAC address	Version IP address MAC address Status	Version IP address MAC address Status Image: Status Image: Status Image: Status Image: Status Image: S

4. Click on the button "Browse...." select the "Masterclock_Firmware bin files" folder and click "okay".

Path to binary (.hex) files	Browse,	Cancel
Password (max. 12 characters)	Show password	
up		
up Gelect directory and enter password Path to binary (.hex) files		ОК

5. Enter the password {Note: the factory default password is "public"}

6. Select "Search" option from the menu bar.

urrent Task:		Activity Log:					
amily	Name		Version	IP address	MAC address	Status	

7. When search is complete select your device(s) from the returned search list.

[Note: it is highly recommended to test update on one device first. After verifying functionality, you may select multiple devices.]

etup searen options sta	int Update Abort				Log	About	E
Jurrent Task:	f	activity Log:					
Device se	arch.	Initiating local subnet search. Completed device search, found 9:	2 devices in 8.324 s	econds			
		Device search	×				
Family	Name	Device search Versionsted.	IP address	MAC address	Status		,
	NTDC24 PD.CA	4.4.5	10 0 101 105	00.21.22.01.00.04			1
NTDS Clocks	NIDS24-BD:CA	4,4,5	10.0.101.155	00:21:32:01:6D:CA			
NTDS Clocks MFD Multifunction Display	MDN29-A3:08 DAE Blue Count	5.12.0	10.0.101.155	00:21:32:01:8D:CA			
NTDS Clocks MFD Multifunction Display GMR5000 Master Reference	MDN29-A3:08 DAE Blue Count GMR5000-NTP-CB:A2	4.4.5 5.12.0 5.11.00K	10.0.101.155	00:21:32:01:BD:CA 00:21:32:01:A3:08 00:21:32:01:CB:A2			
NTDS Clocks MFD Multifunction Display GMR 5000 Master Reference NTP Server	MDN29-A3:08 DAE Blue Count GMR5000-NTP-CB:A2 NTP 100-OSC-CB:CB	4,4,3 5,12,0 5,11,00K 5,9,3	10.0.101.155 10.0.100.220 10.0.100.250 10.0.101.33	00:21:32:01:BD:CA 00:21:32:01:A3:08 00:21:32:01:CB:A2 00:21:32:01:CB:CB			
NTDS Clocks MFD Multifunction Display GMR5000 Master Reference NTP Server MFD Multifunction Display	MDN29-A3:08 DAE Blue Count GMR5000-NTP-CB:A2 NTP100-OSC-CB:CB MDN29-72:33-cds	4.4.3 5.12.0 5.11.0℃ 5.9.3 5.11.58	10.0.101.155 10.0.100.220 10.0.100.250 10.0.101.33 10.0.100.180	00:21:32:01:BD:CA 00:21:32:01:A3:08 00:21:32:01:CB:A2 00:21:32:01:CB:CB 00:21:32:01:72:33			
NTDS Clocks MFD Multifunction Display GMR 5000 Master Reference NTP Server MFD Multifunction Display NTP Server	MDN29-A3:08 DAE Blue Count GMR5000-NTP-CB:A2 NTP 100-OSC-CB:CB MDN29-72:33-cds NTP 100-OSC-CB:C7	5.12.0 5.11.00K 5.9.3 5.11.58 5.9.3	10,0,101,155 10,0,100,220 10,0,100,250 10,0,101,33 10,0,100,180 10,0,101,41	00:21:32:01:A3:08 00:21:32:01:A3:08 00:21:32:01:CB:A2 00:21:32:01:CB:CB 00:21:32:01:CB:C7			
NTDS Clocks MFD Multifunction Display GMK5000 Master Reference NTP Server MFD Multifunction Display NTP Server NTDS Clocks	MDN29-4308 DAE Blue Count GMR5000-NTP-CB:A2 NTP 100-OSC-CB:CB MDN29-72:33-cds NTP 100-OSC-CB:C7 Mike (Essemtec)	5,12,0 5,11,00K 5,9,3 5,11,58 5,9,3 5,9,3 5,9,3	10.0.101.155 10.0.100.220 10.0.100.250 10.0.101.33 10.0.100.180 10.0.101.41 10.0.101.41	00:21:32:01:BD:CA 00:21:32:01:A3:08 00:21:32:01:CB:A2 00:21:32:01:CB:CB 00:21:32:01:CB:CB 00:21:32:01:CB:C7 00:21:32:01:75:59			
NTDS Clocks MFD Multifunction Display GMR 5000 Master Reference NTP Server MFD Multifunction Display NTP Server NTDS Clocks NTP Server	MDN29-450:CA MDN29-A3:08 DAE Blue Count GMR5000-NTP-CB:A2 NTP100-OSC-CB:CB MDN29-72:33-cds NTP100-OSC-CB:C7 Mike (Essemtec) NTP100-OSC-CB:C4	5,4,3 5,12,0 5,11,00K 5,9,3 5,9,3 5,9,3 5,9,3 5,9,3 5,9,3 5,9,3	10.0.101.155 10.0.100.220 10.0.100.250 10.0.101.33 10.0.100.180 10.0.101.41 10.0.101.43 10.0.101.35	00:21:32:01:A3:08 00:21:32:01:A3:08 00:21:32:01:CB:A2 00:21:32:01:CB:CB 00:21:32:01:CB:CB 00:21:32:01:CB:C7 00:21:32:01:CB:C7			
NTDS Clocks MFD Multifunction Display GMR5000 Master Reference NTP Server MFD Multifunction Display NTP Server NTDS Clocks NTP Server NTP Server	MDN29-450:CA MDN29-A3:08 DAE Blue Count GMR5000-NTP-CB:A2 NTP 100-OSC-CB:CB MDN29-72:33-cds NTP 100-OSC-CB:C7 Mike (Essemtec) NTP 100-OSC-CB:C4 NTP 100-OSC-CB:D3	5,4,3 5,12,0 5,11,00K 5,9,3 5,11,58 5,9,3 5,9,3 5,9,3 5,9,3 5,9,3 5,9,3 5,9,3	10.0.101.152 10.0.100.220 10.0.100.250 10.0.101.33 10.0.101.43 10.0.101.41 10.0.101.43 10.0.101.45 10.0.101.26	00:21:32:01:BD:CA 00:21:32:01:A3:08 00:21:32:01:CB:A2 00:21:32:01:CB:CB 00:21:32:01:CB:CB 00:21:32:01:CB:C7 00:21:32:01:CB:C7 00:21:32:01:CB:C4 00:21:32:01:CB:C3			
NTDS Clocks MFD Multifunction Display GMR5000 Master Reference NTP Server MFD Multifunction Display NTP Server NTD Sclocks NTP Server NTP Server NTP Server NTP Server	ND52+D:CA MDN29+A3:08 DAE Blue Count GMR5000-NTP-CB:A2 NTP 100-OSC-CB:CB MDN29-72:33-Cds NTP 100-OSC-CB:C7 Mike (Essemtec) NTP 100-OSC-CB:C4 NTP 100-OSC-CB:D3 NTP 100-OSC-CB:C6	5.11.00K 5.9.3 5.9.3 5.9.3 5.9.3 5.9.3 5.9.3 5.9.3 5.9.3 5.9.3 5.9.3 5.9.3 5.9.3 5.9.3 5.9.3	10,0,101,155 10,0,100,220 10,0,100,250 10,0,101,33 10,0,100,180 10,0,101,41 10,0,101,43 10,0,101,35 10,0,101,26 10,0,101,39	00:21:32:01:A3:08 00:21:32:01:CB:A2 00:21:32:01:CB:A2 00:21:32:01:CB:CB 00:21:32:01:CB:C7 00:21:32:01:CB:C7 00:21:32:01:CB:C7 00:21:32:01:CB:C4 00:21:32:01:CB:C4			
NTDS Clocks MFD Multifunction Display MFD Multifunction Display MFD Multifunction Display MFD Multifunction Display MTD Server NTDS Clocks NTP Server NTP Server NTP Server NTDS Clocks QL MUTD Clocks	MDN29-4308 DAE Blue Count GMR5000-NTP-CB:A2 NTP 100-OSC-CB:CB MDN29-72:33-cds NTP 100-OSC-CB:C7 Mike (Essemtec) NTP 100-OSC-CB:C7 Mike (Essemtec) NTP 100-OSC-CB:C4 NTP 100-OSC-CB:C6 Essemtec CHTCFD12-40:00, DATS	5,12,0 5,11,00K 5,9,3 5,11,58 5,9,3 5,9,2,9,3 5,9,5,9,5,9,5,9,5,9,5,9,5,9,5,9,5,9,5,9	10.0.100.20 10.0.100.220 10.0.100.250 10.0.100.33 10.0.100.180 10.0.101.43 10.0.101.43 10.0.101.45 10.0.101.35 10.0.101.39 10.0.101.1	00:21:32:01:A3:08 00:21:32:01:CB:A2 00:21:32:01:CB:A2 00:21:32:01:CB:C3 00:21:32:01:CB:C3 00:21:32:01:CB:C7 00:21:32:01:CB:C7 00:21:32:01:CB:C5 00:21:32:01:CB:C3 00:21:32:01:CB:C6 00:21:32:01:CB:C6			
NTDS Clocks MFD Multifunction Display MFD Multifunction Display NTP Server MFD Multifunction Display NTDS clocks NTD Server NTD Server NTP Server NTD Sclocks CLKNTD Clocks	MDN29-4308 DAE Blue Count GMR5000-NTP-CB:A2 NTP 100-OSC-CB:CB MDN29-72:33-cds NTP 100-OSC-CB:C7 Mike (Essemtec) NTP 100-OSC-CB:C4 NTP 100-OSC-CB:C4 NTP 100-OSC-CB:C6 Essemtec CLKTCD 12-49:99 - DAE MTDC20LW 24-47 Mich Code	5,4,3 5,12,0 5,11,00K 5,9,3 5,9,5,9,5,9,5,9,5,9,5,9,5,9,5,9,5,9,5,9	10.0,100,200 10.0,100,220 10.0,100,250 10.0,101,33 10.0,101,43 10.0,101,43 10.0,101,43 10.0,101,35 10.0,101,39 10.0,101,39 10.0,101,1 10.0,101,78	00:21:32:01:A3:08 00:21:32:01:A3:08 00:21:32:01:CB:A2 00:21:32:01:CB:CB 00:21:32:01:CB:CB 00:21:32:01:CB:C7 00:21:32:01:CB:C7 00:21:32:01:CB:C4 00:21:32:01:CB:C6 00:21:32:01:CB:C6 00:21:32:01:75:55 00:21:32:01:75:55			
NTDS Clocks MFD Multifunction Display GMR5000 Master Reference NTP Server MFD Multifunction Display NTP Server NTDS Clocks NTP Server NTP Server NTP Server NTDS Clocks CLKNTD Clocks NTDS Clocks NTDS Clocks NTDS Clocks	NTD524-BJ:CA MDN29-A3:08 DAE Blue Count GMR5000-NTP-CB:A2 NTP 100-OSC-CB:CB MDN29-72:33-Cds NTP 100-OSC-CB:C7 Mike (Essemtec) NTP 100-OSC-CB:C4 NTP 100-OSC-CB:C4 NTP 100-OSC-CB:C4 NTP 100-OSC-CB:C6 Essemtec CLKTCD 12-49:99 - DAE NTD526LUX-74:47 Mike's Cube	5.9.3 5.9.2 5.9.3 5.9.2 5.9.3 5.9.2 5.9.3 5.9.2 5.9.3 5.9.2 5.9.3 5.9.2 5.9.3 5.9.2 5.9.3 5.9.3 5.9.2 5.9.3 5.9.3 5.9.3 5.9.3 5.9.3 5.9.3 5.9.3 5.9.3 5.9.3 5.9.3 5.9.2 5.9.3 5.9.5 5.9.5 5.9.5 5.9.5 5.9.5 5.9.5 5.5.5 5.5.5 5.5.5 5.5.5	10.0.100.20 10.0.100.220 10.0.100.250 10.0.101.33 10.0.100.180 10.0.100.180 10.0.101.43 10.0.101.35 10.0.101.26 10.0.101.28 10.0.101.78 10.0.101.78 10.0.101.78	00:21:32:01:A3:08 00:21:32:01:CB:A2 00:21:32:01:CB:A2 00:21:32:01:CB:CB 00:21:32:01:72:33 00:21:32:01:CB:C7 00:21:32:01:CB:C7 00:21:32:01:CB:C4 00:21:32:01:CB:C6 00:21:32:01:CB:C5 00:21:32:01:75:55 00:21:32:01:75:55			
NTDS Clocks MFD Multifunction Display GMK5000 Master Reference NTP Server MFD Multifunction Display NTP Server NTDS Clocks NTP Server NTP Server NTP Server NTP Server NTDS Clocks CLKNTD Clocks NTDS Clocks NTDS Clocks NTDS Clocks	NTDS244DI:CA MDN29-A3:08 DAE Blue Count GMR5000-NTP-CB:A2 NTP 100-OSC-CB:CB MDN29-72:33-cds NTP 100-OSC-CB:C7 Mike (Essemtec) NTP 100-OSC-CB:C6 NTP 100-OSC-CB:C3 NTP 100-OSC-CB:C3 NTP 100-OSC-CB:C3 NTP 100-OSC-CB:C6 Essemtec CLKTCD 12-49:99 - DAE NTDS24(8AL-B0:81 NTDS24(8AL-B0:81 NTDS24(9AC-B0:61)	5,12,0 5,11,00K 5,9,3 5,9,2 5,9,2 5,9,2 5,9,2 5,9,2 5,9,3 5,9,3 5,9,2,9,2 5,9,2,9,2 5,9,2,9,2 5,9,2,9,2,9,2 5,9,2,9,2,9,2,9,2,	10.0.100.200 10.0.100.220 10.0.100.250 10.0.101.33 10.0.101.43 10.0.101.43 10.0.101.43 10.0.101.45 10.0.101.26 10.0.101.39 10.0.101.78 10.0.101.79 10.0.101.79	00:21:32:01:A3:08 00:21:32:01:CB:A2 00:21:32:01:CB:A2 00:21:32:01:CB:CB 00:21:32:01:CB:CB 00:21:32:01:CB:C7 00:21:32:01:CB:C7 00:21:32:01:CB:C6 00:21:32:01:CB:C6 00:21:32:01:CB:C6 00:21:32:01:75:55 00:21:32:01:75:55 00:21:32:01:75:49:99 00:21:32:01:75:49:99			

8. Select "Start Update" option from the menu bar. A message "Waiting for device to request download" will be displayed. The selected device should automatically begin downloading within 60 seconds (2-3 minutes if not on a DHCP enabled server). Monitor the message in the application.

irrent Task:		Activity Log:						
		Initiating local subne Completed device se	t search. arch, found 9	92 devices in 8.324 se	econds			
				122 22	11 202 2 200			
amily	Name	A.	Version	IP address	MAC address	Status		
TDS Clocks	Essemtec	a kow	5.9.3	10.0.101.1	00:21:32:01:75:55			
MR 1000 Master Deference	GMR 1000- 1P-90:47 DAE 1	key .	5 12 35	10.0.101.101	00.21.32:01:90:4/			
MP 5000 Master Deference	CMP 5000-NTP-CP-A2	NEV	5 11 0	10.0.100.09	00:21:32:01:C7:41			
MR 5000 Master Reference	GMR 5000 NTP-CB:A3		5.11.0	10.0.100.250	00:21:32:01:CB:A3			
MR 5000 Master Reference	GMR 5000 PTP-67:3E engr	.26	5, 12, 22	10.0.100.26	00:21:32:01:67:3E			
MR 5000 Master Reference	GMR 5000-PTP-77:DD Kyle	2	5.10.0	10.0.101.72	00:21:32:01:77:DD			
MR 5000 Master Reference	GMR 5000-PTP-95:3C DAF	BRef	5.10.0	10.0.101.185	00:21:32:01:95:30			
MR 5000 Master Reference	GMR 5000-PTP-9A:C7 enar	kev	5.12.35	10.0.100.68	00:21:32:01:9A:C7			
MR5000 Master Reference	GMR 5000-PTP-A4:A1 DAE		5.10.0	10.0.101.197	00:21:32:01:A4:A1			
C-ECC CS-3 & CS-5 Generator	MC-ECC-1000-AE:83 DAE 0	Driginal	5.3.0	10.0.101.85	00:21:32:01:AE:83			
C-ECC CS-3 & CS-5 Generator	MC-ECC-1000-B9:56 DAE A	A-Count	5.12.0	10.0.100.179	00:21:32:01:B9:56			
C-ECC CS-3 & CS-5 Generator	MC-EID-1000-B9:53 DAE 1		5.12.0	10.0.100.241	00:21:32:01:B9:53			
C-ECC CS-3 & CS-5 Generator	MC-EID-1000-B9:54 DAE 2		5.12.0	10.0.100.102	00:21:32:01:B9:54			
C-ECC CS-3 & CS-5 Generator	MC-EID-1000-89:55 DAE R	emote	5,12.0	10.0.100.202	00:21:32:01:B9:55			
	110 LID 1000 D3100 DAL 10							
							2	>
sterclock Programming Utilit	y t Update Abort	25/2020 2 44 BM			- ACT 1/D	Lo	g About	>
asterclock Programming Utilit up Search Options Star urrent Task:	y t Update Abort	Activity Log:			LACT WD	Lo	g About	>
isterclock Programming Utilit up Search Options Star rrent Task: Downloading for GMR50 K64 primary ap	y t Update Abort 000-NTP-CB:A3: plication	Activity Log: Initiating local subne Completed device se Setup completed. 1 device(s) will be up Waiting for GMR5000	t search. arch, found 9 idated. D-NTP-CB:A3	92 devices in 8.324 se to request download	econds	Lo	g About	>
sterclock Programming Utilit up Search Options Star rrent Task: Downloading for GMR5(K64 primary ap Sending block 6 of 31 Updating devic	y t Update Abort D00-NTP-CB:A3: plication 15 (retries: 0) e 1 of 1	Activity Log: Initiating local subne Completed device se Setup completed. 1 device(s) will be up Waiting for GMR500 Downloading K64 pri	t search. arch, found (dated. J-NTP-CB:A3 mary applicat	92 devices in 8. 324 se to request download ion for GMR5000-NTF	econds	Lo	g About	>
sterclock Programming Utilit up Search Options Star rrent Task: Downloading for GMR5(K64 primary ap Sending block 6 of 31 Updating devic	y t Update Abort D00-NTP-CB:A3: plication 15 (retries: 0) e 1 of 1	Activity Log: Initiating local subne Completed device se Setup completed. I device(s) will be up Waiting for GMR 5000 Downloading K64 pri	t search. arch, found 9 adated. D-NTP-CB:A3 mary applicat	92 devices in 8.324 se to request download ion for GMR5000-NTF IP address	econds CB:A3 MAC address	Lo	g About	>
sterclock Programming Utilit up Search Options Star rrent Task: Downloading for GMRS0 K64 primary ap Sending block 6 of 31 Updating devic	y t Update Abort D00-NTP-CB:A3: plication 15 (retries: 0) e 1 of 1 Name CLKNTD 12-BE:SF	Activity Log: Initiating local subne Completed device se Setup completed. 1 device(s) will be up Waiting for GMR5000 Downloading K64 pri	t search, arch, found (dated.)-NTP-CB:A3 mary applicat Version 5.11.0	92 devices in 8.324 se to request download ion for GMR5000-NTP I/P address 10.0.101.21	econds 	Lo	g About	>
sterclock Programming Utilit sterclock Programming Utilit up Search Options Star rrent Task: Downloading for GMR5(K64 primary ap Sending block 6 of 31 Updating devic amily LKNTD Clocks	y t Update Abort D00-NTP-CB:A3: plication 15 (retries: 0) e 1 of 1 Name CLKNTD 12-BE:SF CLKNTD 12-CB:CD	Activity Log: Initiating local subne Completed device se Setup completed. 1 device(s) will be up Waiting for GMR500 Downloading K64 pri	t search. arch, found (dated,)-NTP-CB:A3 mary applicat Version 5.11.0	92 devices in 8. 324 se to request download ion for GMR5000-NTF IP address 10.0. 101.21 10.0. 101.27	Conds	Lo	g About	>
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sterclock Programming Utilit up Search Options Start rrent Task: Downloading for GMR5(K64 primary ap) Sending block 6 of 31 Updating devic amily LKNTD Clocks LKNTD Clocks LKNTD Clocks	y t Update Abort D00-NTP-CB:A3: plication 15 (retries: 0) e 1 of 1 Name CLKNTD 12-8E:5F CLKNTD 12-8CD CLKTCD 12-49:99 - DAE Essemtec	Activity Log: Initiating local subne Completed device se Setup completed. 1 device(s) will be up Waiting for GMR 5000 Downloading K64 pri	t search. arch, found 9 dated. 0-NTP-CB:A3 mary applicat Version 5.11.0 5.11.0 5.11.0 5.11.0 5.12.0	22 devices in 8.324 set to request download ion for GMR 5000-NTF IIP address 10.0.101.21 10.0.101.78 10.0.101.78	MAC address 00:21:32:01:8E:5F 00:21:32:01:49:99 00:21:32:01:75:55	Lo	g About	>
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IMPORTANT NOTES: Do not interrupt the update process or power cycle the device being updated after the download process has begun, as this may cause the device to become non-responsive, and it unable to recover. Under this circumstance, the device will have to be returned to Masterclock under our RMA procedure.

Allow the device to update fully – This may take 5 to 10 minutes, per device. Be patient – the device may be receiving a full update of all internal hardware, and this may take several download cycles.

If the application does not begin downloading to the device within 60 seconds (2-3 minutes if not on DHCP enabled servers). Cycle the power on the device while the firmware update application is still open to initiate the download request. Do not cycle power during the update process.